Audit of irrigation modernisation Water Recovery 2025

Macalister Irrigation District 2030 – Phase 1A

Report Date: 12/06/2025

Prepared for:

Department of Energy, Environment and Climate Action

Prepared by:

Stantec

Revision No.	Date	Description	Prepared by	Quality Reviewer	Project Manager Final Approval
A	30-07-2023	Draft	Basit Chattha	Stephen Walker	Stephen Walker
A-01	04-08-2023	Final	Basit Chattha	Stephen Walker	Stephen Walker
B	15-05-2025	2025 update	James Orr	Patrick Lamb	Patrick Lamb
B-01	12-06-2025	Minor changes	James Orr	Patrick Lamb	Patrick Lamb

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Background and findings

Background

Stantec has been engaged by the Department of Energy, Environment and Climate Action (DEECA) to undertake an independent audit of the water recovery achieved through the Macalister Irrigation District MID 2030 Phase 1A project being undertaken by Southern Rural Water (SRW). The Macalister Irrigation District is in the Gippsland region approximately 200km east of Melbourne.

Six separate audits of the water savings achieved in the Macalister Irrigation District have previously been completed. The water savings achieved have been assessed using the Victorian Department of Environment, Land, Water and Planning's *Water Savings Protocol for the Quantification of Water Savings from Irrigation Modernisation Projects* (the Protocol). The Protocol includes a "*Technical Manual for the Quantification of Water Savings*" (the Manual) which outlines the formulae for determining water savings.

This 2023 audit is the seventh audit for SRW projects to ensure estimates of water savings achieved have been prepared according to the *Water Savings Protocol and the Technical Manual*. Table 1-1 details the water savings audits which have been previously completed by Stantec of SRW projects in the MID:

Table 1-1 Previous water savings audits completed for MID2030

Previous audit of water savings	Description
April 2010	Macalister Channel Automation Project, Interim (Phase 3), Final (Phase 4), savings from two other modernisation projects
April 2012	Macalister Channel Automation Project, Balance of Final (Phase 4) water savings
August 2014	Leading Works Program, Eastern and Heyfield systems, Service point replacement and rationalisation (Phase 4)
July 2016	Macalister Channel Automation Project, Southern and Cowwarr systems and Eastern system, Leading Works program
July 2017	Macalister Channel Automation Project, Southern and Cowwarr systems and Eastern system, meter replacement and rationalisation (Heart 5, Heart Main)
July 2018	Macalister Irrigation District – Audit Phase 1A Works

We note the following scope for the review and verification of the volume of water recovered from works and measures undertaken within Phase 1A of the Macalister Irrigation District (MID) 2030 irrigation modernisation program.

The aim of the audit is to:

- Confirm and consolidate the total long-term water recovery for fixed and variable components of water recovery achieved by works and measures undertaken for the MID2030 Phase 1A. The audit is to consider non-protocol projects (special projects) and account for those water recoveries as per final review reports.

- Verify the water share volumes that have been issued to SRW from MID2030 Phase 1A water recovery and estimate the remaining water recovery volumes yet to be issued for the fixed and variable components of water recovery.
- Verify the volume of water shares that have been issued for MID2030 Phase 1A water recovery that has been sold and the volume currently retained by SRW.
- Confirm that the long-term water recovery achieved by MID2030 Phase 1A not yet distributed to beneficiaries is sufficient to meet the mitigation water requirements.
- Verify and confirm that all water recovery under MID2030 Phase 1A has been either audited or reviewed and been accounted as appropriate.

The review must cover all water recovery achieved by works and measures undertaken in MID2030 Phase 1A, which includes:

- Heyfield regulator retrofit program.
- Eastern regulator retrofit modernisation program.
- Southern Cowwarr regulator retrofit program.
- MID2030 Phase 1A outlet (service point) rationalisation program.
- Willang Yarn Balancing storage.
- Maffra weir modernisation.

Audit Assurance

This audit has been conducted in accordance with the *Protocol* and the Australian Standard on Assurance Engagements *ASAE 3000 Assurance Engagements Other than Audits or Reviews of Historical Financial Information*. This Assurance Standard places obligations on the auditor which include:

- planning the assurance engagement so that is completed effectively,
- to act ethically, and
- to control the quality of the work undertaken.

The *Protocol* and *Technical Manual* define the criteria against which this assurance engagement has been completed.

SRW has been responsible for the preparation of water savings estimates in accordance with the *Technical Manual,* including analyses, presentation of supporting records and quality control. Our primary responsibility as auditor is to confirm that water savings have been calculated in accordance with the *Technical Manual.* Other responsibilities are set out in the *Protocol* and are discussed below under ‘Water Savings Protocol Reporting Requirements’.

The audit procedures adopted by us have been designed so that we are able to form a conclusion as to whether the water savings estimates prepared by SRW are free from material misstatement and have been prepared in accordance with the *Technical Manual*.

Findings

Based on the audit work undertaken by Stantec, we conclude that:

Water recovery

- The total audited water recovery arising from the MID2030 Phase1A project where projects have been audited under the Water Savings Protocol is 7,044.37 ML LTAAY
- The water savings arising from the ND10/4/1 automation works, which were audited for the first time through this audit, is 179.5 ML LTCE (which is equivalent to 179.5 ML LTAAY)
- The approved water recovery from the two projects outside of the Water Savings Protocol are:
  - Willang Yarn Balancing Storage – 3,940.4 ML LTAAY
  - Maffra Weir – 2,330 ML LTAAY
- Therefore, the audited water recovery under the MID 2030 Phase 1A project to date is 13,494.27 ML LTAAY as shown in Table 1.

Table 1 - Total water recovery volumes of MID2030 Phase 1A project

	Total water recovery volumes (ML LTAAY)
Protocol projects previously audited	7,044.37
Protocol projects not previously audited	179.5
Non-protocol projects	6,270.4
Total	13,494.27

Conversion of water recovery to water shares

Based on our audit of the available documentation relating to water recovery for the MID2030 Phase 1A project and the associated Ministerial approvals, the long-term volumes of water recovery that have been approved for conversion to water shares and volumes that are yet to be approved are summarised in Table 2.

Table 2 – Water recovery for MID2030 Phase 1A recovered and approved for conversion to water shares

MID2030 Phase 1A	Volume (ML LTAAY)
Total water recovery	13,494.27
Total water recovery approved for conversion to water shares	6,795.00
Total audited water recovery not yet approved for conversion to water shares	6,699.27

Mitigation water requirements

Based on our review of Environmental Watering Plans, the volume of mitigation water required to meet environmental commitments is 2,214 ML LTAAY. This is less than the total water recovery that has not yet been converted to water shares and we therefore conclude that there is sufficient water recovery available to meet environmental watering commitments.

Water Savings Protocol Reporting Requirements

The Water Savings Audit Process[1] is a document under the Water Savings Protocol that sets out the approach to be taken to the independent audit of water savings. These elements are listed in Table 3 with the relevant section in the report.

Table 3 - Water Savings Protocol Reporting Requirements

Water Savings Protocol Reporting Requirement	Where this is addressed in the report
Verifying that the water savings estimates have been done in accordance this Water Savings Protocol.	Section 5
Ensuring that the data collection and inputs are as accurate as could reasonably be expected for estimating water savings.	Section 6
Random and targeted checking that the program of works for irrigation modernisation projects have been implemented as documented in the water savings estimates.	Section 5.3.2
Confirming that water savings have been estimated based on the nature and the extent of all irrigation modernisation works.	Section 5
Providing a corrected estimate of the water savings for any component where the project proponent calculations are found to be non-compliant with the Water Savings Protocol.	Section 5.5
Identifying potential improvements to the data collection, data analysis, assumptions and methods used to estimate the water savings.	Section 8.1
Recommending to DEECA changes to the Water Savings Protocol that will improve the usability and accuracy of water savings estimates.	Section 8.2
Reporting on the status of the suggested improvements made in previous audits.	Not applicable

[1]Water Savings Audit Process (Water Savings Protocol), Department of Environment, Land, Water and Planning, Version 5.0 October 2018.

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1 INTRODUCTION

1.1 PURPOSE

Stantec was engaged by Department of Energy, Environment and Climate Action (DEECA) to undertake a final cumulative audit of water recovery under Phase 1A of the Macalister Irrigation District 2030 (MID2030) irrigation modernisation program.

1.2 SOUTHERN RURAL WATER

Southern Rural Water is responsible for managing rural water use in southern Victoria and serves over 10,000 customers. The business manages water delivery from seven major dams and licenses groundwater users in the southern half of Victoria. It also manages three irrigation districts:

- Macalister Irrigation District – centered around Maffra in eastern Victoria
- Werribee Irrigation District – around 30km west of Melbourne
- Bacchus Marsh Irrigation District.

Figure 1-1 shows the extent of Southern Rural Water's areas of operation and the location of its offices.

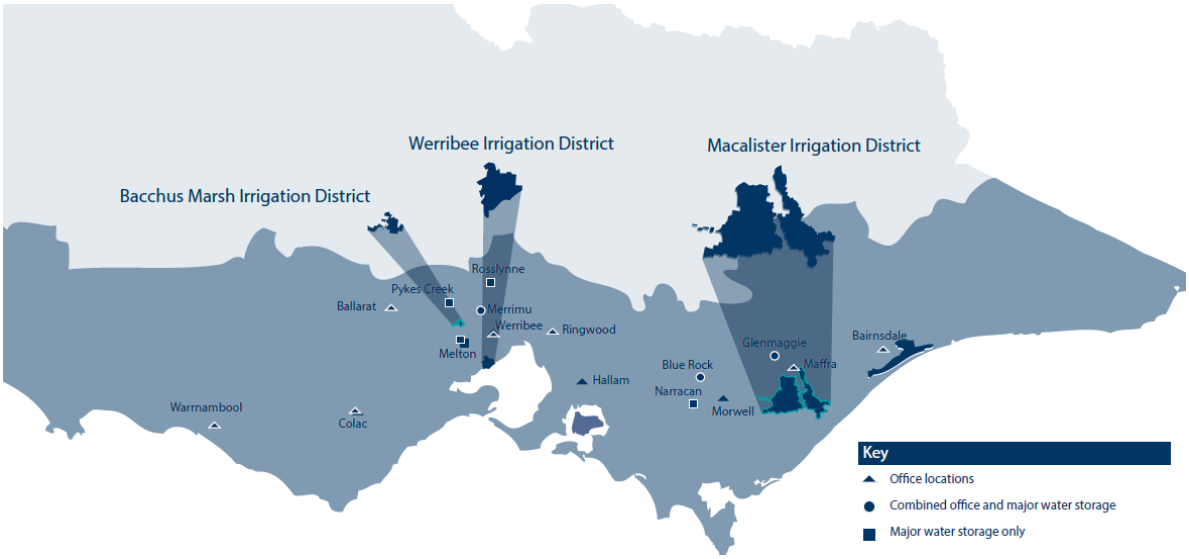

Figure 1-1 Southern Rural Water Area of Operation

Source: Southern Rural Water Annual Report 2015/16 p4

All of the water savings audited within the scope of this report have been achieved in the Macalister Irrigation District (MID). This district is supplied primarily from Lake Glenmaggie through earthen channels with some concrete and high-density polyethylene (HDPE) pipe sections. There are five supply sub-systems within the MID:

1. Northern Main – accounting for 24% of water supplied
2. Southern Main – accounting for 22% of water supplied
3. Eastern Main – accounting for 18% of water supplied
4. Southern Main and Cowwarr (Nambrok-Denison) – 35% of water supplied
5. Cowwarr – 1% of water supplied.

Figure 1-2 shows a map of the Macalister Irrigation District.

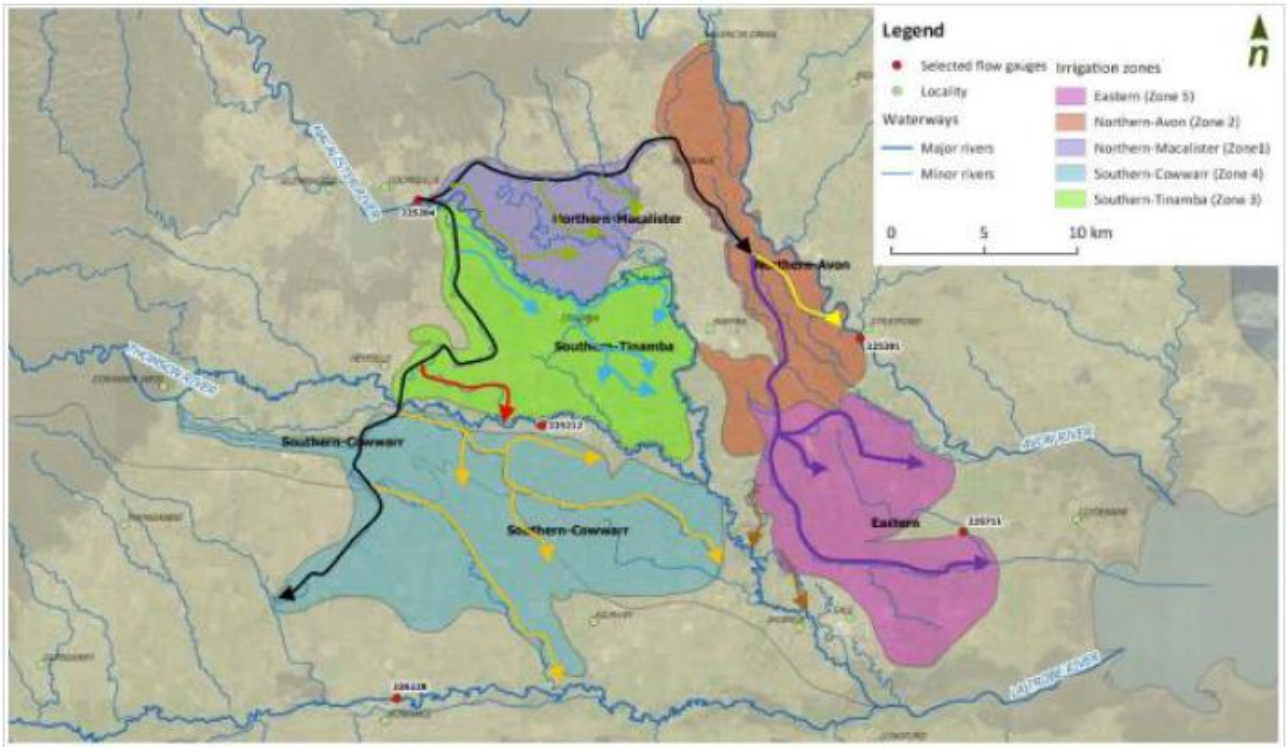

Figure 1-2 Map of Macalister Irrigation District

Source: Streamology's Environmental Watering Plan for Southern Rural Water

The MID supply system was built in two main stages. The first stage commenced in the 1920s with the construction of Lake Glenmaggie and the Main Northern System. The construction of the Southern and Eastern channels in the 1930s completed this first stage. In the second stage, the Nambrok-Denison area was developed with water abstracted from the Thomson River, work that was completed in 1958. In this period, the level of Lake Glenmaggie was also raised to provide additional supply and the Maffra Weir was constructed on the Macalister River. Construction of the Maffra Weir allowed the south eastern area of operation to be supplied from this point which relieved the supply load on the Main Northern Channel.

1.3 WATER SAVINGS PROTOCOL

The Victorian State Government has committed to clear and transparent processes for the calculation and verification of the water savings achieved through the irrigation modernisation projects.

The purpose of the Water Savings Protocol is to ensure water savings are consistently and transparently estimated and audited. Version 4.0 of the Water Savings Protocol was updated in October 2018. This audit is being carried out under version 5.0 of the Water Savings Protocol.

The Water Savings Protocol includes the water saving audit process (Chapter C) and the technical manual (Chapter D). According to the Water Savings Protocol, the independent audit of water savings should include:

- Verifying that the water savings estimates have been done in accordance with the Water Savings Protocol.

- Ensuring that the data collection and inputs are as accurate as could reasonably be expected for estimating water savings.
- Random and targeted checking that the program of works for irrigation modernisation projects have been implemented as documented in the water savings estimates.
- Confirming that water savings have been estimated based on the nature and the extent of all irrigation modernisation works.
- Providing a corrected estimate of the water savings for any component where the project proponent calculations are found to be non-compliant with the Water Savings Protocol.
- Identifying potential improvements to the data collection, data analysis, assumptions and methods used to estimate the water savings.
- Recommending to DEECA changes to the Water Savings Protocol that will improve the useability and accuracy of water savings estimates.
- Reporting on the status of the suggested improvements made in previous audits.

A copy of the Water Savings Protocol is available on the DEECA website at this location: https://www.water.vic.gov.au/water-for-agriculture/investment-in-irrigation-efficiency/water-savings-protocol.

2 SCOPE OF AUDIT

There are two parts to the scope of work required under this audit:

1. Verify and confirm water recovery under the MID2030 Phase 1A project including fixed and variable components
2. Verify water shares issued to SRW from MID2030 Phase 1A water recovery and account for volumes sold, volumes retained by SRW, and volumes required to meet mitigation water requirements.

The specific elements of the scope of the audit are:

- Confirm and consolidate the total long-term water recovery for fixed and variable components of water recovery achieved by works and measures undertaken for the MID2030 Phase 1A. This includes works that are subject to verification of water recovery using the Water Savings Protocol and 'special projects' where water recovery savings are not determined under the Water Savings Protocol (also termed 'non-protocol projects').
- Verify and confirm that all water recovery under MID2030 Phase 1A has been either audited or reviewed and been accounted as appropriate.
- Verify the long-term volumes that have been issued to SRW from MID2030 Phase 1A water recovery and estimate the remaining water recovery volumes yet to be issued for the fixed and variable components of water recovery.
- Verify the volume of long-term volumes that have been issued for MID2030 Phase 1A water recovery that has been sold and the volume currently retained by SRW.
- Assess and verify the remaining long-term water recovery volume achieved by MID2030 Phase 1A is sufficient to meet the mitigation water requirements.

3 SCOPE OF THE MID2030 PHASE 1A PROJECT

3.1 MID2030 PROJECT

The MID2030 commenced in 2013 and is a comprehensive program to upgrade irrigation infrastructure and achieve water savings. The project is jointly funded by the State Government, Commonwealth Government and Southern Rural Water and is being delivered in three phases:

- Phase 1A – which commenced in 2013 and was completed in 2017
- Phase 1B - which commenced in 2017 and was completed in 2020
- Phase 2 - which commenced in 2020.

Modernisation works were also undertaken in the MID prior to 2013 and prior to the MID2030 project. Earlier packages of work included:

- Nuntin pipeline
- Eastern and Southern Channel
- Main Northern Channel Automation
- Macalister Channel Automation
- Leading works.

3.2 SCOPE OF THE MID2030 PHASE 1A PROJECT

Delivery of the Phase 1A project is governed by a funding agreement between the State Government and Southern Rural Water. The funding agreement details the indicative scope of work of the Phase 1A project in Schedule 2. This indicative scope of works is detailed in Table 3-1 along with the estimated water savings from each element.

Table 3-1 Indicative scope of works for MID2030 Phase 1A

Project element	Indicative scope of works	Estimated water savings (ML LTAAY)
Zone 3 – Southern-Tinamba Balancing Storage & Pipeline	Completion of detailed design work for the Southern-Tinamba pipeline to inform a budget bid for MID2030 Phase 1B	-
Zone 3 – Heyfield Regulator Retrofit	Approximately 32 regulators actioned via a regulator retrofit program and incorporated into the existing channel automation system	920
Zone 4 – Southern-Cowwarr Regulator Retrofit	Approximately 204 regulators actioned via a regulator retrofit program and incorporated into the existing channel automation system	4,310
Zone 4 – Southern-Cowwarr Balancing Storage	Construction of a balancing storage downstream of the Thomson River Siphon and incorporated into the existing channel automation system	1,800
Zone 5 – Eastern Regulator Retrofit	Approximately 122 regulators actioned via a regulator retrofit program and incorporated into the existing channel automation system	3,990
Rationalisation	Facilitate a program that allows customers to access modernised outlets from a program based on the principle of cost neutrality over the life cycle of the modernised meter and rationalised assets	1,300

Schedule 2 to the business case also details that works to be undertaken would be scoped in more detail over time, reinforcing that the above is an indicative scope of work from the point in time that the funding agreement was entered into. As Phase 1A progressed, the scope of works changed, and circumstances changed and additional works (termed 'reserve projects') were added to the scope. The most significant reserve projects included in the Phase 1A works are:

- Willang Yarn Balancing storage.
- Maffra weir modernisation.

Therefore, the main elements of work undertaken under MID2030 Phase 1A project are:

- Heyfield regulator retrofit program.
- Eastern regulator retrofit modernisation program.
- Southern Cowwarr regulator retrofit program.
- MID2030 Phase 1A outlet (service point) rationalisation program.
- Willang Yarn Balancing storage.
- Maffra weir modernisation.

Figure 3-1 shows the scope of MID2030 Phase 1A Project.

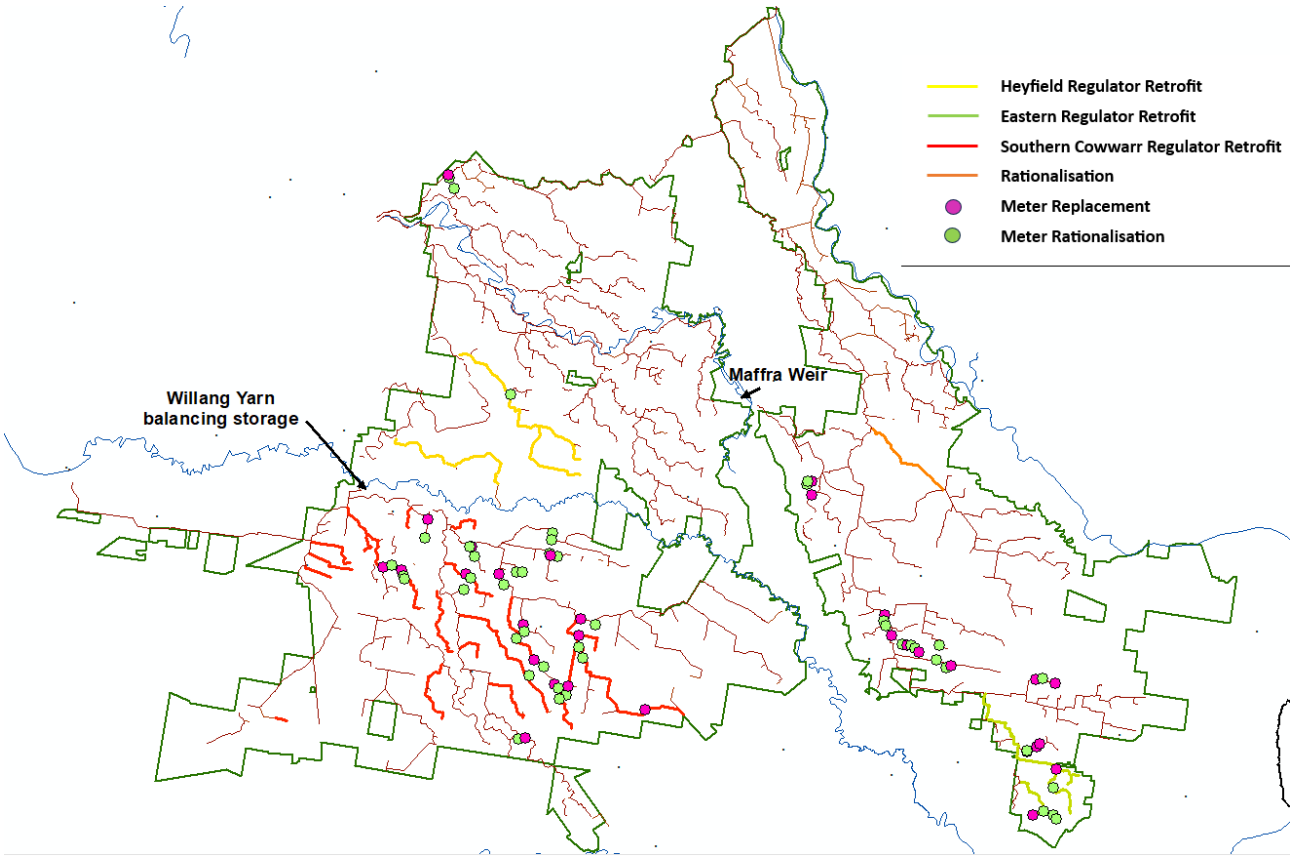

Figure 3-1 Scope of MID2030 Phase 1A Project

4 AUDIT METHODOLOGY

4.1 WATER SAVINGS AUDIT PROCESS REQUIREMENTS

The water savings audit process is outlined in Chapter C of the Water Savings Protocol and sets out the approach to be taken to the independent audit of water savings. The purpose and scope of this audit is different to a typical audit envisaged to be carried out under the Water Savings Protocol because:

- The water recovery volumes under the MID2030 Phase 1A project have been subject to audit under separate audits dating back to 2014
- The scope also includes verification of long-term water recovery from projects which are not within the scope of the Water Savings Protocol.

Therefore, the approach to this audit has sought to broadly meet the expectations of the Water Savings Protocol but not all specific requirements are relevant and therefore are not included. A mapping of the requirements for an audit of water recovery under the Water savings Protocol and how these have been addressed in this report, or deemed as not relevant, is set out in Table 4-1.

Table 4-1 Mapping of reporting requirements

Water Savings Protocol Reporting Requirement	Where this is addressed in the report
Verifying that the water savings estimates have been done in accordance the Water Savings Protocol.	Section 5
Ensuring that the data collection and inputs are as accurate as could reasonably be expected for estimating water savings.	Section 7
Random and targeted checking that the program of works for irrigation modernisation projects have been implemented as documented in the water savings estimates.	Section 5.3.2 for ND10/4/1 works. Past audit reports for other works
Confirming that water savings have been estimated based on the nature and the extent of all irrigation modernisation works.	Section 5
Providing a corrected estimate of the water savings for any component where the project proponent calculations are found to be non-compliant with the Water Savings Protocol.	Section 5.3
Identifying potential improvements to the data collection, data analysis, assumptions and methods used to estimate the water savings.	Section 8.1
Recommending to DEECA changes to the Water Savings Protocol that will improve the usability and accuracy of water savings estimates.	Section 8.2
Reporting on the status of the suggested improvements made in previous audits.	Not applicable

The Water Savings Protocol (version 5) also defines the expected content of the water savings audit report. The minimum requirements of the report and where they are fulfilled in this report, or identified as not applicable, is summarised in Table 4-2.

Table 4-2 Expected Content of Water Savings Audit Report

Requirement	Where this is addressed in the report
A summary of findings.	Summary of Findings
Background information on the irrigation modernisation projects for which the water savings estimates are being audited, including the water savings targets.	Section 3
A description of the method(s) used for the independent audit.	Section 4
The details and results of any site inspections undertaken.	Not required
An assessment of how well the project proponent's business and information systems and processes support the calculation of water savings.	Section 7
The results of random and target sampling of the data trails used in the estimates of water savings.	Section 5.3 for the ND10/4/1 works
An evaluation of all water savings estimates against the Water Savings Protocol.	Section 5
Documentation of any instances of non-compliance with the Water Savings Protocol, and the changes required to the project proponent's estimates of water savings.	Section 5
Any recommended improvements to the data and methods used to estimate and report the water savings estimates, including revisions to the Water Savings Protocol.	Section 8

The following sub-sections detail the audit process undertaken.

4.2 NON-PROTOCOL PROJECTS

This audit includes two projects where water recovery has been determined outside of the protocol. These projects are:

- Willang Yarn balancing storage
- Maffra weir modernisation.

The scope of the audit requires water recovery volumes for these non-protocol projects to be accounted for in line with the final review reports of each project.

4.3 AUDIT METHODOLOGY

The approach taken to auditing water recovery was based around interviews with key SRW staff and inspection of supporting documents. The following activities were undertaken to obtain evidence on which the audit conclusions have been drawn:

- Inception meeting with DEECA to confirm the objective, scope and timing for the audit
- Inception meeting with SRW to confirm the scope of the MID2030 Phase 1A project and water recovery audits, agree audit logistics and communication protocols and plan audit activities
- Mapping the summary of water recovery achieved under the MID2030 Phase 1A project to past audit reports to confirm alignment with the scope of works undertaken and the water recovery achieved.
- Confirming the volume of water recovered from non-protocol projects
- Auditing the water savings for the ND10/4/1 project. This included gaining assurance that the works claimed were complete through evidence including construction records and SCADA monitoring and audit of the calculations and supporting evidence such as outfall records.

- Reconciling the summary of long-term water recovery volumes of water recovered with Minister approvals
- Identifying the long-term water recovery volumes that have been issued to SRW arising from the MID2030 Phase 1A project and any volumes yet to be issued
- Identifying the long-term water recovery volumes that have been issued to SRW arising from the MID2030 Phase 1A project and the volumes that have been sold and the volumes that have been retained.
- Checking of the details of long-term volumes of water issued specifically under MID2030 Phase 1A projects by SRW against the details held on the Victorian Water Register
- Documenting mitigation water requirements for each section within MID Phase 1A area
- Verify the long-term water recovery achieved and not yet issued to SRW.
- Assess the mitigation water to confirm that the remaining volumes are sufficient for providing the defined EWPs
- Preparation of a draft and final audit report for review (this report)

4.4 SCHEDULE OF AUDIT MEETINGS

Table 4-3 lists the meetings held to complete the audit work.

Table 4-3 Schedule of Audit Meetings

Date	Meeting	Attendees	Position/Title
Monday, 15 May 2023	Inception Meeting - DEECA	Nelum Piyasena	DEECA
		Shekhar Sharma	Project Officer, DEECA
		Stephen Walker	Lead Auditor, Stantec
		Amos Micallef	Assistant Auditor, Stantec
		Basit Chattha	Assistant Auditor, Stantec
Friday, 19 May 2023	Kick off Meeting - SRW	Terry Flynn	Manager Water Resources Strategy, SRW
		Gavin Prior	Consultant, GPC Consulting
		Stephen Walker	Lead Auditor, Stantec
		Amos Micallef	Assistant Auditor, Stantec
		Basit Chattha	Assistant Auditor, Stantec
Tuesday 13 June 2023	Audit of Water Entitlement Entity (WEEs)	Gavin Prior	Consultant, GPC Consulting
		Stephen Walker	Lead Auditor, Stantec
		Amos Micallef	Assistant Auditor, Stantec
		Basit Chattha	Assistant Auditor, Stantec
Tuesday 18 July 2023[2]	Meeting DEECA – Stantec to confirm to extend scope to included ND 10/4/1 works	Nelum Piyasena	DEECA
		Shekhar Sharma	Project Officer, DEECA
		Stephen Walker	Lead Auditor, Stantec

[2] This meeting arose to confirm that the scope of the audit would be extended to include the ND10/4/1 modernisation works which had not been identified as being within the scope until after the audit commenced.

4.5 DOCUMENT REGISTER

A list of all the documents received before, during and after the audit are included in Appendix A.

5 AUDIT OF WATER RECOVERY

5.1 OVERVIEW

Much of the water recovery achieved under the Phase 1A project has been subject to previous audits to confirm the water recovered. This audit accepts the conclusions of the previous audit reports on the basis that there has been no material changes to circumstances that would change the findings of these audits. A small scope of works for modernising the Nambrok Denison (ND) 10/4/1 channel was identified by SRW as being within scope of the Phase 1A project but not having been previously audited under the Water Savings Protocol. Therefore, the savings from the ND10/4/1 project are audited following. For the two reserve projects, water savings were determined outside of the Water Savings Protocol and are treated separately. The following sections detail the water recovery from these three sources (previously audited project, projects not previously audited and projects outside the Water Savings Protocol).

5.2 WATER RECOVERY AUDITED PREVIOUSLY UNDER THE WATER SAVINGS PROTOCOL

The water savings within the scope of the MID2030 Phase 1A project claimed by SRW have been compared with the water savings that have been subject to audit previously. This comparison is shown in Table 5-1. This table shows that all of the water recovery claimed by SRW has been subject to audit previously. The total audited water recovery arising from the MID2030 Phase1A project where projects have been audited under the Water Savings Protocol is 7,044.37 ML LTAAY.

Table 5-1 Water Recovery Volumes

	Water recovery		Audit findings				Conclusion	Note
Work Program/Project	Project element	Volume of water recovery (ML LTAAY)	Year audited	Title of audit report	Auditor	Audited Volume (ML LTAAY)		
Heyfield regulator retrofit program		1,200	2014	2014 Audit of Southern Rural Water's Water Savings from the Macalister District	Cardno	1,200	Water recovery claimed verified by audit	

	Water recovery		Audit findings				Conclusion	Note
Work Program/Project	**Project element**	**Volume of water recovery (ML LTAAY)**	**Year audited**	**Title of audit report**	**Auditor**	**Audited Volume (ML LTAAY)**		
Eastern regulator retrofit program	Sale outfalls	857	2016	Audit of Water Savings for the Macalister Irrigation District 2016	Cardno	857	Water recovery claimed verified by audit	
	Heart channels	856	2016	Audit of Water Savings for the Macalister Irrigation District 2016	Cardno	856	Water recovery claimed verified by audit	
	Sale 5	5	2017	Audit of Water Savings for the Macalister Irrigation District 2017	Cardno	5.4	Water recovery claimed verified by audit	Totals do not match due to rounding
Southern Cowwarr regulator retrofit program	Southern Cowwarr Phase 1A	358	2016	Audit of Water Savings for the Macalister Irrigation District 2016	Cardno	358	Water recovery claimed verified by audit	
		2,544	2017	Audit of Water Savings for the Macalister Irrigation District 2017	Cardno	2,544.6	Water recovery claimed verified by audit	Totals do not match due to rounding
Meter replacement and rationalisation program	2016 work program	615	2016	Audit of Water Savings for the Macalister Irrigation District 2016	Cardno	615	Water recovery claimed verified by audit	
	2017 work program	359	2017	Audit of Water Savings for the Macalister Irrigation District 2017	Cardno	359.3	Water recovery claimed verified by audit	Totals do not match due to rounding
	2018 work program	249	2018	Audit of Water Savings Macalister Irrigation District – Audit Phase 1A Works 2018	Cardno	249.07	Water recovery claimed verified by audit	Totals do not match due to rounding
	TOTAL	**7,043**			**TOTAL**	**7,044.37**		Totals do not match due to rounding

5.3 WATER RECOVERY NOT PREVIOUSLY AUDITED

5.3.1 SCOPE OF WORKS

The scope of the Nambrok-Denison 10/4/1 modernisation works that have been completed comprised the automation of the channel through installation of regulator gates.

The works were undertaken in 2017 and were not previously included within the audits of Phase 1A works. The scope of the works is summarised in Table 5-2.

Table 5-2 Summary of scope of Nambrok-Denison 10/4/1 works

Scope of works element	Details
Automation of the 10/4/1 channel	Replace ST018224 with automated regulator gate Replace ST018226 with automated regulator gate

5.3.2 CONFIRMATION THAT THE WORKS DONE ARE COMPLETE

To confirm that the works claimed are complete, we reviewed the following evidence:

- contract document
- construction records
- SCADA demonstration

Our review of the contract document for the works found that they included the scope for replacement of regulators STO18224 and STO18226. The contract documents include a locality plan that details the location and nature of these structures. The contract documents also include typical construction drawings and specification that detail the work required to be undertaken.

The construction records reviewed were the emplacement checklists for the concrete structures that were put in place of the existing structures at STO18224 and STO18226 to support the new automated regulating gates, as well as installation of new automated gates. The construction records for emplacement of the structures are signed and dated across June to August 2017 for the various activities in the scope of the checklist.

SRW provided the photos in Figure 5-1 which show STO18224 and STO18226 before and after upgrade.

Figure 5-1 Photos of STO18224 and STO18226 before and after upgrade

Source: SRW

SRW also provided a live demonstration of the SCADA interface through which we were able to see historic outfall records for the ND 10/4/1 outfall (357E) searched and reported on before and after modernisation.

Based on our review of the construction contract, construction records, photos and the SCADA system, we are satisfied that the works claimed by SRW within the scope of the ND10/4/1 modernisation are complete.

5.3.3 WATER RECOVERY CALCULATIONS

All of the water recovery to date from the ND 10/4/1 channel is attributable to automation.

Automation involves provision of regulator gates that can be operated in real time in a network either remotely by operators, or by using a control strategy and system, to regulate a series of channel pool levels to meet customer demands with significantly reduced need for on-site manual intervention. Automation greatly reduces the water spillage at the end of channels (outfalls) and may reduce bank leakage by maintaining the level of water in a pool within a relatively restricted band.

The automation of the regulators STO18224 and STO18226 has led to reduced outfalls at the end of the ND 10/4/1 channel. The outfall structure at the end of this channel (357E) was installed with measurement from 2009/10.

In Version 5 of the Water Savings Protocol, outfalls in the current year and baseline year have been divided into fixed and variable components. The variable component relates to customer deliveries while the fixed component is that which would occur regardless of customer deliveries. For calculation of water savings, SRW has assigned all its outfalls on the ND 10/4/1 channel as variable. In the absence of detailed analysis into the proportion of the outfalls in each category, this is appropriate and consistent with the long-term cap equivalent (LTCE) factor being assumed as 1.0. SRW has previously agreed with the Department[3] because of the consistent characteristics of the Macalister Irrigation District.

The outfalls from the ND 10/4/1 channel between 2009/10 and 2022/23 are shown in Figure 5-2. This figure shows the substantial impact of automation with the average annual outfalls before automation being 202.4 ML and the average annual outfalls after automation dropping to 14.1 ML.

[3] As recorded in the 2010 Audit of water savings from the Macalister Channel Automation project when the relevant department was the Department of Environment and Sustainability

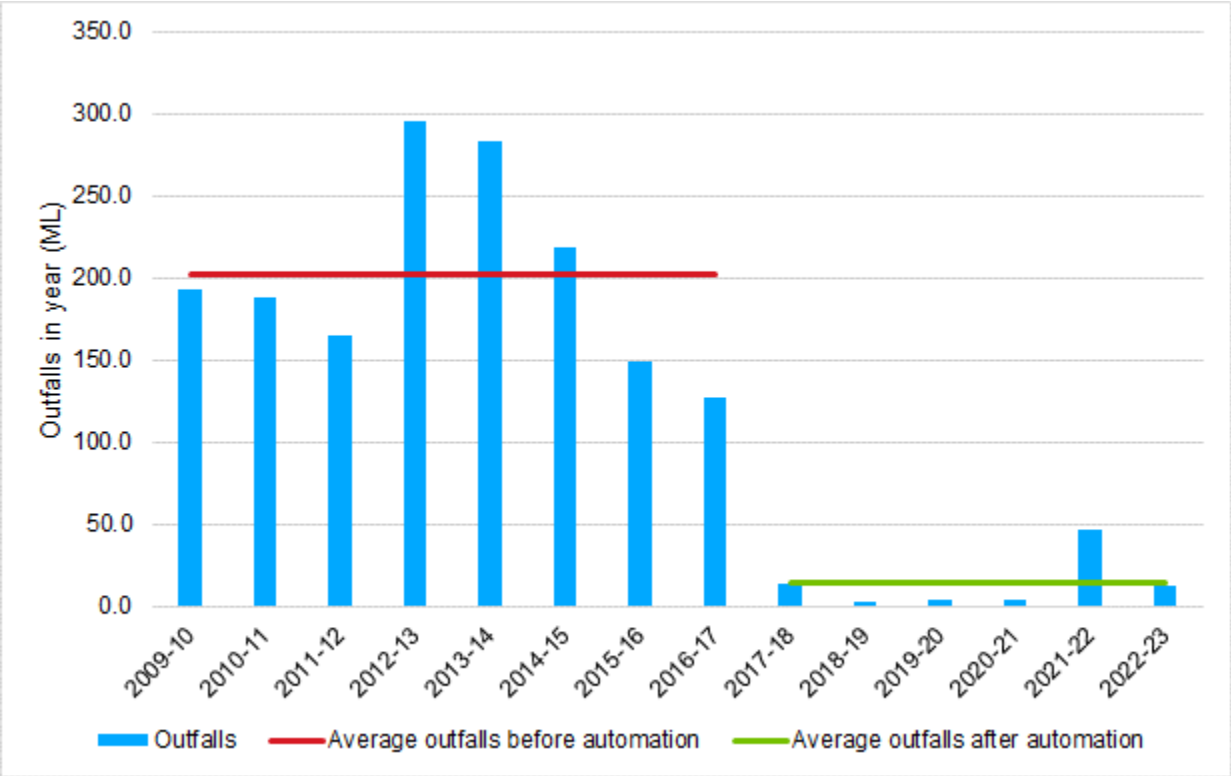

Figure 5-2 Outfalls from ND10/4/1 channel 2009/10 to 2022/23

In reviewing SRW's calculation of water recovery arising from automation of the ND 10/4/1 channel, we made the following observations:

- SRW has incorrectly included an effectiveness factor of 85% in its calculation. This factor is only used in Phase 1 and 2 estimates where outfall measurements post-works are not available. Removing this factor increases the estimated savings by around 18%, all else being equal.
- SRW used 2011/12 as a baseline year for the calculations. Selection of the baseline year should be based on consideration of factors including availability of records and system operation stability (as measured by climatic variations, impact of water savings and level of water allocations). We note that for previous audits of water savings in the MID that 2009/10 has been used as the baseline year. We consider that there is potential that the baseline year should be taken as an average of the years prior to automation given the availability of reliably measured outfall data for multiple years prior to automation. All else being equal, this would reduce the potential variance in estimates of water recovery. However, this is not explicitly consistent with the Technical Manual and we have therefore suggested this as an potential area for DEECA to explore. As 2009/10 has been used for previous audits of Phase 1A projects we have amended the calculations to use the outfalls from this year to determine water recovery.
- Outfalls after intervention are taken by SRW as the average annual outfalls in the period 2017/18 (after which works were completed) to 2022/23 (latest available) which is appropriate.

Table 5-2 details our audited calculation of water savings audit to automation.

Table 5-3 Calculation of water savings from automation

Calculation component	Value	UoM	Source and audit observations
O - base - variable	192.9	ML	2009/10
O - year x - variable	14.1	ML	Average of the period 2017/18 to 2022/23 following automation
O - base - fixed	0	ML	All outfalls assumed as variable
O - year x - fixed	0	ML	All outfalls assumed as variable
DF variable	95%		From the Technical Manual
F (LTCE) base	1.000		Previously agreed with the Department
F (LTCE) year x	1.000		Previously agreed with the Department
WS outfalls LTCE	179.5	ML	

The water savings are calculated using the following formulae from the *Technical Manual:*

$$\mathbf{WSoutfalls(LTCE)} = ((\mathbf{OBaseVariable} \times \mathbf{F(LTCEBase)}) - (\mathbf{OYearxVariable} \times \mathbf{F(LTCEYearx)}) \times \mathbf{DFVariable}) + (\mathbf{OBaseFixed} - \mathbf{OYearxFixed})$$

$$\mathbf{WSoutfalls(LTCE)} = (192.9\text{x}1) - ((14.1\ \text{x}1))\ \text{x}\ 0.95) + (0 - 0)$$

$$\mathbf{WSoutfalls(LTCE)} = 179.5\ \text{ML}$$

Therefore, we conclude that the estimate of water savings arising from the ND10/4/1 automation works is 179.5 ML LTCE, which is equivalent to 179.5 ML LTAAY.

5.4 NON-PROTOCOL PROJECTS

The two projects where water recovery has been determined outside the *Water Savings Protocol* that are within the scope of this audit are:

- Willang Yarn balancing storage
- Maffra weir modernisation.

We have reviewed the supporting material and confirmed the approved water recovery from these two projects. Table 5-4 and Table 5-5 details the water recovery volumes reported for the non-protocol projects as well as the approval of the recovery volumes. For the Maffra Weir, the water recovery volume approved by DEECA is slightly less than that put forward by SRW for approval as DEECA took into account advice to be slightly more conservative for some assumptions. The reduction of 3 ML represents 0.1% of the total put forward by SRW for approval.

Table 5-4 Water Recovery Volumes of Willang Yarn Balancing Storage

	Document Title	Author	Date	Reviewed water recovery volume (ML LTAAY)
Willang Yarn Balancing Storage	Willang Balancing Storage Water Savings Report	Southern Rural Water	October 2019	3,940.4
	Ministerial Approval Letter	Hon Lisa Neville MP, Minister for Water	05/05/2022	3,940.4

Table 5-5 Water recovery volumes of Maffra Weir

	Document Title	Author	Date	Reviewed water recovery volume (ML LTAAY)
Maffra Weir	Maffra Weir Water Balance Report	Paul Byrnes, SRW	23/02/2023	2,333
	Approval Email form Alieta Donald (Co-Executive Director, Water Resource Strategy Division DEECA) to Elisa Hunter (General Manager, SRW)	Alieta Donald, Water Resource Strategy Division DEECA	10/05/2023	2,330

5.5 SUMMARY OF WATER RECOVERY UNDER THE MID2030 PHASE 1A PROJECT

Table 5-6 summarises the overall water recovery volumes under the Phase 1A project from both projects audited under the Water Savings Protocol and non-protocol projects.

Table 5-6 Total water recovery volumes of MID2030 Phase 1A project

	Total water recovery volumes (ML LTAAY)
Protocol projects previously audited	7,044.37
Protocol projects not previously audited	179.5
Non-protocol projects	6,270.4
Total	13,494.27

6 AUDIT OF WATER SHARES

6.1 CONVERSION OF WATER RECOVERY TO WATER SHARES

As SRW has progressively completed modernisation works under the MID2030 Phase 1A project, it has sought to convert the recovered water into water shares. Conversion of water recovery to water shares is approved by the Minister under the *Water Act 1989*. There has been two approvals of conversion of water recovery from the MID2030 project to water shares by the relevant Minister, in 2014 and 2017.

However, the approvals of conversion included water recovery arising from the MID2030 Phase 1A project and from works outside of this project (but still within the Macalister Irrigation District). Table 6-1 details the approvals of conversion of water recovery to water shares relevant to the MID2030 Phase 1A Project based on the Minister's letters which we have reviewed through this audit.

In total, 6,795 ML LTAAY of long-term average water recovery has been approved for conversion to water shares arising from the MID2030 Phase 1A project which accounts for 71.3% of the total conversion approved by the Minister in 2014 and 2017 for the Macalister Irrigation District.

Table 6-1 Mapping of approved water recovery for MID2030 Phase 1A projects

Minister's letter		Mapping to water recovery projects				Mapping to Phase 1A		
Year	Water savings approved (ML LTAAY)	Elements	Sub Elements	Sub Element Water Recovery (ML LTAAY)	Total Water recovery (ML LTAAY)	In scope of Phase 1A	Volume Phase 1A (ML LTAAY)	Volume not Phase 1A (ML LTAAY)
2014	2,881	Leading Works Eastern			1,343	No		1,343
		Leading Works Stage One Rationalisation			338	No		338
		Heyfield regulator retrofit program			1,200	Yes	1,200	
2017	6,651	MID Phase 1A	Sale outfalls	857	2,686	Yes	2,686	
			Heart channels	856				
			Southern Cowwarr Phase 1A	358				
			Meter replacement	615				

Minister's letter		Mapping to water recovery projects				Mapping to Phase 1A		
Year	Water savings approved (ML LTAAY)	Elements	Sub Elements	Sub Element Water Recovery (ML LTAAY)	Total Water recovery (ML LTAAY)	In scope of Phase 1A	Volume Phase 1A (ML LTAAY)	Volume not Phase 1A (ML LTAAY)
			and rationalisation					
		Leading Works Nambrok Denison			1,056	No		1,056
		Southern Cowwarr retrofit			2,909	Yes	2,909	
Total	9,532				9,532		6,795	2,737

When the water shares are created, they are created based on conversion factors determined by the factors used by SRW at the time. Then DELWP now DEECA helped SRW to convert the audited water recovery to water shares. Table 6-2 summarises the breakdown of high reliability and low reliability water shares arising from the conversion of water recovery in 2014 and 2017. This table also shows the inferred proportion of high reliability and low reliability water shares that can be attributed to the MID2030 Phase 1A project based on the overall proportion of water recovery attributable to MID2030 Phase 1A (71.3%). The balance is attributable to leading works activities which are outside the scope of the Phase 1A project.

Table 6-2 Water recovery approved for conversion to water shares

Approval Year	Water recovery (ML LTAAY)	HRWS (ML)	LRWS (ML)
2014	2,881	2,514	1,257
2017	6,651	5,804	2,900.7
Total	**9,532**	**8,318**	**4,157.7**
Proportion of water shares that can be inferred as arising from MID2030 Phase 1A (71.3%[4])		5,929.6	2,963.9

[4] This proportion is calculated from the totals listed in Table 5-1 and represents the total volume of water recovery approved by the Minister attributable to Phase 1A projects (6,795ML) divided by the total of all MID2030 water recovery approved by the Minister (9,523 ML).

Based on our ~~audit~~ review of the available documentation relating to water recovery for the MID2030 Phase 1A project and, the long-term volumes of water recovery that have been approved for conversion to water shares and the audited volumes that is yet to be approved are summarised in Table 6-3.

Table 6-3 Water recovery for MID2030 Phase 1A recovered and approved for conversion to water shares

MID2030 Phase 1A	Volume (ML LTAAY)
Total water recovery	13,494.27
Total water recovery approved for conversion to water shares	6,795.00
Total audited water recovery not yet approved for conversion to water shares	6,699.27

The total volume of 6,699.27 7ML LTAAY of water recovery yet to be approved for conversion to water shares can be attributed to the following MID2030 Phase 1A projects:

- Meter replacement and rationalisation: 249ML
- Willang Yarn Balancing Storage: 3,940ML
- Maffra Weir: 2,330ML
- ND 10/4/1 modernisation: 179.5 ML.

6.2 WATER SHARES SOLD AND RETAINED BY SRW

The scope of the audit requires identification of the water share volumes that have been sold and the volumes that have been retained by SRW. As noted, SRW has yet to apply for recognition of 6,699.27 ML LTAAY of water recovered from the MID2030 Phase 1A project.

For the water recovery already recognized and approved to issue SRW, the funding agreements allowed for distribution of these water shares to customers on a pro-rate basis proportional to existing share holdings. This has been acknowledged by the Minister of Water. The sale process had some nuances, for example that the minimum volume to be distributed was 0.5ML. SRW provided to the auditor a register of the high reliability and low reliability water shares distributed to customers. Table 6-4 summarises the distribution of these water shares to customers by SRW. This table includes water shares that are attributable to the MID2030 Phase 1A project and water shares arising from water recovery outside of this project. (i.e. projects that commenced before 2013 such as the leading works program).

Table 6-4 Water shares sold by SRW

Share sale event	HRWS (ML)	LRWS (ML)
2015 Auction water shares sold	523.4	261.7
2015 Shelf Price water shares sold	86.0	61.0
2016 Auction water shares sold	493.0	288.0

Share sale event	HRWS (ML)	LRWS (ML)
2016 Shelf Price water shares sold	270.3	64.2
2017 Auction water shares sold	287.7	25.0
2017 Shelf price water shares sold	128.3	41.1
2018 Auction water shares sold	204.5	110.0
2018 Shelf price water shares sold	147.5	137.0
2019 Auction water shares sold	269.0	269.0
2019 Shelf price water shares sold	42.0	-
2020 Auction water shares sold	141.3	48.5
2020 Shelf Price water shares sold	1.0	-
Total 2014 approved shares sold	**2,594.0**	**1,305.5**
2018 Distribution accepted by customers	5,705.5	2,841.0
Water Sales from rejected Distribution that went 'off-the-shelf sold'	-	23.0
Total 2018 approved shares sold	**5,705.5**	**2,864.0**
Grand Total	**8,299.5**	**4,169.5**

Table 6-5 compares the volume of water shares distributed by SRW with the volume of water shares approved for conversion by the Minister. This table shows that there is a small net surplus (18.5ML, 0.2% of the total approved) of high reliability water shares and a small deficit (11.8ML, 0.3% of the total approved) of low reliability water shares when reconciled against the Phase 1A project. However, SRW has also carried forward a surplus of 10.6ML of LRWS from the Minister's approval of water share conversion in 2010 meaning that the net deficit is 1.20 ML of LRWS.

Table 6-5 Balance of water shares

	HRWS (ML)	LRWS (ML)
Shares approved for conversion	8,318.0	4,157.7
Shares sold by SRW	8,299.5	4,169.5
Balance	18.5	-11.8
Carried forward from 2010 Ministerial approval		10.60
Balance - Phase 1A and 2010 Ministerial approval		-1.20

To test the distribution of water shares, we checked the details of the water shares on SRW's register of shares distributed against the details held within the Victorian Water Register. This review found:

- Two instances where the total volume of water shares for a customer recorded by SRW was correct when compared with the Victorian Water Register but the breakdown to individual water shares purchased by the customer was incorrect when compared against the Victorian Water Register. SRW

explained that this was due to the customer changing their request for the breakdown of individual shares to be issued to them compared with their initial request. For example, a customer was recorded by SRW as receiving water shares of volume (20 ML, 40ML and 105.7ML) but they received (55.7ML, 50ML and 60ML). As the total volume is unchanged, there is no impact on the overall reconciliation of water shares.

- For all other water shares, the details recorded by SRW matched the details on the Victorian Water Register except for where water shares had been cancelled and therefore were no longer recorded on the Victorian Water Register.

The above findings show that, overall, SRW has accurately tracked water shares arising from the water recovered from the MID 2030 Phase 1A project. The discrepancies identified are explainable and do not impact on the aggregate. There is an opportunity for SRW to improve recording of water share details where these change from the initial expectation.

This trailing of water recovery to water shares recorded on the Victorian Water Register provides additional assurance over the water recovery from the MID2030 Phase 1A project and distribution of water recovery to beneficiaries (e.g. customers and the environment).

6.3 MITIGATION WATER REQUIREMENTS

Under the Water Savings Protocol, project proponents must ensure environmental mitigation water is deducted from gross water recovery prior to water recovery being recognised, converted to entitlements and issued to project beneficiaries. As of March 2025, all environmental watering plans have been finalised. Table 6-6 provides a summary of the mitigation water requirements for the Macalister Irrigation District relevant to the MID2030 Phase 1A project.

Table 6-6 lists the summary of mitigation water requirements for the Macalister Irrigation District relevant to the MID2030 Phase 1A project.

Table 6-6 Mitigation Water Required Volumes

Area	Mitigation water report	Author	Year	Mitigation water point	Mitigation water required (ML/yr)
Thomson River	Thomson River Environmental Watering Plan	Streamology Pty Ltd	2023	Reach 5	823.2
				Reach 6	1,182
Macalister River	Macalister River Environmental Watering Plan	Streamology Pty Ltd	2023	Reach 1	Not required
				Reach 2	990.9

Area	Mitigation water report	Author	Year	Mitigation water point	Mitigation water required (ML/yr)
Avon River	Avon River Environmental Watering Plan	Streamology Pty Ltd	2023	Avon River	Not required
Heart Morass	Heart Morass Environmental Watering Plan	Streamology Pty Ltd	2025	Heart Morass	400

The Thomson River Environmental Watering Plan (Streamology, 2023) states that:

Also, examination of the 2009/10 year shows that the times when incidental water is contributing to low flows in the upper reaches (Macalister Reach 2 and Thomson Reach 5) largely corresponds to the times when incidental water is contributing to low flows in Thomson Reach 6…This means that provision of mitigation water from Macalister Reach …and Thomson Reach 5 ….will supply the mitigation water required for Thomson Reach 6 without the need to provide any additional mitigation water.

The Heart Morass Environmental Watering Plan (Streamology, 2025) states that:

The Thomson River EWP mitigation water assessment identified a mitigation water gap of 823.2 ML/year for Reach 5 and 1,182 ML/year for Reach 6. This water is supplied to maintain the environmental values of the river channel. Similarly for the Macalister River, the EWP identified a mitigation water gap of 909.9 ML/year for Reach 2 to maintain the environmental values of the river channel.

For both rivers, the mitigation water is provided to support the needs of the channel reaches, including Reach 6 of the Thomson River which is immediately upstream of Heart Morass. It is feasible that Thomson Reach 6 mitigation water will pass through Reach 6 and into the lower Latrobe River where it could be used to supply Heart Morass through the regulator. However, the timing of and magnitude of mitigation water flows to Reach 6 may not align with the environmental flow requirements for Heart Morass to address exposure of acid sulphate soils.

Therefore, the 400ML/yr mitigation water required for Heart Morass is in addition to the Thomson River and Macalister River mitigation volumes. The mitigation water would previously have entered the wetland via the Heart Drain; however, SRW has indicated the drain is not a feasible asset to uitlise for environmental flow delivery.

On this basis, Heart Morass mitigation water requirements (400ML) cannot be provided by the mitigation water volumes for Reach 2 (823.2ML) and Reach 5 (990.9ML) of the Thomson River, due to poor availability and current demands within those reaches.

Therefore, the total mitigation water required to be provided by SRW is 823.2 ML + 990.9 ML + 400 ML = 2214.1 ML. The MID2030 Phase 1A project has recovered sufficient water to meet the required mitigation water volumes for the project. We therefore conclude that SRW has sufficient recovered water available to meet mitigation water requirements, subject to Ministerial approval.

7 AUDIT FINDINGS – SYSTEMS, PROCESSES AND DATA TRAILING

7.1 INTRODUCTION

The Audit Protocol requires verification that the data collection and inputs used in the water savings calculations are as accurate as could reasonably be expected. Stantec (and predecessor organisation Cardno) has completed six previous audits of Southern Rural Water's water savings (in 2010, 2012, 2014, 2016, 2017 and 2018) and reviewed the systems and processes in use by the business during these audits.

7.2 CHANGES SINCE LAST AUDIT

Southern Rural Water indicated and we observed that the systems and processes in use for the purpose of providing data for water savings calculations have not materially changed since previous audits. We have previously found the systems and processes to be sufficiently robust for the purpose of providing data for water savings calculations.

7.3 OBSERVATIONS ON SYSTEMS AND PROCESSES SUPPORTING WATER RECOVERY CALCULATIONS

In auditing the water recovery calculations, we accessed information provided to us by SRW from the following business systems:

- SCADA
- GIS
- Document management system.

We found that SRW was readily able to provide the information required to support the audit of water savings calculations. SRW also provided a live interrogation of data from the SCADA system to support the audit and we found that the system was readily available within the system for reporting and use.

Our experience during this audit supports our previous conclusion that SRW's systems and processes are sufficiently robust for the purpose of providing data for water savings calculations.

We found some errors in the water savings calculation spreadsheet used by SRW and we recommend that future calculation of water savings is subject to review before issue.

7.4 OBSERVATIONS ON PROCESSES FOR RECORDING WATER RECOVERY AND WATER SHARE TRANSFERS

In carrying out this audit, we have made the following observations and identified the following areas for improvement:

- There is an opportunity for SRW to improve the recording of the details of the water shares sold or transferred by it when it becomes aware that the details of the water shares have changed.
- Noting the changes to the scope of the Phase 1A project over time, there is an opportunity for SRW and the Department to establish a common understanding of the scope of works of future phases of modernisation works and that this common understanding of the scope of works is used to inform the scoping of any future audits of water recovery that may be required.
- The Ministerial approval of conversion of water recovery to water shares included both water recovered under the MID2030 Phase 1A project and water recovered outside of this project. There is an opportunity for SRW to consider whether future requests for approval for conversion of water recovery to water shares should differentiate between different projects, funding agencies and/or intended beneficiaries.

8 RECOMMENDATIONS FOR IMPROVEMENT

8.1 RECOMMENDATIONS FOR IMPROVEMENT IN DATA COLLECTION AND METHODS

We make the following recommendations arising from this audit:

- We recommend that SRW improve the recording of the details of the water shares sold or transferred by it when it becomes aware that the details of the water shares have changed.
- We recommend that SRW and the Department establish a common understanding of the scope of works of future phases of modernisation works and that this common understanding of the scope of works is used to inform the scoping of any future audits of water recovery that may be required.
- We recommend that SRW consider whether future requests for approval for conversion of water recovery to water shares should differentiate between different projects, funding agencies and/or intended beneficiaries.

8.2 RECOMMENDATIONS TO IMPROVE THE WATER SAVINGS PROTOCOL

We recommend that DEECA consider whether there is any benefit in the baseline year for water savings being determined using data from an average of years where this data is reliable and reflects consistent operating conditions.

APPENDIX A

Document Register

- Audit of 10/4/1

    - Gippsland and Southern Rural Water Corporation Macalister Irrigation District Civil Works Phase 1A, Southern-Cowwarr System Easter System Regulator Retrofit Tender Winter 2017

        - C1286-2017-001:ND 6 & 7 channels
        - C1298-2017:ND 10/4/1 channels
        - C1299-2017-001: Heart 3 channel
    - WorksScheduleS-CRR1AWorksC1286C1298C12992017001v720170517.pdf
    - C1286-C1298-C1299-2017-001 Phase 1A SC Civil Works Tender Document v6 20170511.pdf
    - CoPC C1286-C1298-C1299-2017-001 20170727.pdf
    - ph1a map.pdf
    - Savings 10_4_1.xlsx
    - S-C C1286-C1298-C1299-2017-001 Inspection Checklist 2017.pdf
    - Signed FIoA 20170605.pdf

- Ministerial approvals
    - Letter from the Minister for Water to Mr. Clinton Rodda, on Water Savings for Conversion to Irrigation Entitlement, dated 30/10/2014
    - Letter from the Minister for Water to Mr. Clinton Rodda, on Application For Creation of Water Shares-Macalister Irrigation District, dated 19/11/2017

- SRW ABA statements
    - ABA097230_ABA_Statement_30_Jun_2018.pdf
    - ABA097230_ABA_Statement_30_Jun_2019.pdf
    - ABA097230_ABA_Statement_30_Jun_2020.pdf
    - ABA097229_ABA_Statement_30_Jun_2016.pdf
    - ABA097229_ABA_Statement_30_Jun_2017.pdf
    - ABA097230_ABA_Statement_30_Jun_2016.pdf
    - ABA097230_ABA_Statement_30_Jun_2017.pdf

- Non protocol projects
    - Balancing Storage Water Savings - Final.pdf
    - Letter from the Minster for Water to Mr. Cameron Fitzgerald on Water Recovery for Conversion to Water Shares, dated 4/4/2022
    - OFFICIAL RE MID Phase 1A water savings SECOFFICIAL.msg
    - report-Maffra-Weir-WB-v12.pdf

- Other documents:
    - Southern Rural Water - Water Saving Audit Report 2016 - FINAL (No Appendices).pdf
    - Copy of DELWP MID Water Savings Summary 22042021 V7 - Phase 1a scope - Mapping.xlsx
    - ABA104809_ABA_Statement_09_Jun_2023.pdf
    - By pass revision.xlsx

- Savings and audits (version 2).xlsx
- v1_10 4 1 Gate 2 - Business Case- Maffra Weir Diversi.pdf
- MID2030 Business Case, 8 November 2011.pdf
- DELWP MID Water Savings Summary 22042021 V7 - Phase 1a scope.xlsx
- 2017 audit.xlsx
- Savings Cardno 9.02.2018_[FL revised].xlsx
- Audit_Data_Collation_Final.xlsx
- Southern Rural Water - Water Saving Audit Report 2017 - FINAL v2.pdf
- SRW AUDIT MID Phase 1A Works – 2018 Final V1.pdf
- DELWP MID Water Savings Summary 22042021 V7.xlsx
- Southern Rural Water - Water Saving Audit Report 2014 - FINAL.pdf

- <u>Environmental Watering Plans:</u>
  - Heart Morass Environmental Watering Plan, Southern Rural Water, March 2025 [24130_Heart_Morass_EMP_Update_Rev3.pdf]
  - Thomson River Environmental Watering Plan, Southern Rural Water, April 2023 [2283_SRW_EWP_Reporting_Thomson_Final.pdf]
  - Macalister River Environmental Watering Plan, Southern Rural Water, April 2023 [2283_SRW_EWP_Reporting_Macalister_Final.pdf]
  - Avon River Environmental Watering Plan, Southern Rural Water, June 2023 [2283_SRW_EWP_Reporting_Avon_Final.pdf]