



WaterNSW 2024 compliance report

# Report to the Minister

May 2025

Water >>

---

## Acknowledgment of Country

IPART acknowledges the Traditional Custodians of the lands where we work and live. We pay respect to Elders both past and present.

We recognise the unique cultural and spiritual relationship and celebrate the contributions of First Nations peoples.

## Tribunal Members

The Tribunal members for this review are:

Carmel Donnelly PSM, Chair  
Dr Darryl Biggar  
Jonathan Coppel  
Sharon Henrick

Enquiries regarding this document should be directed to a staff member:

Christine Allen	(02) 9290 8412
Shweta Shrestha	(02) 9113 7735

The compliance team also includes:

Nahrain Oshana	(02) 9019 1962
----------------	----------------

## The Independent Pricing and Regulatory Tribunal

IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from [IPART's website](#).

---

# Contents

<b>Summary</b>	<b>1</b>
We assessed WaterNSW's compliance against 27 obligations	1
We make 20 recommendations to address the 2024 audit findings	2
WaterNSW addressed 8 of 14 recommendations from previous years	5
<b>1 Our audit findings and recommendations</b>	<b>6</b>
1.1 WaterNSW demonstrated moderate compliance in 2023-24	6
1.2 Inputs to the audits and our compliance monitoring	7
1.3 Progress against completing previous recommendations	8
<b>2 WaterNSW's compliance over the licence term</b>	<b>21</b>
<b>A Compliance grades</b>	<b>24</b>
<b>B WaterNSW's Statement of Compliance</b>	<b>25</b>
<b>C Audit process</b>	<b>32</b>
C.1 2024 audit scope	32
C.2 2024 audit plan	34
<b>D Auditor's report</b>	<b>36</b>
<b>E IPART's checks for the 2024 audit</b>	<b>251</b>

## Summary

We have prepared this report for the Minister for Water (Minister) on WaterNSW's compliance with the Water NSW operating licence 2022-2024 (licence) over the 2023-24 compliance period (i.e. from 1 July 2023 to 30 June 2024).

IPART is responsible for monitoring WaterNSW's compliance with its licence and reporting our findings to the Minister.<sup>1</sup> We primarily do this through annual audits of WaterNSW's compliance with its licence.<sup>a</sup> We engaged Stantec in partnership with Atom Consulting to complete the 2024 audit.

WaterNSW demonstrated a moderate level of compliance with its licence over the compliance period. However, we found WaterNSW continued to be non-compliant with its obligations around adequacy and implementation of its Water Quality Management System (WQMS).

### We assessed WaterNSW's compliance against 27 obligations

The 2024 audit tested WaterNSW's compliance with 27 licence clauses. We found WaterNSW was fully compliant with 16 of those clauses.<sup>b</sup>

We assigned WaterNSW a non-compliant (material) grade against one clause related to implementation of its WQMS. We assigned non-compliant (non-material) grades for 6 clauses related to maintaining its WQMS, water conservation, bulk water supply, advance notifications of changes to flow release patterns and its external dispute resolution scheme.

We assigned WaterNSW compliant (minor shortcomings) grades for 4 clauses related to its water conservation work program, code of practice on payment difficulties and its internal complaints handling procedure.

---

<sup>a</sup> Our reports to the Minister on WaterNSW's compliance with its licence over the 2022-2024 licence term are published on our [website](#).

<sup>b</sup> The compliance grades are in Appendix A.

## We make 20 recommendations to address the 2024 audit findings

We make 20 recommendations for WaterNSW to rectify the non-compliances and shortcomings:

### Adequacy and implementation of the WQMS

1. **Recommendation 2024-1-2.1.1:** By 30 September 2025, review and update the WQMS reporting processes to the Board and Regulators. The review should focus on ensuring the comprehensiveness, accuracy, assurance and timeliness of both regular and exception-based reporting. The updated process should include the following key elements:
  - a. metric validity
  - b. source data
  - c. quality assurance (QA) process
  - d. routine and exception-based reporting
  - e. changes to metrics and targets
  - f. CCP reporting and records management
  - g. responsibilities and accountabilities for the above.
2. **Recommendation 2024-2-2.1.1:** By 30 June 2026, establish thresholds for acceptable numbers of controlled documents that are overdue for review.
3. **Recommendation 2024-3-2.1.1:** By 30 June 2026, update the process for how WaterNSW conducts water quality risk assessments, including the classification, review and assessment of those risks that were covered by the catchment-to-customer (C2C) but are now considered operational.
4. **Recommendation 2024-4-2.1.1:** By 31 December 2025, formalise the Modelpedia definition of high-risk activities associated with Process Health Checks, and update the WQMS assurance program to document that Process Health checks involve comprehensive and systematic evaluation of activities and processes to confirm that objectives are being met (aligned to the ADWG), rather than business as usual activities.
5. **Recommendation 2024-5-2.1.3:** By 30 June 2026, implement the updated WQMS reporting processes to the Board and Regulators as per Recommendation 2024-1-2.1.1.
6. **Recommendation 2024-6-2.1.3:** By 30 September 2025, develop a plan to review all overdue WQMS-related controlled documents. At a minimum, the plan should allocate review priority to the relevant documents, the date by which each document will be reviewed, and assign responsibility to the relevant persons.
7. **Recommendation 2024-7-2.1.3:** By 30 September 2025, complete a review of all high-priority controlled documents identified in Recommendation 2024-6-2.1.3, including a review of the Greater Sydney critical control point (CCP) protocols.

8. **Recommendation 2024-8-2.1.3:** By 30 June 2025, review the scheduled Process Health check activities for 2025-26 to ensure that the proposed Process Health checks are a comprehensive and systematic evaluation of activities and processes (aligned to the ADWG), rather than business as usual activities such as updating contact lists, reporting of water quality incidents, updating of procedures and general training activities.
9. **Recommendation 2024-9-2.1.3:** By 31 December 2025, ensure that any reporting to the Board and Regulator on the progress of WQMS improvement actions include, at least, the progress of actions identified from C2C risk assessments, internal and tripartite incident debriefs, Health Checks, operational risk assessments, and other actions in the Water Quality Improvement Plan.

## Water conservation strategy and work program

10. **Recommendation 2024-10-2.6.1:** By 30 June 2025:
  - a. Ensure that the controlled document for the Water Conservation Plan, required under the 2024-2028 Operating Licence, is correctly maintained in WaterNSW's document management system. The document management system should generate workflows to the appropriate persons, to ensure that appropriate resources are assigned to complete the review effectively and on time.
  - b. Develop and document clear objectives to enable WaterNSW to evaluate its performance against the objectives and outcomes of the Water Conservation Plan. WaterNSW should measure, monitor and report its performance against these objectives annually.

*This recommendation should be read in conjunction with recommendations 2024-11-2.6.2 and 2024-12-2.6.3.*

11. **Recommendation 2024-11-2.6.2:** By 30 June 2025, develop and document overarching governance arrangements for the water conservation program to:
  - a. Identify the executive or senior leadership roles with accountability for the successful implementation of the water conservation program
  - b. Provide those leadership roles with oversight of implementation progress and risks
  - c. Identify the decision-making authorities and guiding criteria for reprioritising and rescheduling water conservation activities to respond to emergent risks and opportunities and changes in staff availability.

*This recommendation should be read in conjunction with Recommendations 2024-10-2.6.1 and 2024-12-2.6.3.*

12. **Recommendation 2024-12-2.6.3:** By 30 June 2025, clearly articulate the process including specific and actionable principles for:
  - a. identifying, evaluating and selecting options for water conservation activities, together with the process for assessing new options identified in any given year
  - b. assessing the outcomes and/or benefits of water conservation activities included in the water conservation program.

*This recommendation should be read in conjunction with Recommendations 2024-10-2.6.1 and 2024-11-2.6.2.*

## Customer supply agreement with Sydney Water

13. **Recommendation 2024-13-3.2.1:** By 30 September 2025, in consultation with Sydney Water and relevant stakeholders, commence a review of the Raw Water Supply Agreement with Sydney Water to improve alignment with operational practices and needs of both organisations.
14. **Recommendation 2024-14-3.2.1:** By 30 June 2027, in consultation with Sydney Water and relevant stakeholders, either
  - a. update and implement the Raw Water Supply Agreement with Sydney Water to ensure the agreement better aligns with the operational practices and needs of both organisations; or
  - b. update practices to ensure alignment with the requirements of the existing Raw Water Supply Agreement.

## Advance notification for changes to flow release patterns

15. **Recommendation 2024-15-6.4.1:** By 30 June 2026, WaterNSW should develop and implement an appropriate governance framework which at least identifies the risk-basis for notification thresholds, and accountabilities for the provision of notifications related to the Early Warning Network System.
16. **Recommendation 2024-16-6.4.1:** By 30 September 2025, Water NSW should review the notification thresholds for water releases from Wingecarribee Reservoir and update and implement the notification procedures for Wingecarribee Reservoir.

## Code of practice on payment difficulties

17. **Recommendation 2024-17-6.8.1:** By 30 June 2025, examine document review processes for debtor management and payment assistance procedures to identify the root cause(s) of documents not being reviewed as scheduled, and identify corrective actions.
18. **Recommendation 2024-18-6.8.1:** By 30 September 2025, implement the corrective actions identified under Recommendation 2024-17-6.8.1. *This recommendation should be read in conjunction with Recommendation 2024-19-6.9.1.*

## Internal complaints handling procedure

19. **Recommendation 2024-19-6.9.1:** By 30 June 2025, review document review processes for internal complaints handling policy and procedure to identify the root cause(s) of documents not being reviewed as scheduled, and identify corrective actions.
20. **Recommendation 2024-20-6.9.1:** By 30 September 2025, implement the corrective actions identified under Recommendation 2024-19-6.9.1. *This recommendation should be read in conjunction with Recommendation 2024-17-6.8.1.*

We also identified 21 opportunities for improvement (OFI). These are identified throughout the audit. The purpose of identifying these OFIs is to highlight improvement opportunities in WaterNSW's systems and business processes where current operations may not align with industry best practice. However, we note that there is no requirement for WaterNSW to implement them.

## WaterNSW addressed 8 of 14 recommendations from previous years

We checked WaterNSW's progress in addressing 14 recommendations from previous audits and determined that WaterNSW completed 8 of the recommendations. The remaining 6 recommendations, related to adequacy and implementation of its WQMS and compliance with its memorandum of understanding (MoU) with the Natural Resources Access Regulator (NRAR), are ongoing.

Four of the 6 ongoing recommendations were due in the audit period.<sup>c</sup> WaterNSW reported that it had completed most of these recommendations by the due date. However, we identified several gaps and consider that WaterNSW has not closed out the recommendations. We will follow-up on the status of these recommendations at the next audit.

---

<sup>c</sup> The recommendations that were due in the audit period were Recommendation 2023-03 (clause 2.1.1), Recommendation 2023-08 (clause 2.1.3), Recommendation 2023-09 (clause 2.1.3), Recommendation 2023-15 (clause 6.16.1).

# 1 Our audit findings and recommendations

## 1.1 WaterNSW demonstrated moderate compliance in 2023-24

In 2024, we audited WaterNSW's compliance against 27 clauses of its 2022-2024 operating licence (licence). The auditor's report in Appendix D sets out the full audit scope.<sup>d</sup>

WaterNSW was fully compliant with 16 clauses which impose requirements related to:<sup>e</sup>

- providing information required for an end of term review of the licence (clause 1.6.2)
- maintaining a program of research on catchments (clause 2.7.1)
- implementing its asset management system (clause 5.1.2)
- establishing, maintaining and engaging with its customer advisory groups (clauses 6.5.1, 6.5.2, 6.5.3, 6.5.4 and 6.5.5)
- its customer advisory group charter (clause 6.6.2)
- its code of practice on payment difficulties (clauses 6.8.2 and 6.8.4)
- implementing and providing information on its internal complaints handling procedure (clauses 6.9.2 and 6.9.3)
- maintaining membership with the Energy and Water Ombudsman of NSW (EWON) (clause 6.10.1)
- undertaking an educative role in the community (clause 6.11.1)
- maintaining, implementing and complying with its data retention protocol with NRAR and DCCEEW (clause 6.17.2).

### 1.1.1 We assigned 7 non-compliant and 4 compliant (minor shortcoming) grades

We assessed WaterNSW as materially non-compliant with one obligation related to WaterNSW's implementation of its WQMS. We identified deficiencies with WaterNSW's implementation of its WQMS, including instances where reporting of key information to the WaterNSW Board and regulators (e.g. IPART and NSW Health) was inaccurate or inadequate. The recurring nature of the deficiencies, with limited evidence of corrective action, "provides evidence of ongoing degradation across multiple barriers".<sup>f</sup> We assessed this non-compliance as material, given the reduced "effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and safety".<sup>g</sup>

We also assessed WaterNSW as non-materially non-compliant with 6 obligations and compliant with minor shortcomings for the remaining 4 clauses.

<sup>d</sup> The audit scope is in Appendix A to the auditor's report.

<sup>e</sup> We assign 5 compliance grades reflecting a utility's compliance with its licence requirements including compliant, compliant (minor shortcomings), non-compliant (non-material), non-compliant (material) and no requirement. These grades are listed in Appendix A and explained in our [Public Water Utility Audit Guideline](#).

<sup>f</sup> See p 54 of the auditor's report in Appendix D.

<sup>g</sup> Ibid.

We summarise the non-compliances/shortcomings, and our recommendations for WaterNSW to rectify them, in Table 1.1 and Table 1.2. Our recommendations seek to resolve non-compliances and shortcomings with WaterNSW's:

- adequacy and implementation of its water quality management systems (WQMS) (clauses 2.1.1, 2.1.2 and 2.1.3)
- water conservation strategy and work program (clauses 2.6.1, 2.6.2 and 2.6.3)
- bulk water supply customer supply agreement with Sydney Water (clause 3.2.1)
- processes related to advance notification of changes to flow release patterns (clause 6.4.1)
- code of practice on payment difficulties (clause 6.8.1)
- internal complaints handling procedure (clause 6.9.1)
- information on dispute resolution services (clause 6.10.2).

### 1.1.2 The audit identified 21 opportunities for improvement

The auditor also identified 21 OFIs for WaterNSW's consideration. Our audit process allows auditors to suggest OFIs where current operations may not align with industry or international best practice. The purpose of identifying OFIs is to highlight improvement opportunities identified at the audit. However, we note that there is no requirement for WaterNSW to implement them. The OFIs identified at this audit related to audit observations around water source protection and conservation, bulk water supply, asset management and customer and stakeholder relations. The opportunities for improvement are detailed in the executive summary of the auditor's report in Appendix D.

## 1.2 Inputs to the audits and our compliance monitoring

The auditor's report, which details all the auditor's findings, is in Appendix D. We also audited some parts of the licence ourselves – our findings are explained in Appendix E.


We also consider the following in our assessment of WaterNSW's compliance:


- An annual statement of compliance (Appendix B). WaterNSW must provide this to us under part 7.1.4 of the Water NSW 2022-2024 reporting manual.
- Any relevant reports that WaterNSW submits to us on its compliance with its licence as required under the reporting manual.
- Any confidential feedback from stakeholders on WaterNSW's compliance with its licence during the compliance period.


### 1.3 Progress against completing previous recommendations

We reviewed WaterNSW's progress against completing 14 previous recommendations to rectify non-compliances or minor shortcomings identified at previous audits. WaterNSW has completed 8 of the 14 recommendations. We have summarised the ongoing recommendations in Table 1.3 below. WaterNSW will continue to be non-compliant or compliant (minor shortcomings) against these clauses until the recommendations are completed. We will audit the ongoing recommendations at the next audit, along with any new recommendations made in response to non-compliances or shortcomings identified at this year's audit.



Table 1.1 Non-compliant audit findings



Licence clause	Non-compliance	Audit grade	Recommendation # <sup>a</sup>
<b>Clause 2.1.1</b> With respect to Declared Catchment Areas, Water NSW must maintain a Water Quality Management System that is consistent with either: <ol style="list-style-type: none"> <li>the Australian Drinking Water Guidelines; or</li> <li>if NSW Health were to specify any amendment or addition to the Australian Drinking Water Guidelines that applies to Water NSW, the Australian Drinking Water Guidelines as amended or added to by NSW Health; or</li> <li>any other requirements specified or approved by NSW Health or IPART.</li> </ol>	<p>We have assigned WaterNSW a <b>non-compliant (non-material)</b> grade for clause 2.1.1. This agrees with the auditor's findings. We consider that the non-compliances are non-material given WaterNSW has applied a multi-barrier approach, as required by the Australian Drinking Water Guidelines (ADWG), in the development of its WQMS. Therefore, we consider there is a low residual risk of harm from the non-compliance due to the adequacy of its WQMS impacting WaterNSW's ability to supply safe and reliable water or meet its public health objectives.</p> <p>We identified the following deficiencies and shortcomings which contributed to a non-compliant (non-material) finding:</p> <ul style="list-style-type: none"> <li>Element 1 (commitment to drinking water quality): there were inconsistencies in Modelpedia<sup>b</sup> around the required frequency of updating stakeholder contact information.</li> <li>Element 2 (assessment of the drinking water supply system): WaterNSW's WQMS (i.e. Modelpedia) and the <i>Conduct Catchment-to-Customer Risk Assessment</i> do not contain definitions or supporting processes to evaluate uncertainty.</li> <li>Element 3 (preventative measures for drinking water quality): we observed inconsistencies between Modelpedia and supporting documents on managing deviations from critical limits. WaterNSW did not have documented change management processes to ensure that critical control point (CCP) alarms are reset if alarms are raised above the critical limit. There was insufficient evidence to confirm that all CCPs were adequately reviewed as expected.</li> <li>Element 4 (operational procedures and process controls): the Operations &amp; Maintenance manual for Upper Canal was not formalised until after the audit period.</li> <li>Element 6 (management of incidents and emergencies): there were inconsistencies in parts of the water quality parameters across supporting documents.</li> <li>Element 7 (employee awareness and training): there was no documented process to ensure that contractors have appropriate water quality awareness, training, qualifications and experience.</li> <li>Element 10 (documentation and reporting): Modelpedia did not adequately document expected information relevant to all relevant aspects of drinking water quality management or include documented training requirements, including completion of records (e.g. role-specific training and competency requirements for record keeping and reporting). We also found incorrect/obsolete references to review timeframes which did not align with current practices.</li> </ul>	 Non-compliant (non-material)	2024-1-2.1.1 2024-2-2.1.1 2024-3-2.1.1 2024-4-2.1.1

Licence clause	Non-compliance	Audit grade	Recommendation # <sup>a</sup>
	<ul style="list-style-type: none"> <li>Element 12 (review and continual improvement): WaterNSW did not document how it tracks/ monitors improvement actions, or reference actions which are held different systems such as risk assurance and compliance system (RACS) and joint operational group minutes, in Modelpedia. The decision-making process for including/excluding actions from the drinking water quality improvement plan was not clearly documented.</li> </ul> <p>Our audit also found that WaterNSW continued to be non-compliant with the requirement to formalise processes and record keeping associated with changing CCP instrument locations and SCADA (Supervisory Control and Data Acquisition) alarm values including the return to documented values following incidents. We note that completion of actions relevant to Recommendation 2023-03 (from the 2023 audit) will resolve this deficiency.</p>		
<p><b>Clause 2.1.2</b> With respect to Non-Declared Catchment Areas from which Water NSW Supplies water, Water NSW must maintain Water Quality Management Systems that are consistent with:</p> <ol style="list-style-type: none"> <li>in the case of water with the final end use as Drinking Water: <ol style="list-style-type: none"> <li>a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW);</li> <li>the Australian Drinking Water Guidelines; or</li> <li>any other requirements as specified or approved by NSW Health or IPART,</li> </ol> </li> <li>in the case of water that does not have a final end use as Drinking Water and that is not to be managed according to a Water Quality Management System that satisfies clause 2.1.2(a): <ol style="list-style-type: none"> <li>the Australian Guidelines for Water Recycling; or</li> <li>any other requirements as specified or approved by NSW Health or IPART.</li> </ol> </li> </ol>	<p>We have assigned WaterNSW a <b>non-compliant (non-material)</b> grade for clause 2.1.2. This agrees with the auditor's findings. We consider that the non-compliances are non-material given WaterNSW has applied a multi-barrier approach, as required by the ADWG, in the development of its WQMS. Therefore, we consider there is a low residual risk of harm from the non-compliance due to the adequacy of its WQMS impacting WaterNSW's ability to supply safe and reliable water or meet its public health objectives.</p> <p>Our reasons for non-compliance against clause 2.1.1 (i.e. elements 1-3, 6, 7, 10 and 12) also apply to this obligation. We also identified the following deficiencies which contributed to a non-compliant (non-material) finding against this obligation:</p> <ul style="list-style-type: none"> <li>Element 9 (research and development): Modelpedia does not document how investigative programs for the Fish River Water Supply Scheme (FRWSS) are developed and implemented. Additionally, the WQMS does not include information regarding research and development carried out to maintain or improve the quality of drinking water, as required by the <i>Public Health Regulation 2022</i>.</li> <li>Element 11 (evaluation and audit): Modelpedia does not specify that the FRWSS review includes long term trend analysis.</li> </ul> <p>We note that the deficiencies identified against element 4, for clause 2.1.1, do not apply to the findings for clause 2.1.2.</p>	 <p>Non-compliant (non-material)</p>	<p>There are no specific new recommendations for this clause.</p> <p>The following recommendations also apply to this clause: 2024-1-2.1.1 2024-2-2.1.1 2024-3-2.1.1 2024-4-2.1.1</p>

Licence clause	Non-compliance	Audit grade	Recommendation # <sup>a</sup>
<b>Clause 2.1.3</b> Water NSW must ensure that the relevant Water Quality Management Systems are fully implemented and that all relevant activities are carried out in accordance with the relevant Water Quality Management System and to the satisfaction of NSW Health.	<p>We have assigned WaterNSW a <b>non-compliant (material)</b> grade for clause 2.1.3. This agrees with the auditor's findings. We consider that these non-compliances are material as:</p> <ul style="list-style-type: none"> <li>WaterNSW implements a multi-barrier approach to protecting water quality in line with its WQMS, which aligns with the ADWG. However, the recurring nature of some non-compliances, with limited evidence of corrective action to address those deficiencies, reduces the effectiveness of multiple barriers for protection and increases the risk of adverse impacts to public health and safety.</li> <li>The audit identified incorrect/inadequate reporting to the WaterNSW Board and regulators (NSW Health and IPART). We consider that inaccurate reporting can hinder effective and efficient governance by the Board, as it relies on accurate reporting from the organisation to allow it to set organisational priorities. Lack of oversight may hinder its ability to operate effectively, with increased potential for insufficient allocation of resourcing, strategic decision-making, investment, delegations, intervention and effective oversight.</li> </ul> <p>We identified the following deficiencies, against implementation of the WQMS, which resulted in a non-compliant (material) finding:</p> <ul style="list-style-type: none"> <li>Element 10 (documentation and reporting): Our audit identified material non-compliances with all subcomponents under this element, including: <ul style="list-style-type: none"> <li>a significant proportion of WQMS documents and records were overdue for review in the audit period</li> <li>records did not seem to be stored in a way that allowed them to be easily accessed</li> <li>multiple instances of incorrect reporting to both the WaterNSW Board and regulators (NSW Health and IPART) – this included inaccurate reporting of corrective actions as complete and performance targets as being met.</li> </ul> </li> <li>Element 11 (evaluation and audit): WaterNSW did not fully implement its internal audit requirements under its WQMS. For example, WaterNSW's WQMS audit program identified 8 health checks in the compliance period, with the possibility of 4 more if resourcing allowed. WaterNSW did not meet this target and our audit found that only one of the 4 completed health checks met WaterNSW's internal audit and assurance requirements. Additionally, several scheduled activities were delayed during the compliance period due to a WQMS resource being unavailable. We consider that WaterNSW's key water quality activities should not rely on a single resource to complete them.</li> <li>Element 12 (review and continual improvement): Our audit identified material non-compliances with all subcomponents related to this part of the WQMS, including:</li> </ul>	 Non-compliant (material)	2024-5-2.1.3 2024-6-2.1.3 2024-7-2.1.3 2024-8-2.1.3 2024-9-2.1.3




Licence clause	Non-compliance	Audit grade	Recommendation # <sup>a</sup>
	<ul style="list-style-type: none"> <li>- Instances of inadequate/inaccurate reporting to the WaterNSW Board. Examples include incorrect reporting about health checks undertaken, and reporting on the effectiveness of the WQMS (e.g. CCP performance, assurance activities and the progress of improvement actions).</li> <li>- Inconsistent assignment and tracking of drinking water quality improvement actions for effectiveness.</li> </ul> <p>The following deficiencies and shortcomings also contributed to the non-compliant (material) finding:</p> <ul style="list-style-type: none"> <li>• Element 1 (commitment to drinking water quality management): Shortcomings around accuracy of references to legislation and other formal requirements in supporting documents. Additionally, not all relevant regulatory and formal requirements were implemented (e.g. aspects of the <i>Public Health Regulation 2022</i>).</li> <li>• Element 2 (assessment of the drinking water supply system): WaterNSW did not implement all aspects of its catchment-to-customer (C2C) risk assessment process for the Illawarra and Nepean system risk assessments. The water quality improvement plan (WQIP) for the Illawarra and Nepean system were not appropriately updated following risk assessments as required by Modelpedia.</li> <li>• Element 3 (preventive measures for drinking water quality management): There were inconsistencies in implementation of WQMS requirements to identify, evaluate and document preventive C2C measures for significant hazards/events. Additionally, there was insufficient evidence to confirm WaterNSW fully implemented its CCP protocols.</li> <li>• Element 4 (operational procedures and process control): Evaluation of pipe repair materials used in the FRWSS is inconsistent with Modelpedia. Previous recommendation 2023-09 related to this non-compliance.</li> <li>• Element 5 (verification of drinking water quality): We observed instances where monthly water quality reports were not delivered in accordance with procedures documented in the WQMS. Issues included delays preparing the reports and insufficient detail provided compared to WaterNSW's documented procedures.</li> <li>• Element 6 (management of incidents and emergencies): WaterNSW did not hold hot debriefs following incidents as required by the WQMS.</li> </ul>		

Licence clause	Non-compliance	Audit grade	Recommendation # <sup>a</sup>
<b>Clause 2.6.1</b> Water NSW must maintain its Water Conservation Strategy.	<p>We have assigned WaterNSW a <b>non-compliant (non-material)</b> grade for clause 2.6.1. This agrees with the auditor's findings.</p> <p>While WaterNSW has a Water Conservation Strategy in place, we consider it was not sufficiently maintained – i.e. the strategy had not been reviewed in over 5 years. This does not align with WaterNSW's risk-based approach to document management which recommends a 3-year review frequency for 'low risk' documents. Our audit also identified that the strategy does not include performance objectives and measures.</p> <p>However, we consider that these non-compliances are non-material as WaterNSW demonstrated it had progressed the implementation of its water conservation program during the audit period. Additionally, during the audit interviews, WaterNSW staff demonstrated tacit knowledge in considering water conservation during their decision-making processes for water delivery planning and operations.</p>	 Non-compliant (non-material)	2024-10-2.6.1
<b>Clause 3.2.1</b> Water NSW must ensure that any water Supplied to Customers is Supplied in accordance with a relevant Water Quality Management System, any relevant Customer Supply Agreement, and any relevant arrangements with Sydney Water established under section 25 of the Act.	<p>We have assigned WaterNSW a <b>non-compliant (non-material)</b> grade for clause 3.2.1. This agrees with the auditor's findings.</p> <p>We found WaterNSW was compliant with its obligation to Supply water in accordance with the relevant arrangements for Oberon Council. However, we identified the following deficiencies with WaterNSW's Supply arrangements with Sydney Water:</p> <ul style="list-style-type: none"> <li>• WaterNSW did not provide annual investment and project schedules to Sydney Water in a timely manner</li> <li>• There were inconsistencies in water quality standards and notification requirements across WaterNSW's Raw Water Supply Agreement and the Water Quality Incident Response Protocol</li> <li>• WaterNSW did not consistently deliver monthly water quality reports within timeframes set out in its supply agreement with Sydney Water</li> <li>• WaterNSW did not commence a review of the Raw Water Supply Agreement by the date specified in the agreement (i.e. by 14 October 2023).</li> </ul> <p>We consider that these non-compliances are non-material as WaterNSW demonstrated that, although it did not strictly adhere to the Customer Supply Agreement with Sydney Water, it continued to implement controls to mitigate risk of adverse public health outcomes. For example, WaterNSW regularly engages with relevant Sydney Water staff (e.g. via fortnightly officer-level meetings to ensure that all parties are aware of upcoming planned outages). The audit found that the frequency of communication appropriately increases during events and incidents.</p>	 Non-compliant (non-material)	2024-13-3.2.1 2024-14-3.2.1

Licence clause	Non-compliance	Audit grade	Recommendation # <sup>a</sup>
<p><b>Clause 6.4.1</b> Water NSW must maintain an effective system to provide advance notification of any significant changes to flow release patterns from its Water Management Works to Customers and other stakeholders that have registered to be notified of such changes.</p> <p><b>Note: the audit scope for this obligation was limited to the Wingecarribee Reservoir only.</b></p>	<p><b>The audit scope for this obligation was limited to the Wingecarribee Reservoir only.</b></p> <p>We have assigned WaterNSW a <b>non-compliant (non-material)</b> grade against clause 6.4.1 for the Wingecarribee Reservoir only. This agrees with the auditor's findings.</p> <p>We found that WaterNSW did not apply its advance notification process for Wingecarribee Reservoir during the audit period as it did not provide registered customers and stakeholders with advance notifications in line with the relevant procedures. Specifically, 6 notifications were missed between May and June 2024.</p> <p>At the audit, WaterNSW advised that the notification thresholds set out in the Wingecarribee Reservoir procedure are incorrectly defined and need review. Following analysis of the relevant datasets, our auditor concluded that the flow rate, depth and velocity associated with these missed notifications posed a low risk to public safety and property. Therefore, while we acknowledge non-compliance against the obligation, we consider the risk of harm from the non-compliance, to public safety and downstream property, is minimal.</p>	 Non-compliant (non-material)	2024-15-6.4.1 2024-16-6.4.1
<p><b>Clause 6.10.2</b> Water NSW must:</p> <ol style="list-style-type: none"> <li>prepare information that explains the dispute resolution service provided by the Energy and Water Ombudsman of NSW, including any right to have a Complaint or dispute referred to the Energy and Water Ombudsman of NSW and how such a Complaint or dispute can be assessed;</li> <li>provide the information prepared under clause 6.10.2(a), free of charge to Customers at least once a year with their Bills; and</li> <li>make the information prepared under clause 6.10.2(a) available free of charge on its website.</li> </ol>	<p>We have assigned WaterNSW a <b>non-compliant (non-material)</b> grade for clause 6.10.2. This agrees with the auditor's findings.</p> <p>We identified one deficiency against sub-clause 6.10.2(b) which resulted in the non-compliant (non-material) grade. While WaterNSW prepared the information required by clause 6.10.2(a) and made it available free of charge on its website (as required by part (c) of this clause), the information provided to customers with their bills did not explain how complaints or disputes referred to the Energy and Water Ombudsman of NSW (EWON) can be assessed.</p> <p>We consider that this non-compliance is non-material as:</p> <ul style="list-style-type: none"> <li>WaterNSW's standard templates clearly explain that customers can contact EWON, including how to do so</li> <li>relevant information about customers' rights to contact EWON to make a complaint, including how to do so, is accessible on WaterNSW's website.</li> </ul> <p>Therefore, we consider there is a low risk that customers are not fully informed of the process to make a complaint or dispute referred to EWON and have it assessed.</p>	 Non-compliant (non-material)	<p>We make no recommendations for this non-compliance.</p> <p>Under the 2024-2028 Operating Licence which took effect on 1 July 2024, WaterNSW is no longer required to explain how a complaint or dispute referred to EWON can be assessed.</p>

a. The recommendation numbers do not reflect the numbers used in the auditor's report.  
b. Modelpedia is WaterNSW's online WQMS.


Table 1.2 Compliant (minor shortcomings) audit findings


Licence clause	Shortcoming	Audit grade	Recommendation # <sup>a</sup>
<b>Clause 2.6.2</b> Water NSW must maintain and implement its Water Conservation Work Program in relation to its operations under this Licence.	<p>We have assigned WaterNSW a <b>compliant (minor shortcomings)</b> grade for clause 2.6.2. This agrees with the auditor's findings.</p> <p>We identified the following deficiencies which resulted in the audit finding:</p> <ul style="list-style-type: none"> <li>WaterNSW has largely implemented its Water Conservation Work Program. However, we noted that water conservation activities which were due to be implemented in the compliance period had been delayed by 2 to 4 years. Our audit found that while WaterNSW has specific committees for specific initiatives under the program, there are no overarching governance arrangements for the overall program. This reduces oversight of progress against implementing activities, emerging risks, and decisions to reprioritise and reschedule activities.</li> <li>The Water Conservation Work Program does not include document control information e.g. including details of scheduled review periods.</li> </ul> <p>The shortcomings did not impact WaterNSW's ability to meet its water conservation objectives in the compliance period.</p>	 Compliant (minor shortcomings)	2024-11-2.6.2
<b>Clause 2.6.3</b> Water NSW must review, update and report on its Water Conservation Work Program referred to in clause 2.6.2.	<p>We have assigned WaterNSW a <b>compliant (minor shortcomings)</b> grade for clause 2.6.3. This agrees with the auditor's findings.</p> <p>WaterNSW has reviewed, updated and reported on its Water Conservation Work Program. However, we identified the following shortcomings which resulted in a compliant (minor shortcomings) grade:</p> <ul style="list-style-type: none"> <li>The 2023-24 Annual Water Conservation Program Report did not clearly articulate the options that WaterNSW identified and considered for conserving water within system operating arrangements, nor did it provide a comparison of those options. This is a requirement under the Reporting Manual.</li> <li>The report did not describe and explain changes to the original program (including changed activities or timeframes), as required by the Reporting Manual.</li> </ul> <p>These shortcomings did not impact WaterNSW's ability to achieve its water conservation objectives during the compliance period.</p>	 Compliant (minor shortcomings)	2024-12-2.6.3
<b>Clause 6.8.1</b> Water NSW must maintain and fully implement a code of practice that assists Customers experiencing financial hardship to better manage their current and future Bills (Code of Practice on Payment Difficulties) in accordance with this clause 6.8.	<p>We have assigned WaterNSW a <b>compliant (minor shortcomings)</b> grade for clause 6.8.1. This agrees with the auditor's findings.</p> <p>WaterNSW largely maintained and implanted its Debt Management Code of Practice during the compliance period. We identified a minor shortcoming related to the obligation as WaterNSW had not reviewed and approved its code of practice during the audit period. We also found an instance where the debt threshold for referral to Revenue NSW was inconsistent between 2 documents (\$50 in one document, but \$100 in another). WaterNSW confirmed the correct threshold is \$100 and that its systems are hardcoded to reflect that threshold.</p> <p>These shortcomings did not impact WaterNSW's ability to maintain and implement a code of practice to support customers experiencing financial hardship during the compliance period.</p>	 Compliant (minor shortcomings)	2024-17-6.8.1 2024-18-6.8.1



Licence clause	Shortcoming	Audit grade	Recommendation # <sup>a</sup>
<b>Clause 6.9.1</b> Water NSW must maintain a procedure for receiving, responding to and resolving Complaints, which is consistent with the Australian Standard <i>AS/NZS 10002:2014 Guidelines for complaints management in organizations</i> or other standard approved by IPART (Internal Complaints Handling Procedure).	<p>We have assigned WaterNSW a <b>compliant (minor shortcomings)</b> grade for clause 6.9.1. This agrees with the auditor's findings.</p> <p>WaterNSW has largely maintained its Feedback, Compliments and Complaints Policy that sets out its procedure for receiving, responding to and resolving complaints. However, we identified the following document management shortcomings across the policy and supporting documents:</p> <ul style="list-style-type: none"> <li>the policy was scheduled for review in June 2022 but was not completed until August 2024</li> <li>the Feedback, Compliments and Complaints Handling Procedure contained missing document control information and a broken hyperlink. The procedure was also overdue during the audit period and pending approval as of November 2024.</li> </ul> <p>These shortcomings did not impact WaterNSW's ability to maintain an internal complaints handling procedure during the compliance period.</p>	 Compliant (minor shortcomings)	2024-19-6.9.1 2024-20-6.9.1


a. The recommendation numbers do not reflect the numbers used in the auditor's report.

Table 1.3 Ongoing recommendations to rectify non-compliances or minor shortcomings identified at previous audits

Ongoing recommendation	Reason why recommendation is not complete	Identified non-compliance or minor shortcoming	Licence clause	Audit grade <sup>a</sup>
<p><b>2023-02:</b> By 30 June 2025, Water NSW should implement the project plan to rectify gaps in the WQMS (developed under recommendation 2023-01) to meet all aspects of the actions in the ADWG Framework. At a minimum, the update should:</p> <ul style="list-style-type: none"> <li>• Ensure that responsibilities for meeting water quality regulatory and formal obligations are understood and assigned in sufficient detail to ensure these obligations are understood and met</li> <li>• Confirm there are processes for ensuring staff are trained, competent and understand their delegations to implement the aspects of the WQMS relevant to their roles</li> <li>• Document Water NSW's approach to operational water quality risk assessments and how uncertainty is evaluated in water quality risk assessments</li> <li>• Formalise processes that consolidate improvement actions e.g. from C2C risk assessments, internal and tripartite incident debriefs, Health Checks, operational risk assessments and ensure accountability, timelines and reporting are documented</li> <li>• Review the Water Quality Data Review and Reporting Procedure (CD2012/130) to ensure it provides assurance that all the monitoring in the Water Monitoring Program Manual (CD2011/179) is undertaken and the context sections of the Water Quality Monitoring Program (CD2011/170) are current</li> <li>• Review the processes recorded under the short-term evaluation of results to confirm if they are relevant to this action or if they should be recorded as processes elsewhere in the WQMS.</li> </ul>	<p>This recommendation is ongoing until 30 June 2025.</p> <p>WaterNSW has developed a project plan to address the non-compliances leading to this recommendation. However, we note that the project plan schedule extends beyond 30 June 2025, to October 2025, which is beyond the anticipated due date for this recommendation.</p>	<p>At the 2023 audit, we identified several gaps related to WaterNSW's WQMS. In particular, WaterNSW had not fully addressed the ADWG requirements for the declared and non-declared catchments.</p> <p>With respect to the declared catchment, we identified deficiencies against Elements 1, 2, 3, 4, 10 and 12. We also found deficiencies against WaterNSW's WQMS, with respect to the non-declared catchments, for Elements 1, 3, 4, 7, 9, 10 and 12.</p>	<p>Clause 2.1.1 Maintain a WQMS in line with clause 2.1 of the licence</p> <p>&amp;</p> <p>Clause 2.1.2 Maintain a WQMS (Declared catchment areas) consistent with specified requirements</p>	 <p>Non-compliant (non-material)</p>

Ongoing recommendation	Reason why recommendation is not complete	Identified non-compliance or minor shortcoming	Licence clause	Audit grade <sup>a</sup>
<p><b>2023-03:</b> By 30 June 2024, Water NSW should formalise processes and record keeping associated with changing CCP instrument locations and SCADA (Supervisory Control and Data Acquisition) alarm values including the return to documented values following incidents.</p>	<p>WaterNSW has made progress against the recommendation with respect to updating the 'SCADA Standards - Change Management Standard' to require that requests for changes to a critical control point (CCP) alarm setpoint requires an additional approval from either the Water Quality Services Manager or the Manager Water Quality.</p> <p>However, the audit found the following outstanding gaps related to CCP alarm values. WaterNSW has not:</p> <ul style="list-style-type: none"> <li>documented its process requiring alarm values to be returned to documented limits following changes to the alarm (e.g. due to maintenance, incidents and events).</li> <li>documented its WQMS process that specifies the maximum allowable duration for a CCP alarm change.</li> <li>formalised processes and record keeping associated with changing CCP instrument locations.</li> </ul>	<p>Under Element 3 of the ADWG, WaterNSW must have a documented change management process to ensure that CCP alarms are reset to their original set points. It must also have a formal process to document a change in CCP instrument location.</p> <p>At the 2023 audit, we identified that WaterNSW did not have a formal process to document a change in CCP location. We also found there was no documented change process to ensure that CCP alarms are reset to their original set points to avoid nuisance alarms.</p>	<p>Clause 2.1.1 Maintain a WQMS in line with clause 2.1 of the licence</p>	 Non-compliant (non-material)
<p><b>2023-08:</b> By 30 June 2024, Water NSW should review and update its processes to ensure exceedances are appropriately recorded in RACS. This recommendation addresses the findings of lead exceedance in FRWSS, SCADA exceedance not recorded in RACS and consequence descriptors not matching CCP hazards.</p>	<p>WaterNSW has made progress, against the recommendation, by consolidating water quality exception records from different sources and instating weekly data check meetings.</p> <p>However, the audit found that new processes had not been included in the WQMS. We consider that WaterNSW has yet to formalise those newly implemented processes in its WQMS.</p>	<p>At the 2023 audit, we identified that WaterNSW did not fully implement its WQMS. In particular:</p> <ul style="list-style-type: none"> <li>Element 3 (Preventive measures for drinking water quality management): some incident consequence descriptors did not match CCP hazard assessments.</li> </ul>	<p>Clause 2.1.3 Maintain a WQMS (Non-Declared catchment areas) consistent with specified requirements</p>	 Non-compliant (non-material)

Ongoing recommendation	Reason why recommendation is not complete	Identified non-compliance or minor shortcoming	Licence clause	Audit grade <sup>a</sup>
		<ul style="list-style-type: none"> <li>Element 4 (Operational procedures and process control): it was not clear how preventative measures from risk assessments link to operational procedures. No evidence was found that a lead joint used for pipe repairs in FRWSS complied with AS4020, nor evidence that hemp and lead were assessed as suitable materials for these works. One lead exceedance was not recorded in RACS.</li> </ul>		
<b>2023-09:</b> By 30 June 2024, Water NSW should review industry practice and assess options for replacing lead seals for mains pipeline connections during repairs and maintenance. If an alternative process that meets AS4020:2018 cannot be implemented, Water NSW should update their WQMS with a process for allowing products that do not comply with AS4020:2018 to be assessed for water quality safety and document the repair procedure following this assessment processes.	<p>During the audit interviews, WaterNSW noted that it had conducted the required review by 31 December 2024 (i.e. before this report was finalised). However, evidence of the formal review was not provided.</p> <p>WaterNSW also advised that Modelpedia has yet to be updated to reflect the review.</p>	<p>Element 4 of the WQMS, in accordance with the ADWG, requires that only approved materials and chemicals are used.</p> <p>At the 2023 audit, we identified that WaterNSW had inadequately evaluated pipe repair materials used in the FRWSS. Specifically, it graded the use of a lead seal as compliant with the requirements of AS4020 when there was no evidence that the materials used following this repair methodology complied with the standard. At the time, WaterNSW had identified that they should continue to review options for replacing lead seals for mains pipeline connections during repairs and maintenance.</p>	Clause 2.1.3 Maintain a WQMS (Non-Declared catchment areas) consistent with specified requirements	 Non-compliant (non-material)
<b>2023-10:</b> By 31 December 2024, Water NSW should review and update the WQMS assurance reporting processes and associated delegations to ensure that board reporting is accurate and changes to metrics and targets are being undertaken by those with appropriate delegations.	<p>This recommendation is ongoing until 31 December 2024.</p> <p>WaterNSW advised that a deep dive on the Assurance Plan process has been included in the water quality improvement plan (WQIP) for 2024-25 to address this action. However, we note that significant work is still required to meet the due date.</p>	<p>At the 2023 audit, we identified the following deficiencies with WaterNSW's implementation of its WQMS:</p> <ul style="list-style-type: none"> <li>Element 11 (Evaluation and audit): misalignments found between summary reports to the Board (or associated subcommittees) and the activities undertaken.</li> </ul>	Clause 2.1.3 Maintain a WQMS (Non-Declared catchment areas) consistent with specified requirements	 Non-compliant (non-material)

Ongoing recommendation	Reason why recommendation is not complete	Identified non-compliance or minor shortcoming	Licence clause	Audit grade <sup>a</sup>
		<ul style="list-style-type: none"> <li>Element 12 (Review and continual improvement): Unable to clearly identify how actions are tracked and reported to the Board. There is evidence some actions had been progressed to closure but for FRWSS only one action tracked had been closed during the year with limited reporting as to why the other actions had not progressed.</li> </ul>		
<b>2023-15:</b> By 30 June 2024, Water NSW should agree with NRAR (and DPE) on a clearer definition of a 'serious field safety issue' and reasonable expectations on notification periods.	<p>WaterNSW reported that it has completed this recommendation.</p> <p>We consider that the definition agreed between WaterNSW and NRAR provides a clearer definition of a 'serious field safety issue'. However, the clarification agreed between WaterNSW and NRAR does not include 'reasonable expectations on notification periods'.</p>	<p>Under WaterNSW's MoU with NRAR, WaterNSW is required to notify NRAR of any serious field safety issues as soon as practicable.</p> <p>At the 2023 audit, we identified that WaterNSW took an extended length of time to notify NRAR about a safety issue in the Parramatta office. We considered this was a shortcoming and not a non-compliance as we understood the 'field safety issue' was an office-incident which would not escalate into a more serious incident in the future. We considered that clarifying what constitutes a "serious field safety issue" would avoid this confusion in future.</p>	Clause 6.16.1 Use best endeavours to maintain and comply with an MoU with NRAR	 <p>Compliant (minor shortcomings)</p>



















a. The 'audit grade' reflects the audit grade assigned at the 2023 operational audit.








## 2 WaterNSW's compliance over the licence term

The 2024 audit was the final audit of the 2022-2024 operating licence. WaterNSW demonstrated a moderate level of compliance over the term of its licence. This chapter summarises the obligations which WaterNSW has received less than full compliance against over the term of the licence.

We provide a year-on-year comparison of WaterNSW's audit findings that are either non-compliant or have minor shortcomings in Table 2.1. This comparison only includes obligations where we have found WaterNSW to be non-compliant or have minor shortcomings at least once during the licence term. It does not include gradings for obligations where WaterNSW demonstrated full compliance in all the audits over the licence term. The table highlights areas where rectification efforts have been needed to address the non-compliances or shortcomings.

Table 2.1 Comparative record of non-compliant findings for the 2022-2024 licence

Licence clause	Requirement	Compliance grade		
		2022 <sup>b</sup>	2023 <sup>c</sup>	2024
2.1.1	Maintain a Water Quality Management System (WQMS) (Declared catchment areas) consistent with specified requirements			
2.1.2	Maintain a WQMS (Non-Declared catchment areas) consistent with specified requirements			
2.1.3	Fully implement relevant WQMSs and carry out all relevant activities consistent with WQMSs			
2.5.2	Advise the Minister of any changes or potential exceedances to the System Yield	-		-
2.6.1	Maintain a Water Conservation Strategy	-	-	
2.6.2	Maintain and implement a Water Conservation Work Program	-	-	
2.6.3	Review, update and report on the Water Conservation Work Program	-	-	
2.8.8	Maintain and comply with a Greater Sydney Water Strategy (GSWS) Data Sharing Agreement with the Department of Planning and Environment <sup>a</sup>	-		-
3.2.1	Supply water in accordance with the relevant WQMS, relevant customer supply agreements and arrangements with Sydney Water established under s25 of the Act		-	
5.1.2	Fully implement and carry out activities in accordance with the Asset Management System (AMS)	-		

Licence clause	Requirement	Compliance grade		
		2022 <sup>b</sup>	2023 <sup>c</sup>	2024
5.2.2	Fully implement and carry out activities in accordance with the Environmental Management System (EMS)			-
6.16.1	Use best endeavours to maintain and comply with a Memorandum of Understanding (MoU) with the Natural Resources Access Regulator (NRAR)	-		-
6.4.1	Advance notification of changes to flow release patterns	-	-	
6.8.1	Maintain and fully implement a code of practice on payment difficulties	-	-	
6.9.1	Maintain an internal complaints handling procedure consistent with AS/NZS 10002:2014	-	-	
6.10.2	Prepare and provide information to customers that explains the dispute resolution service provided by the Energy & Water Ombudsman NSW	-	-	

a. The 2022 audit period was for 1 September 2021 to 31 August 2022.

**Audit grades:**  Compliant;  Compliant (minor shortcomings);  Non-Compliant (non-material);

 Non-Compliant (material)

**Sources:** (b) IPART, WaterNSW's compliance with its operating licence 2021-2022 – *Report to the Minister*, March 2023.






(c) IPART, WaterNSW's compliance with its operating licence 2022-2023 – *Report to the Minister*, March 2024.

# Appendices

---

# A Compliance grades

Table A.1 Current compliance grades

Compliance grade	Description
 Compliant	Sufficient evidence is available to confirm that the requirements have been met.
 Compliant (minor shortcomings)	Sufficient evidence is available to confirm that the requirements have been met apart from minor shortcomings which to date have not compromised the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 Non-compliant (non-material)	Sufficient evidence is not available to confirm that the requirements have been met and the deficiency does not adversely impact the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 Non-compliant (material)	Sufficient evidence is not available to confirm the requirements have been met and the deficiency does adversely impact the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.
 No Requirement	There is no requirement for the utility to meet this criterion within the audit period.

Source: IPART, Public Water Utility Audit Guideline, July 2023, p 28.

## B WaterNSW's Statement of Compliance

27 August 2024

Statement of compliance 2024

For 2023-24

Submitted by WaterNSW

To:

The Chief Executive Officer  
Independent Pricing and Regulatory Tribunal of NSW  
PO Box K35  
Haymarket Post Shop NSW 1240

WaterNSW reports as follows:


This statement documents compliance during 2023-2024 with all obligations to which WaterNSW is subject by virtue of its operating licence.

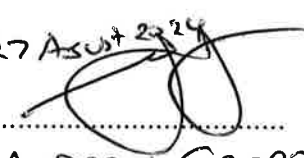
This report has been prepared by WaterNSW with all due care and skill, including to ensure that all information provided is true and correct, in full knowledge of conditions to which WaterNSW is subject under the *Water NSW Act 2014*.

Schedule A provides information on all obligations with which WaterNSW did not comply during 2023-2024.

Other than the information provided in Schedule A, WaterNSW has complied with all conditions to which it is subject.

This compliance report has been approved by the Chief Executive Officer (or equivalent) and the Chairman of the Board of Directors of WaterNSW/ Duly authorised Board Member of WaterNSW.

DATE: 27 August 2024  
Signed:   
Name: Peter Duncan  
Designation: Chair

DATE: 27 August 2024  
Signed:   
Name: ANDREW GEORGE  
Designation: CEO

## Schedule A: Non Compliances for WaterNSW as at 30 June 2024

List of clauses breached	Description of non compliance
<p>Clause 2.1.1</p> <p>Water NSW must maintain a Water Quality Management System that is consistent with either:</p> <ul style="list-style-type: none"> <li>a) the Australian Drinking Water Guidelines; or</li> <li>b) if NSW Health were to specify any amendment or addition to the Australian Drinking Water Guidelines that applies to Water NSW, the Australian Drinking Water Guidelines as amended or added to by NSW Health; or</li> <li>c) any other requirements specified or approved by NSW Health or IPART.</li> </ul>	<p><b>PERIOD OF NON-COMPLIANCE July 2023 – ongoing</b></p> <p><b>Reason for non-compliance:</b></p> <p>The 2022-2023 Operating Licence Audit identified that WaterNSW was non-compliant (non-material) for clause 2.1.1 for not fully addressing the Australian Drinking Water Guidelines (ADWG) requirements for the declared catchment. Four recommendations were made for WaterNSW to action.</p> <p><b>The following activities are underway:</b></p> <ul style="list-style-type: none"> <li>• Gap analysis and development of a project plan – in progress with expected completion September 2024.</li> <li>• Project plan implementation is on track for completion by June 2025.</li> <li>• Critical Control Point processes are under review with expected completion September 2024.</li> <li>• Finalisation of the Operations and Maintenance Manual for the Upper Canal which is expected to be completed by September 2024.</li> </ul> <p><b>Date of full compliance:</b></p> <p>Ongoing non-compliance until all actions are complete, expected to be June 2025.</p>

List of clauses breached	Description of non compliance
<p>Clause 2.1.2</p> <p>For Non-Declared Catchment Areas from which Water NSW supplies water, Water NSW must maintain Water Quality Management Systems that are consistent with:</p> <p>a) in the case of water with the final end use as Drinking Water:</p> <ul style="list-style-type: none"> <li>i. a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW);</li> <li>ii. the Australian Drinking Water Guidelines; or</li> <li>iii. any other requirements as specified or approved by NSW Health or IPART,</li> </ul> <p>b) in the case of water that does not have a final end use as Drinking Water and that is not to be managed according to a Water Quality Management System that satisfies clause 2.1.2(a):</p> <ul style="list-style-type: none"> <li>i. the Australian Guidelines for Water Recycling; or</li> <li>ii. any other requirements as specified or approved by NSW Health or IPART.</li> </ul>	<p><b>PERIOD OF NON-COMPLIANCE July 2023 – ongoing</b></p> <p><b>Reason for non-compliance:</b></p> <p>The 2022-2023 Operating Licence Audit identified that WaterNSW was non-compliant (non-material) for not fully addressing the ADWG requirements for the non-declared catchment. One recommendation was made for WaterNSW to action.</p> <p><b>The following activities are underway:</b></p> <ul style="list-style-type: none"> <li>• WaterNSW will review the adequacy of the Fish River Water Supply Scheme for long term evaluation of results and update where required.</li> </ul> <p><b>Date of full compliance:</b> Ongoing non-compliance until action is complete which is expected to be 31 December 2024.</p>
<p>Clause 2.1.3</p> <p>Water NSW must ensure that the relevant Water Quality Management Systems are fully implemented and that all relevant activities are carried out in accordance with the relevant Water Quality Management System and to the satisfaction of NSW Health.</p>	<p><b>PERIOD OF NON-COMPLIANCE July 2023 – ongoing</b></p> <p><b>Reason for non-compliance:</b></p> <p>The 2022-2023 Operating Licence Audit identified that WaterNSW was non-compliant (non-material) for not fully implementing its Water Quality Management System (WQMS). Five recommendations were made for WaterNSW to action.</p> <p><b>The following activities are underway or complete:</b></p>

List of clauses breached	Description of non compliance
	<ul style="list-style-type: none"> <li>• Catchment to Customer Risk Assessment was completed on 30 June 2024.</li> <li>• The Water Quality Incident Response Protocol is under review and expected to be finalised by September 2024.</li> <li>• Investigations into lead seal alternatives are complete, however documentation is yet to be finalised. This is expected to be completed by September 2024.</li> <li>• A review of the WQMS assurance reporting process is underway and expected to be completed by the due date – 31 December 2024.</li> </ul> <p><b>Date of full compliance:</b> Ongoing non-compliance until all actions are complete which is expected to be 31 December 2024.</p>
<p>Clause 2.5.2</p> <p>Water NSW must advise the Minister:</p> <p>a. of any changes to the System Yield relative to the previous System Yield (including reasons for change) following a re-calculation under clause 2.5.1; or</p> <p>b. if Water NSW considers that future demand for Bulk Water may exceed the System Yield and when this exceedance might occur.</p>	<p><b>PERIOD OF NON-COMPLIANCE July 2023 – 30 June 2024</b></p> <p><b>Reason for non-compliance:</b></p> <p>The 2022-2023 Operating Licence Audit identified that WaterNSW was non-compliant (non-material) for incorrectly interpreting the requirement to notify the Minister of future bulk water demand exceeding system yield.</p> <p><b>Date of full compliance:</b> From 1 July 2024, this is no longer required in the 2024-2028 Operating Licence.</p>

List of clauses breached	Description of non compliance
<p>Clause 2.8.8</p> <p>Water NSW must:</p> <p>c) use its best endeavours to maintain a data sharing agreement with DPE to assist in the development and review of the Greater Sydney Water Strategy (GSWS Data Sharing Agreement); and</p> <p>d) comply with the GSWS Data Sharing Agreement referred to in clause 2.8.8(a).</p>	<p><b>PERIOD OF NON-COMPLIANCE July 2023 – ongoing</b></p> <p><b>Reason for non-compliance:</b></p> <p>The Greater Sydney Water Strategy (GSWS) was published on 29 August 2022. WaterNSW ceased data sharing in accordance with the GSWS data sharing agreement (DSA) once the GSWS was published. It was WaterNSW's understanding that the data was no longer required in real-time.</p> <p>The 2022-2023 Operating Licence Audit identified that WaterNSW was non-compliant (non-material) for failing to continue to share information with the Department.</p> <p><b>The following activities are underway or complete:</b></p> <ul style="list-style-type: none"> <li>• Completed review and mapping of data sharing scope between MoU GSWS and DSA with the Department</li> <li>• Data Element Mapping reviewed with the Department's Digital / Data Team</li> <li>• Final endorsement from GSWS working group on information sharing requirements – due August 2024.</li> </ul> <p><b>Date of full compliance:</b> Ongoing non-compliance until all actions are complete by 31 December 2024.</p>

List of clauses breached	Description of non compliance
<p>Clause 6.16.1</p> <p>Water NSW must:</p> <p>a. use its best endeavours to maintain a memorandum of understanding with the NRAR; and</p> <p>b. comply with the memorandum of understanding maintained under clause 6.16.1(a).</p>	<p><b>PERIOD OF NON-COMPLIANCE July 2023 – 30 June 2024</b></p> <p><b>Reason for non-compliance:</b> The MoU requires the Strategic Group (CEOs) to meet twice per year. Discussions between WaterNSW and NRAR at various levels including the Board (joint meetings), the respective CEOs, Executive Managers, Senior Managers and staff have occurred, however not under the formal framework of the MoU.</p> <p><b>The following activities are underway:</b></p> <p>WaterNSW will establish a schedule for future Strategic Group meetings to ensure Terms of Reference requirements are met and as part of the transformation of the MoU into a Cooperation Protocol, consider what meeting frequency is required and what might be more appropriate considerations for whether a formal meeting of CEOs is required.</p> <p><b>Date of full compliance:</b> Become compliant by end of 2024</p>

## C Audit process

We apply our Compliance and Enforcement Policy in developing the annual audit scopes. The policy explains our risk-based regulatory model. Under the policy, we can:

- focus on allocating resources to areas of higher risk
- increase our efficiency in undertaking audits
- tailor our enforcement response.<sup>2</sup>

Our risk-based approach centres around evaluating the risk that each part of our regulatory function aims to reduce. We evaluate risks by considering the likelihood of harm occurring in the absence of our regulatory controls and the potential consequence of that harm. We then consider how likely it is that a regulated entity will not properly implement a regulatory control.

We identify and document historical, current and emerging risks. This allows us to allocate resources proportionately to the risk and complexity of a regulated entity and its behaviours.

The audit process involves receiving and reviewing reports, undertaking and attending audit interviews with WaterNSW staff and undertaking field verification to investigate if the requirements of the licence are met in practice.

### C.1 2024 audit scope

We do not audit all licence clauses annually. Instead, we adopt a risk-based approach to scoping the audits, which means we audit 'high risk' clauses more frequently and 'low risk' clauses less frequently. We conduct audits in accordance with our Public Water Utility Audit Guideline.<sup>3</sup>

The audit scope for WaterNSW's 2024 audit included obligations on:

- Licence context and authorisations (Part 1) – requirements on end of term review.
- Water Source protection and conservation (Part 2) – requirements on water quality management systems, water conservation and research on catchments.
- Bulk water storage and transmission (Part 3) – requirements on water supply.
- Organisational management systems (Part 5) – requirements on asset management.
- Customer and stakeholder relations (Part 6) – requirements on advance notification of changes to flow release patterns, maintaining adequate customer advisory groups, code of practice on payment difficulties, internal complaints handling procedures, external dispute resolution schemes, educative role and online portal for lodgement of documents relating to metering equipment.

We did not audit clauses from Part 4 (Performance Standards) and Part 7 (Performance monitoring and reporting) this year.

The audit scope is included in Appendix A to the auditor's report (refer D).

We consulted with NSW Health, NSW Environment Protection Authority (EPA), Natural Resources Access Regulator (NRAR), Sydney Water, Oberon Council, Energy Australia and NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) to determine the scope of the audit. We received submissions from all stakeholders except EnergyAustralia.<sup>a</sup>

- DCCEEW suggested that the audit review WaterNSW's procedures to ensure alignment with relevant NSW environmental impact and native vegetation management legislation.
- NSW Health suggested that the audit:
  - review WaterNSW's progress against its WQMS gap analysis
  - review the supply agreement for customers connected to the raw water pipeline.
- EPA noted its current MoU arrangements with WaterNSW are working well.
- NRAR suggested that the audit consider the challenges for WaterNSW to provide accurate data and supporting systems or architecture.
- Sydney Water noted its existing Raw Water Supply Agreement with WaterNSW is over a decade old and has not been reviewed or updated. It also raised the following opportunities for improvement:
  - timely information sharing and input to facilitate capital works
  - transparency regarding asset condition and maintenance schedules on critical assets and flood-affected assets
  - decision-making and prioritisation of supply configuration changes during modes of dam operation, particularly flood operations.
- Oberon Council noted that:
  - it has concerns over limits on water quality parameters around raw water and the protection of water sources, specifically Oberon Dam
  - the volume at which WaterNSW supplies water to its system is having detrimental effects on the membranes at its water treatment facility.

On 30 October 2024, we amended the audit scope to include clause 6.4.1 (advance notification of changes to flow release patterns) in response to stakeholder feedback. We directed the auditor to limit the audit scope to Wingecarribee Reservoir. We will undertake an audit of the equivalent obligation<sup>b</sup> under the 2024-2028 Operating Licence at a future audit.

<sup>a</sup> On 29 July 2024, EnergyAustralia confirmed it did not wish to make a submission on WaterNSW's performance against its Licence.

<sup>b</sup> Clause 19 of the 2024-2028 Operating Licence requires WaterNSW to maintain an early warning system. The early warning system replaces the advance notification obligation under the Licence.

## C.2 2024 audit plan

We engaged Stantec, in association with Atom Consulting, to undertake the audit.

We held a project start-up meeting with the auditor on 29 July 2024 to agree on the project milestones, audit timing, and outline our expectations. We participated in the audit inception meeting with WaterNSW and the auditor on the first day of the audit interviews, on 4 November 2024. At this meeting, we agreed on expectations and protocols for the conduct of the audit. All parties adhered to the agreed protocols throughout the audit.

We required the auditor to undertake the following tasks:

1. Review stakeholder submissions.
2. Prepare an information request (questionnaire) setting out all the requirements for information and evidence, at least four weeks prior to the commencement of audit interviews (for this audit, the auditor issued the questionnaire before the audit interviews commence).
3. Review reports and documents provided by WaterNSW in response to the questionnaire.
4. Conduct interviews with WaterNSW staff as appropriate.
5. Conduct field verification to assess the implementation of WaterNSW's systems and procedures.
6. Assess the level of compliance (in line with our compliance grades) WaterNSW achieved for each of the identified Licence obligations, and provide supporting evidence for this assessment.
7. Assess and report on progress by WaterNSW in addressing any comments made by the relevant Minister and/or our recommendations from previous audits, providing supporting evidence for these assessments.
8. Provide summary of audit findings and a draft audit report to us and address comments from WaterNSW and us regarding draft audit findings.
9. Provide a revised draft audit report considering comments from IPART, and comments/additional evidence provided by WaterNSW, in response to the draft audit report.
10. Prepare and submit a final report outlining audit findings (the report is in Appendix D).

The auditor adopted a methodology consistent with IPART's Public Water Utility Audit Guideline (July 2023). This guideline defines IPART's requirements for an audit to ensure that it is conducted in accordance with an established and recognised audit protocol. The auditor can make recommendations or suggest opportunities for improvement under the guideline.

Where appropriate, the auditor also regarded the following relevant codes and standards:

- ASAE 3100 (2017) Compliance Engagements
- ISO 19011:2018 Guidelines for auditing management systems
- AS/NZS ISO 9001:2016 Quality management systems – Requirements
- ISO 17021:2015 Conformity assessment – Requirements for bodies providing audit and certification of management systems

- ISO 31000:2018 Risk management.

Where we support an auditor's recommendation, we make a recommendation based on the auditor's recommendation. Our recommendations are summarised in the Executive Summary of this report.

Where the auditor suggests opportunities for improvement, WaterNSW can decide whether to implement these suggestions. This approach aims to balance improved performance with the investment required to achieve it (i.e. we want WaterNSW to first consider the pricing implications and value for money of continued improvement). Therefore, while we encourage WaterNSW to consider the auditor's suggestions, we do not follow these up. The auditor's suggested opportunities for improvement are included in the auditor's report in Appendix D.

The auditor conducted audit interviews from 4 November 2024 to 8 November 2024 and collected additional evidence from WaterNSW with respect to WQMS and advance notification clauses at meetings held with WaterNSW and IPART on 24 February 2025 and 28 February 2025. On 6 November 2024 the auditor also undertook a site visit to the following locations:

- Cascade Dams
- Medlow Dam
- Oberon Dam and pump station.

The auditor assessed WaterNSW's compliance with the relevant requirements of the Licence per the compliance grades outlined in A.

## D Auditor's report

# Operational audit of WaterNSW

## Audit report

PREPARED FOR Independent Pricing and Regulatory Tribunal | April 2025

---

We design with community in mind

# Revision schedule

Rev no.	Date	Description	Prepared by	Reviewed by	Approved by
A	7/02/2025	Draft for IPART and WaterNSW review	Ella Hingston (Stantec) Geoffrey Kleu (Stantec) Patrick Schnelle (Atom Consulting) Philip de Souza (Atom Consulting)		Ella Hingston (Stantec)
B	21/03/2025	Revised draft	Ella Hingston (Stantec) Geoffrey Kleu (Stantec) Patrick Schnelle (Atom Consulting) Philip de Souza (Atom Consulting)		Ella Hingston (Stantec)
C	27/03/2025	Final	Ella Hingston (Stantec) Geoffrey Kleu (Stantec) Patrick Schnelle (Atom Consulting) Philip de Souza (Atom Consulting)	Ella Hingston (Stantec)	Ella Hingston (Stantec)
D	31/03/2025	Minor updates	Ella Hingston (Stantec) Geoffrey Kleu (Stantec) Patrick Schnelle (Atom Consulting) Philip de Souza (Atom Consulting)	Ella Hingston (Stantec)	Ella Hingston (Stantec)
E	2/04/2025	Correction of formatting errors	Ella Hingston (Stantec) Geoffrey Kleu (Stantec) Patrick Schnelle (Atom Consulting) Philip de Souza (Atom Consulting)	Ella Hingston (Stantec)	Ella Hingston (Stantec)

# Executive summary

## Auditor's declaration

This report presents the findings of the audit of the operations of WaterNSW against the WaterNSW Operating Licence 2022-2024 for the period from 1 July 2023 to 30 June 2024, consistent with the audit requirements set out in the Public Water Utility Audit Guideline (July 2023) published by the Independent Pricing and Regulatory Tribunal (IPART).


The auditors confirm that:

- We have seen sufficient evidence on which to base our conclusions
- Our audit findings accurately reflect the professional opinions of the auditors
- We have conducted the audit, determined our audit findings and prepared the report consistent with the audit requirements set out in IPART's Public Water Utility Audit Guideline (July 2023) and Request for Quote
- Our audit findings have not been unduly influenced by the utility and/or any of its associates.



## Major findings



A summary of our major audit findings for the 2023/24 audit period is shown below. The full licence clauses and additional context for these findings are provided in Section 3.


### Summary of audit findings against audited licence obligations





Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
2 Water source protection and conservation	2.1 Water quality management system	Clause 2.1.1	Non-compliant (non-material) 	<p>This clause requires WaterNSW to maintain a Drinking Water Quality Management System with respect to Declared Catchment Areas.</p> <p>WaterNSW uses Modelpedia to document its Water Quality Management System (WQMS). WaterNSW has documented activities for each action within the Australian Drinking Water Guidelines (ADWG). However, in our sampling during this audit, we found the WQMS has non-material inconsistencies and does not fully address the requirements of the ADWG for the Declared catchment. Examples of the aspects of non-compliance include the Catchment-to-Customer (C2C) risk assessment procedure, critical control point (CCP) documentation, CCP change management, operational procedures, records and documentation and improvement actions.</p>














Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				<p>We have graded this clause non-compliant (non-material), as we consider there to be a low residual risk of the non-compliance causing WaterNSW to fail to meet the public health objectives under the licence, given the multiple barrier approach that WaterNSW uses as required under the ADWG.</p> <p>Non-compliances were previously identified in the 2022-23 Operational Licence Audit, and several of the recommendations to address the non-compliances remain open and overdue. In the statement of compliance 2024 letter to IPART (dated 27 August 2024), WaterNSW declared ongoing non-compliance for this clause until all recommendations from the 2022-2023 Operating Licence Audit are complete.</p>
		Clause 2.1.2	Non-compliant (non-material) 	<p>This clause requires WaterNSW to maintain a Drinking or Recycled Water Quality Management System with respect to Non-Declared Catchment Areas.</p> <p>WaterNSW uses Modelpedia to document its WQMS. WaterNSW has documented activities for each action within the Australian Drinking Water Guidelines (ADWG). However, in our sampling during this audit, we found the WQMS has non-material inconsistencies and does not fully address the requirements of the ADWG for the Non-Declared Catchment. Examples of the aspects of non-compliance include the C2C risk assessment process, CCP change management, investigative programs, research and development, records and documentation, long term evaluation of results, and improvement actions.</p> <p>We have graded this clause non-compliant (non-material), as we consider there to be a low residual risk of the non-compliance causing WaterNSW to fail to meet the public health objectives under the licence, given the multiple barrier approach that WaterNSW uses as required under the ADWG.</p> <p>Non-compliances were previously identified in the 2022-23 Operational Licence Audit, and several of the recommendations to address the non-compliances remain open and overdue. In the statement of compliance 2024 letter to IPART (dated 27 August 2024), WaterNSW declared ongoing non-compliance for this clause until all recommendations from the 2022-2023 Operating Licence Audit are complete.</p>
		Clause 2.1.3	Non-compliant (material) 	<p>This clause requires WaterNSW to fully implement the relevant Water Quality Management Systems.</p> <p>Several of the non-compliances identified in the 2022-23 Operational Licence Audit are recurring in 2023-24. We consider that the recurring nature of the non-compliance with limited evidence of corrective action contributes to the high risk graded for the clause, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.</p> <p>Of concern, we have identified multiple examples where reporting of key information to the Board and Regulators was inaccurate or inadequate.</p> <p>We consider that the risk profile is also elevated as we have identified several instances in reporting to both the Board and Regulators, where corrective actions were reported as</p>






Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				<p>being completed, however we found that several of the actions were not undertaken as reported.</p> <p>If the Board and Regulators do not have accurate and comprehensive information reported to them in a timely manner, they cannot operate effectively, and there is the potential for insufficient resourcing, strategic decision-making, investment, delegations, intervention and effective oversight. This leads to a high risk of WaterNSW not meeting the public health and water quality objectives of the licence for Fish River Water Supply Scheme, and similar risks being transferred to water utilities supplied with bulk water from WaterNSW.</p>
	2.6 Water conservation	Clause 2.6.1	Non-compliant (non-material) 	<p>This clause requires WaterNSW to maintain its Water Conservation Strategy.</p> <p>WaterNSW has in place a Water Conservation Strategy. The document footer contains a date of 'October 2018' suggesting that, in the absence of other document control information, the document has not been updated since October 2018 (i.e., as at the end of the audit period, it had not been updated in more than five years). We consider that this is a deficiency against clause 2.6.1 of WaterNSW's operating licence, which requires WaterNSW to maintain its Water Conservation Strategy.</p> <p>We consider that the maintenance of a strategy comprises the following activities:</p> <ul style="list-style-type: none"> <li>• Periodic review and, if required, update of the strategy to reflect and respond to changes in internal and external environments</li> <li>• Regular reporting of performance against the strategy. While WaterNSW has prepared and submitted to IPART an Annual Water Conservation Program Report for 2023 – 2024 (i.e., the audit period), the Water Conservation Strategy does not set out objectives and measures against which performance can be reported.</li> </ul> <p>We consider that this is a deficiency and not a shortcoming as it is a breach of WaterNSW's operating licence requirement to maintain its Water Conservation Strategy, leading to a risk that WaterNSW's operations are not optimal in respect of water conservation.</p> <p>However, we consider that the risk posed by this deficiency is minimal and, therefore, that the deficiency is non-material. Our assessment of the level of risk is made on the basis of:</p> <ul style="list-style-type: none"> <li>• WaterNSW demonstrating that it had progressed the implementation of its water conservation program (i.e., the immediate output of the strategy) in the audit period</li> <li>• The tacit knowledge demonstrated by WaterNSW staff, during the audit interview, in considering water conservation in their decision-making processes for water delivery planning and operations.</li> </ul>
		Clause 2.6.2	Compliant (minor shortcomings) 	<p>This clause requires WaterNSW to maintain and implement its Water Conservation Work Program.</p> <p>WaterNSW has in place a Water Conservation Work Program that was developed in February 2020. However, we note the following shortcomings in relation to the maintenance and implementation of the work program:</p>

Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				<ul style="list-style-type: none"> <li>In comparing the Water Conservation Work Program with the implementation progress reported in WaterNSW's Annual Water Conservation Program Report 2023 – 2024, we observed that the implementation of water conservation activities in 2023/24 (i.e., the audit period) had been delayed by around two to four years</li> <li>The Water Conservation Work Program does not contain document control information. Document control information, including the documentation of scheduled review periods, is one mechanism for recording evidence of document maintenance, planned and undertaken.</li> </ul> <p>We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained and implemented its Water Conservation Work Program (i.e., that it has not breached its operating licence requirement) by:</p> <ul style="list-style-type: none"> <li>Reviewing and updating the completion timeframes, via the Annual Water Conservation Program Report, for the water conservation activities listed in its Water Conservation Work Program</li> <li>Demonstrating that it had progressed the implementation of its water conservation program in the audit period, as reported in the Annual Water Conservation Program Report 2023 – 2024.</li> </ul>
		Clause 2.6.3	Compliant (minor shortcomings) 	<p>This clause requires WaterNSW to review, update and report on its Water Conservation Work Program.</p> <p>WaterNSW has reviewed and updated its Water Conservation Work Program via preparing and submitting an Annual Water Conservation Program Report to IPART for the audit period. However, we note the following shortcomings in relation to reporting on the Water Conservation Work Program:</p> <ul style="list-style-type: none"> <li>The Water Conservation Strategy and Water Conservation Work Program outline broad guiding principles for identifying, evaluating and selecting options for water conservation activities. However, the Annual Water Conservation Program Report 2023 – 2024 does not clearly articulate the 'long list' of options identified for conserving water within system operating arrangements and the comparison of those options, as required by WaterNSW's reporting manual.</li> <li>The Annual Water Conservation Program Report 2023 – 2024 does not clearly describe the water conservation activities added to the work program after its original inception. The report also does not clearly articulate the changes made to the completion timeframes for the activities included in the original work program. That is, the report does not 'describe and explain any proposed changes to the water conservation activities', as required by WaterNSW's reporting manual.</li> </ul> <p>We consider that these are shortcomings and not deficiencies as WaterNSW demonstrated continual improvement of its Water Conservation Work Program through considering and implementing new initiatives. Examples of such initiatives include, but are not limited to, developing and rolling out learning and development content, and engaging</p>


Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				with major customers to influence demand management and customer-side asset solutions.
	2.7 Research on catchments	Clause 2.7.1	Compliant 	N/A – this clause is graded as compliant.
3 Bulk water storage and transmission	3.2 Water supply	Clause 3.2.1	Non-compliant (non-material) 	<p>This clause requires WaterNSW to ensure that any water Supplied to Customers is Supplied in accordance with a relevant WQMS, any relevant Customer Supply Agreement, and any relevant arrangements with Sydney Water established under section 25 of the Act.</p> <p>We focused our sampling for this clause on supply of water to Sydney Water and Oberon Council. A non-compliance (non-material) has been identified with several inconsistencies in the supply of water to Sydney Water in accordance with the Customer Supply Agreement, including the provision of annual investment and project schedules, water quality standards and notification requirements, water quality reporting, and review of the agreement.</p> <p>We are satisfied that WaterNSW has supplied water in accordance with the relevant arrangements for Oberon Council.</p> <p>We consider the non-compliance is non-material as the residual risk of adverse public health outcomes is low considering the controls WaterNSW has implemented during the audit to mitigate the risk.</p>
5 Organisation management systems	5.1 Asset management system	Clause 5.1.2	Compliant 	N/A – this clause is graded as compliant.
6 Customer and stakeholder relations	<p>6.4 Advance notification of changes to flow release patterns</p> <p>The audit scope was limited to a review of advance notification for Wingecarribee Reservoir only.</p>	Clause 6.4.1	Non-compliant (non-material) 	<p>IPART directed that the audit scope of this clause was to be limited to a review of advance notification for Wingecarribee Reservoir only. The audit grade should not be interpreted as providing an indication of the level of compliance at other Water Management Works during the audit period, nor the level of risk if the system to provide advance notification of any significant changes to flow release patterns from other Water Management Works was ineffective.</p> <p>This clause requires WaterNSW to maintain an effective system to provide advance notification of any significant changes to flow release patterns from its Water Management Works to Customers and other stakeholders that have registered to be notified of such changes. WaterNSW uses the Emergency Notification Warning System (EWN) to notify customers and stakeholders of changes to flow release patterns.</p> <p>WaterNSW have defined a high-regulated release for Wingecarribee Reservoir as when their operations impact landholders downstream. We consider not providing advance</p>




Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				<p>notification of significant changes to flow release patterns a risk as the potential impacts to downstream landholders may include impacts to public safety and property.</p> <p>Inconsistencies for this clause include that WaterNSW did not provide registered Customers and stakeholders with any of the advanced notifications for Wingecarribee Reservoir that should have been provided in the audit period.</p> <p>We also consider that WaterNSW has not maintained an effective system for Wingecarribee Reservoir, as WaterNSW advised that the notification thresholds are not aligned with risk thresholds and need to be reviewed.</p> <p>We consider that WaterNSW has provided evidence to demonstrate, that for Wingecarribee Reservoir specifically, the flow rate, depth and velocity associated with these missed notifications, resulted in a low residual risk to public safety and property.</p>
	6.5 Customer advisory groups	Clause 6.5.1	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.5.2	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.5.3	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.5.4	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.5.5	Compliant 	N/A – this clause is graded as compliant.
	6.6 Customer advisory group charter	Clause 6.6.2	Compliant 	N/A – this clause is graded as compliant.
	6.8 Code of practice on payment difficulties	Clause 6.8.1	Compliant (minor shortcomings) 	<p>This clause requires WaterNSW to maintain and fully implement a code of practice that assists Customers experiencing financial hardship to better manage their current and future Bills (Code of Practice on Payment Difficulties) in accordance with this clause 6.8.</p> <p>WaterNSW has in place a Debt Management Code of Practice that assists customers experiencing financial hardship to better manage their current and future bills. It is</p>



Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				<p>operationalised through several internal controlled procedures and documented processes. However, we note several document management shortcomings across these procedures.</p> <p>We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained and fully implemented its Debt Management Code of Practice (i.e., that it has not breached its operating licence requirement), as evidenced by:</p> <ul style="list-style-type: none"> <li>• WaterNSW reviewing and approving the Debt Management Code of Practice during the audit period</li> <li>• A live demonstration of Dynamics 365 during the audit interview to trail a sample of customers on payment plans and confirm the implementation of the code of practice.</li> </ul>
		Clause 6.8.2	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.8.4	Compliant 	N/A – this clause is graded as compliant.
	6.9 Internal complaints handling procedure	Clause 6.9.1	Compliant (minor shortcomings) 	<p>This clause requires WaterNSW to maintain a procedure for receiving, responding to and resolving Complaints, which is consistent with the Australian Standard AS/NZS 10002:2014 Guidelines for complaints management in organisations.</p> <p>WaterNSW has in place a Feedback, Compliments and Complaints Policy that sets out its commitment to fair, efficient and effective complaint handling; establishes relevant terms and definitions; and describes its system and guiding principles for receiving, responding to and resolving complaints in a manner consistent with AS/NZS 10002:2014 Guidelines for complaints management in organisations. The implementation of the policy is supported by a Feedback Compliments and Complaints Handling Procedure, which describes WaterNSW's requirements and processes for complaints handling and establishes key performance indicators. However, we note several document management shortcomings across the policy and procedure.</p> <p>We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained its Feedback Compliments and Complaints Handling Procedure by progressing the review of the procedure during the audit period.</p>
		Clause 6.9.2	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.9.3	Compliant	N/A – this clause is graded as compliant.





Section	Clause	Sub-clause	Audit grade	Summary of audit findings where less than fully compliant
				
	6.10 External dispute resolution scheme	Clause 6.10.1	Compliant 	N/A – this clause is graded as compliant.
		Clause 6.10.2	Non-compliant (non-material) 	<p>This clause requires WaterNSW to (a) prepare information that explains the dispute resolution service provided by the Energy and Water Ombudsman of NSW, including any right to have a Complaint or dispute referred to the Energy and Water Ombudsman of NSW and how such a Complaint or dispute can be assessed; (b) provide the information prepared under clause 6.10.2(a), free of charge to Customers at least once a year with their Bills; and (c) make the information prepared under clause 6.10.2(a) available free of charge on its website.</p> <p>WaterNSW has prepared information that explains the dispute resolution service provided by the Energy and Water Ombudsman of New South Wales (NSW), including any right to have a complaint or dispute referred to EWON and how such a complaint or dispute can be assessed. This information is available on its website.</p> <p>However, while the invoices issued by WaterNSW implicitly explain that the customer has 'any right to have a Complaint or dispute referred to the Energy and Water Ombudsman of NSW', they do not explain 'how such a Complaint or dispute can be assessed', as required by part (b) of this clause. Therefore, we consider that a deficiency exists against part (b) of this clause.</p> <p>We consider that this is a deficiency and not a shortcoming as it is a breach of WaterNSW's operating licence requirement, leading to a risk that customers are not fully informed of the process to have a complaint or dispute referred to EWON and assessed.</p> <p>However, we consider that the risk posed by this deficiency is minimal and, therefore, that the deficiency is non-material. Our assessment of the level of risk is made on the basis of:</p> <ul style="list-style-type: none"> <li>• WaterNSW's standard invoice templates making it clear that the customer can contact EWON and clearly communicating EWON's contact details</li> <li>• The information prepared under part (a) of this clause being readily available on WaterNSW's website, as required by part (c) of this clause.</li> </ul>
	6.11 Educative role	Clause 6.11.1	Compliant 	N/A – this clause is graded as compliant.
	6.17 Online portal for lodgement of documents relating to metering equipment	Clause 6.17.2	Compliant 	N/A – this clause is graded as compliant.








## 2023/24 operational audit recommendations and risks of non-compliance








Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
2 Water source protection and conservation	2.1 Water quality management system	Clause 2.1.1	Non-compliant (non-material) 	Without an appropriately maintained Water Quality Management System, the risk posed to public health from material non-compliance could be significant.	<p><b>Recommendation 2024/2.1.1 – 1:</b> By 30 September 2025, review and update the WQMS reporting processes to the Board and Regulators. The review should focus on ensuring the comprehensiveness, accuracy, assurance and timeliness of both regular and exception-based reporting. The updated process should include the following key elements:</p> <ul style="list-style-type: none"> <li>a) metric validity</li> <li>b) source data</li> <li>c) quality assurance (QA) process</li> <li>d) routine and exception-based reporting</li> <li>e) changes to metrics and targets</li> <li>f) CCP reporting and records management</li> <li>g) responsibilities and accountabilities for the above.</li> </ul> <p><b>Recommendation 2024/2.1.1 – 2:</b> By 30 June 2026, establish thresholds for acceptable numbers of controlled documents that are overdue for review.</p> <p><b>Recommendation 2024/2.1.1 – 3:</b> By 30 June 2026, update the process for how WaterNSW conducts water quality risk assessments, including the classification, review and assessment of those risks that were covered by the C2C but are now considered operational.</p> <p><b>Recommendation 2024/2.1.1 – 4:</b> By 31 December 2025, formalise the Modelpedia definition of high-risk activities associated with Process Health Checks, and update the WQMS assurance program to document that Process Health checks involve comprehensive and systematic evaluation of activities and processes to confirm that objectives are being met (aligned to the ADWG), rather than business as usual activities.</p>
		Clause 2.1.2	Non-compliant (non-material)	Without an appropriately maintained Water Quality Management System, the risk posed to	There are no specific new recommendations for this clause. <b>Recommendations 2024/2.1.1 – 1, 2024/2.1.1</b>



Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
				public health from material non-compliance could be significant.	– 2, 2024/2.1.1 – 3 and 2024/2.1.1 – 4, also apply to clause 2.1.2.
		Clause 2.1.3	Non-compliant (material) 	If WaterNSW does not fully implement its Water Quality Management Systems, there is a risk that WaterNSW may not be able to provide safe and reliable services to its customers and consumers. This may result in significant adverse outcomes to public health and public safety.	<p><b>Recommendation 2024/2.1.3 – 1:</b> By 30 June 2026, implement the updated WQMS reporting processes to the Board and Regulators as per Recommendation 2024/2.1.1 – 1.</p> <p><b>Recommendation 2024/2.1.3 – 2:</b> By 30 September 2025, develop a plan to review all overdue WQMS-related controlled documents. At a minimum, the plan should allocate review priority to the relevant documents, the date by which each document will be reviewed, and assign responsibility to the relevant persons.</p> <p><b>Recommendation 2024/2.1.3 – 3:</b> By 30 September 2025, complete a review of all high-priority controlled documents identified in Recommendation 2024/2.1.3 – 2, including a review of the Greater Sydney CCP protocols.</p> <p><b>Recommendation 2024/2.1.3 – 4:</b> By 30 June 2025, review the scheduled Process Health check activities for 2025-26 to ensure that the proposed Process Health checks are a comprehensive and systematic evaluation of activities and processes (aligned to the ADWG), rather than business as usual activities such as updating contact lists, reporting of water quality incidents, updating of procedures and general training activities.</p> <p><b>Recommendation 2024/2.1.3 – 5:</b> By 31 December 2025, ensure that any reporting to the Board and Regulator on the progress of WQMS improvement actions include, at least, the progress of actions identified from C2C risk assessments, internal and tripartite incident debriefs, Health Checks, operational risk assessments, and other actions in the WQIP.</p>
	2.6 Water conservation	Clause 2.6.1	Non-compliant (non-material) 	If WaterNSW does not maintain an effective Water Conservation Strategy, there is a risk that WaterNSW is not adequately prepared to mitigate the impacts of water supply shortages during drought, or has not identified the most cost-effective measures for water conservation. In	<p><b>Recommendation 2024/2.6.1 – 1:</b> By 30 June 2025:</p> <p>a) Ensure that the controlled document for the Water Conservation Plan, required under the 2024-2028 Operating Licence, is correctly maintained in WaterNSW's document management system. The document</p>

Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
				turn, this presents a risk that the critical needs of downstream water users are not met, that inconvenience is caused for downstream water users, or that inefficient bill impacts are created.	<p>management system should generate workflows to the appropriate persons, to ensure that appropriate resources are assigned to complete the review effectively and on time.</p> <p>b) Develop and document clear objectives to enable WaterNSW to evaluate its performance against the objectives and outcomes of the Water Conservation Plan. WaterNSW should measure, monitor and report its performance against these objectives annually.</p> <p>This recommendation should be read in conjunction with <b>Recommendations 2024/2.6.2 – 1</b> and <b>2024/2.6.3 – 1</b>.</p>
		Clause 2.6.2	Compliant (minor shortcomings) 	If WaterNSW does not maintain and implement a Water Conservation Work Program, there is a risk that the measures WaterNSW implements are not efficient and effective in achieving its water conservation objective.	<p><b>Recommendation 2024/2.6.2 – 1:</b> By 30 June 2025, develop and document overarching governance arrangements for the water conservation program to:</p> <p>a) Identify the executive or senior leadership roles with accountability for the successful implementation of the water conservation program</p> <p>b) Provide those leadership roles with oversight of implementation progress and risks</p> <p>c) Identify the decision-making authorities and guiding criteria for reprioritising and rescheduling water conservation activities to respond to emergent risks and opportunities and changes in staff availability.</p> <p>This recommendation should be read in conjunction with <b>Recommendations 2024/2.6.1 – 1</b> and <b>2024/2.6.3 – 1</b>.</p>
		Clause 2.6.3	Compliant (minor shortcomings) 	If WaterNSW does not review, update and report on the Water Conservation Work Program, there is a risk that WaterNSW's ongoing activities are not optimised in respect of achieving its water conservation objective and that the successful implementation of the work program is not evaluated.	<p><b>Recommendation 2024/2.6.3 – 1:</b> By 30 June 2025:</p> <p>a) Clearly articulate the process including specific and actionable principles for identifying, evaluating and selecting options for water conservation activities, together with the process for assessing new options identified in any given year</p>




Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
					<p>b) Clearly articulate the process including specific and actionable principles for assessing the outcomes and/or benefits of water conservation activities included in the water conservation program.</p> <p>This recommendation should be read in conjunction with <b>Recommendations 2024/2.6.1 – 1</b> and <b>2024/2.6.2 – 1</b>.</p>
	2.7 Research on catchments	Clause 2.7.1	Compliant 	N/A – no recommendations made.	No recommendations made.
3 Bulk water storage and transmission	3.2.1 Water supply	Clause 3.2.1	Non-compliant (non-material) 	Failure to supply water in accordance with the relevant Water Quality Management System, Customer Supply Agreement and the agreed supply arrangements with Sydney Water, as appropriate, may compromise the quality of water supplied to end users resulting in a high risk to public health.	<p><b>Recommendation 2024/3.2.1 – 1:</b> By 30 September 2025, in consultation with Sydney Water and relevant stakeholders, commence a review of the Raw Water Supply Agreement with Sydney Water to improve alignment with operational practices and needs of both organisations.</p> <p><b>Recommendation 2024/3.2.1 – 2:</b> By 30 June 2027, in consultation with Sydney Water and relevant stakeholders, either (i) update and implement the Raw Water Supply Agreement with Sydney Water to ensure the agreement better aligns with the operational practices and needs of both organisations; or (ii) update practices to ensure alignment with the requirements of the existing Raw Water Supply Agreement.</p>
5 Organisation management systems	5.1 Asset management system	Clause 5.1.2	Compliant 	N/A – no recommendations made.	No recommendations made.
6 Customer and stakeholder relations	6.4 Advance notification of changes to flow release patterns	Clause 6.4.1	Non-compliant (non-material) 	Failure to maintain an effective system to notify Customers and other stakeholders that have registered to receive notification of relevant changes to flow release patterns poses a risk of adverse impacts to public safety and property.	<p><b>Recommendation 2024/6.4.1 – 1:</b> By 30 June 2026, WaterNSW should develop and implement an appropriate governance framework which at least identifies the risk-basis for notification thresholds, and accountabilities for the provision of notifications related to the Early Warning Network System.</p> <p><b>Recommendation 2024/6.4.1 – 2:</b> By 30 September 2025, Water NSW should review the notification thresholds for water releases from Wingecarribee</p>







Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
					Reservoir and update and implement the notification procedures for Wingecarribee Reservoir.
	6.5 Customer advisory groups	Clause 6.5.1	Compliant 	N/A – no recommendations made.	No recommendations made.
		Clause 6.5.2	Compliant 	N/A – no recommendations made.	No recommendations made.
		Clause 6.5.3	Compliant 	N/A – no recommendations made.	No recommendations made.
		Clause 6.5.4	Compliant 	N/A – no recommendations made.	No recommendations made.
		Clause 6.5.5	Compliant 	N/A – no recommendations made.	No recommendations made.
	6.6 Customer advisory group charter	Clause 6.6.2	Compliant 	N/A – no recommendations made.	No recommendations made.
	6.8 Code of practice on payment difficulties	Clause 6.8.1	Compliant (minor shortcomings) 	Without maintaining and fully implementing a code of practice, customers experiencing hardship may not receive the payment assistance they require.	<b>Recommendation 2024/6.8.1 – 1:</b> By 30 June 2025, examine document review processes for debtor management and payment assistance procedures to identify the root cause(s) of documents not being reviewed as scheduled, and identify corrective actions. <b>Recommendation 2024/6.8.1 – 2:</b> By 30 September 2025, implement the corrective actions identified under <b>Recommendation 2024/6.8.1 – 1</b> . This recommendation should be read in conjunction with <b>Recommendation 2024/6.9.1 – 1</b> .
		Clause 6.8.2	Compliant	N/A – no recommendations made.	No recommendations made.









Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
					
		Clause 6.8.4	Compliant 	N/A – no recommendations made.	No recommendations made.
	6.9 Internal complaints handling procedure	Clause 6.9.1	Compliant (minor shortcomings) 	If WaterNSW does not maintain an adequate Internal Complaints Handling Procedure, there is a risk that customers will not have an opportunity to make complaints about WaterNSW's services not meeting their expectations or to generally provide feedback. In turn, WaterNSW will not be aware of their customers' views, priorities and needs, and it will not consider these in its decision making. This could lead to WaterNSW providing services that do not meet customers' expectations, such as excessive supply interruptions, excessive application processing times, or inadequate customer protections.	<b>Recommendation 2024/6.9.1 – 1:</b> By 30 June 2025, review document review processes for internal complaints handling policy and procedure to identify the root cause(s) of documents not being reviewed as scheduled, and identify corrective actions. <b>Recommendation 2024/6.9.1 – 2:</b> By 30 September 2025, implement the corrective actions identified under <b>Recommendation 2024/6.9.1 – 1</b> . This recommendation should be read in conjunction with <b>Recommendation 2024/6.8.1 – 1</b> .
		Clause 6.9.2	Compliant 	N/A – no recommendations made.	No recommendations made.
		Clause 6.9.3	Compliant 	N/A – no recommendations made.	No recommendations made.
	6.10 External dispute resolution scheme	Clause 6.10.1	Compliant 	N/A – no recommendations made.	No recommendations made.
		Clause 6.10.2	Non-compliant (non-material) 	If WaterNSW does not communicate the information required by this clause, there is a risk that WaterNSW's customers are not aware of the provisions for escalating complaints, if not dealt with effectively by WaterNSW. In turn, WaterNSW may not consider customers' views, priorities and needs in its decision making. This could lead to WaterNSW providing services that do not meet customers' expectations, such as excessive supply interruptions, excessive	We make no recommendations for this non-compliance. Under the 2024-2028 Operating Licence, WaterNSW is only required to notify customers that a summary of the dispute resolution scheme, under EWON, is available on WaterNSW's website. The revised obligation does not require WaterNSW to explain 'how such a complaint or dispute can be assessed'.










Section	Clause	Sub-clause	Audit grade	Risk of material non-compliance (where a recommendation has been made)	Recommendation(s)
				application processing times, or inadequate customer protections.	
	6.11 Educative role	Clause 6.11.1	Compliant 	N/A – no recommendations made.	No recommendations made.
	6.17 Online portal for lodgement of documents relating to metering equipment	Clause 6.17.2	Compliant 	N/A – no recommendations made.	No recommendations made.

## 2023/24 operational audit opportunities for improvement

Section	Clause	Audit grade	Sub-clause	Opportunity(s) for improvement
2 Water source protection and conservation	2.1 Water quality management system	Non-compliant (non-material) 	Clause 2.1.1	<p><b>OFI 2024/2.1.1 – 1:</b> Address the discrepancy in the required frequency of reviewing the WaterNSW Water Quality Contact List (D2013/94543) (6 monthly vs. annually) and implement reviews accordingly.</p> <p><b>OFI 2024/2.1.1 – 2:</b> Consider a provision in the supply agreements with raw water customers, other than Sydney Water, connected to the Warragamba-Prospect pipeline so that the owners ensure any new or prospective tenants are notified of the quality of water supplied.</p> <p><b>OFI 2024/2.1.1 – 3:</b> Update the Warragamba to Prospect supply schematic to show the raw water customers other than Sydney Water connected to the Warragamba-Prospect pipeline.</p> <p><b>OFI 2024/2.1.1 – 4:</b> Ensure that if the Environmental Impact Assessment for minor works template is used as a risk control plan for managing risks associated with materials and chemicals, that it includes a water quality specific risk assessment.</p> <p><b>OFI 2024/2.1.1 – 5:</b> Develop and implement a means to review and track the performance of internal water quality reporting (in terms of meeting the documented internal reporting deadlines, required contents, and required parameters).</p> <p><b>OFI 2024/2.1.1 – 6:</b> Review and update the Water Quality Monitoring Program (CD2011/179, v7) to ensure reference to current legislation and other formal requirements (e.g. remove reference to out-of-date advice on Total Coliforms).</p> <p><b>OFI 2024/2.1.1 – 7:</b> Update the WQMS to consolidate the reporting requirements under element 10.</p> <p><b>OFI 2024/2.1.1 – 8:</b> Develop a process to ensure that as supporting artifacts in Modelpedia are updated, the embedded processes are updated to align with the changes, or the duplication is removed to avoid confusion of requirements.</p> <p><b>OFI 2024/2.1.1 – 9:</b> Consider establishing and including a risk-based performance metric in the WQMS performance dashboard reporting to the Board (or alternate forum) on the proportion of controlled documents that are overdue for review.</p>
		Non-compliant (non-material) 	Clause 2.1.2	There are no specific OFI's for this clause. OFI's for the common Modelpedia processes are discussed in clause 2.1.1.
		Non-compliant (material) 	Clause 2.1.3	<p><b>OFI 2024/2.1.3 – 1:</b> Given the extent of inconsistencies, inadequacies and deficiencies, and the recurring nature of those deficiencies, WaterNSW should consider whether additional staff are required to maintain and implement the WQMS.</p> <p><b>OFI 2024/2.1.2 – 2:</b> Provide information on the Fish River Customer webpage that details the customer education program and promotes water quality awareness amongst customers.</p> <p><b>OFI 2024/2.1.3 – 3:</b> Enhance the current water quality awareness training to include a brief explanation of microbial health-based targets (HBTs) to help inform WaterNSW staff of the</p>

Section	Clause	Audit grade	Sub-clause	Opportunity(s) for improvement
				<p>potential shortfalls in water treatment processes to manage water quality risks, and the need to optimise existing treatment processes, include additional barriers and ensure ongoing source water protection.</p> <p><b>OFI 2024/2.1.3 – 4:</b> Develop an appropriate quality assurance process to review the performance of water quality reporting compared to the stipulated program and procedure requirements (in terms of meeting reporting deadlines, required contents, and required parameters).</p>
	2.6 Water conservation	Non-compliant (non-material) 	Clause 2.6.1	No opportunities for improvement identified.
		Compliant (minor shortcomings) 	Clause 2.6.2	No opportunities for improvement identified.
		Compliant (minor shortcomings) 	Clause 2.6.3	No opportunities for improvement identified.
	2.7 Research on catchments	Compliant 	Clause 2.7.1	<b>OFI 2024/2.7.1 – 1:</b> Consider the development and maintenance of a centralised database/register of all projects (including both projects that were approved and not approved – i.e. both go and no-go), such that WaterNSW can easily review and track decision making.
3 Bulk water storage and transmission	3.2.1 Water supply	Non-compliant (non-material) 	Clause 3.2.1	<p><b>OFI 2024/3.2.1 – 1:</b> In reviewing the Raw Water Supply Agreement with Sydney Water, Water NSW should, in consultation with Sydney Water and relevant stakeholders, consider:</p> <ul style="list-style-type: none"> <li>a) timely information sharing and input to facilitate capital works for both organisations, particularly with respect to works at critical interfaces</li> <li>b) transparency regarding asset condition and maintenance schedules on critical assets</li> <li>c) decision making and prioritisation of supply configuration changes during modes of dam operation (e.g. flood operations)</li> </ul>
5 Organisation management systems	5.1 Asset management system	Compliant 	Clause 5.1.2	<p><b>OFI 2024/5.1.2 – 1:</b> WaterNSW should consider implementing a holistic data improvement plan that focuses on a step change in condition data for assets to better inform the planning process.</p> <p><b>OFI 2024/5.1.2 – 2:</b> WaterNSW should consider implementing costs at the work order level to better track expenditure on each asset.</p>

Section	Clause	Audit grade	Sub-clause	Opportunity(s) for improvement
6 Customer and stakeholder relations	6.4 Advance notification of changes to flow release patterns	Non-compliant (non-material) 	Clause 6.4.1	<b>OFI 2024/6.4.1 – 1:</b> Water NSW should consider a review of the notification thresholds for water releases from each Water Management Works and update and implement the notification procedures for each Water Management Works (on a risk basis, as required). <b>OFI 2024/6.4.1 – 2:</b> WaterNSW should consider opportunities to streamline the water release notification process by increasing the level of technology and automation in the flow detection, prediction and notification processes to reduce the resource intensiveness of the notification process, and minimise possible errors and delays associated with such notifications.
	6.5 Customer advisory groups	Compliant 	Clause 6.5.1	No opportunities for improvement identified.
		Compliant 	Clause 6.5.2	No opportunities for improvement identified.
		Compliant 	Clause 6.5.3	No opportunities for improvement identified.
		Compliant 	Clause 6.5.4	No opportunities for improvement identified.
		Compliant 	Clause 6.5.5	<b>OFI 2024/6.5.5 – 1:</b> In implementing the customer and community engagement requirements of its new (2024 – 2028) Operating Licence, WaterNSW should consider how it can incorporate the feedback received from Customer Advisory Group members regarding the types and level of detail of documented information that it provides to customers and the community. This should include consideration of the type of documented information provided ahead of engagement activities, to provide the target audience with sufficient time to review and deliberate the information received.
	6.6 Customer advisory group charter	Compliant 	Clause 6.6.2	No opportunities for improvement identified.
	6.8 Code of practice on payment difficulties	Compliant (minor shortcomings) 	Clause 6.8.1	No opportunities for improvement identified.

Section	Clause	Audit grade	Sub-clause	Opportunity(s) for improvement
		Compliant 	Clause 6.8.2	No opportunities for improvement identified.
		Compliant 	Clause 6.8.4	No opportunities for improvement identified.
	6.9 Internal complaints handling procedure	Compliant (minor shortcomings) 	Clause 6.9.1	No opportunities for improvement identified.
		Compliant 	Clause 6.9.2	No opportunities for improvement identified.
		Compliant 	Clause 6.9.3	<b>OFI 2024/6.9.3 – 1:</b> WaterNSW should consider amending its standard invoice templates to explicitly direct customers to its Customer Service Charter (including a hyperlink to the charter) for information on how to make a complaint and how WaterNSW will receive, respond to and resolve complaints.
	6.10 External dispute resolution scheme	Compliant 	Clause 6.10.1	No opportunities for improvement identified.
		Non-compliant (non-material) 	Clause 6.10.2	No opportunities for improvement identified.
	6.11 Educative role	Compliant 	Clause 6.11.1	No opportunities for improvement identified.
	6.17 Online portal for lodgement of documents relating to metering equipment	Compliant 	Clause 6.17.2	No opportunities for improvement identified.

# Contents

Executive summary .....	i
Auditor's declaration .....	i
Major findings .....	i
1 Introduction.....	1
1.1 Objectives.....	1
1.2 Audit method, regulatory regime, and quality assurance process.....	1
2 Site visit report.....	2
2.1 Cascade Dams .....	2
2.2 Oberon Dam .....	3
2.3 Medlow Dam.....	4
3 Audit of individual clauses .....	5
Clause 2.1 – Water quality management system .....	5
Clause 2.6 – Water conservation.....	94
Clause 2.7 – Research on catchments .....	102
Clause 3.2 – Water supply.....	105
Clause 5.1 – Asset management system.....	112
Clause 6.4 - Advance notification of changes to flow release patterns.....	118
Clause 6.5 – Customer advisory groups .....	123
Clause 6.6 – Customer advisory group charter.....	132
Clause 6.8 – Code of practice on payment difficulties.....	134
Clause 6.9 – Internal complaints handling procedure.....	141
Clause 6.10 – External dispute resolution scheme .....	147
Clause 6.11 – Educative role .....	150
Clause 6.17 – Online portal for lodgement of documents relating to metering equipment.....	152
4 Previous recommendations .....	154
4.1 Recommendation 2023-01 (Clause 2.1.1).....	154
4.2 Recommendation 2023-02 (Clauses 2.1.1 and 2.1.2) .....	154
4.3 Recommendation 2023-03 (Clause 2.1.1).....	155
4.4 Recommendation 2023-04 (Clause 2.1.1).....	156
4.5 Recommendation 2023-05 (Clause 2.1.2).....	156
4.6 Recommendation 2013-06 (Clause 2.1.3).....	157
4.7 Recommendation 2023-07 (Clause 2.1.3).....	157
4.8 Recommendation 2023-08 (Clause 2.1.3).....	157
4.9 Recommendation 2023-09 (Clause 2.1.3).....	158
4.10 Recommendation 2023-10 (Clause 2.1.3).....	158
4.11 Recommendation 2023-12 (Clause 2.8.8).....	159
4.12 Recommendation 2023-13 (Clause 5.1.2).....	160
4.13 Recommendation 2023-14 (Clause 5.2.2).....	160
4.14 Recommendation 2023-15 (Clause 6.16.1).....	160
<b>Appendix A</b> Audit method, regulatory regime, and quality assurance process .....	162



<b>Appendix B</b>	Acronyms and abbreviations .....	167
<b>Appendix C</b>	Evidence sighted .....	170
<b>Appendix D</b>	Supporting information for Clause 2.1.3.....	189

# 1 Introduction

## 1.1 Objectives

Stantec, in association with Atom Consulting, has been engaged by the Independent Pricing and Regulatory Tribunal (IPART) to conduct an operational audit of WaterNSW.

The objective of this engagement is to conduct an audit of WaterNSW's performance against the terms and conditions (as defined in the audit scope) of its operating licence and any other Ministerially imposed requirements for the period from 1 July 2023 to 30 June 2024, including consideration of:

- WaterNSW's Operating Licence 2022-2024
- WaterNSW's Reporting Manual 2022-2024
- IPART's Public Water Utility Audit Guideline (July 2023)
- IPART's WaterNSW 2023 Operational Audit – Report to the Minister (March 2024).

The audit team has also audited recommendations outstanding from previous audits and expressed an opinion on the progress to completing these recommendations.

## 1.2 Audit method, regulatory regime, and quality assurance process

We provide this information in Appendix A.

## 2 Site visit report

On 6 November 2024 the audit team participated in site visits in the Blue Mountains region, accompanied by WaterNSW staff. The sites visited were Cascade Dams, Medlow Dam and Oberon Dam (including the pump station).

The Blue Mountains system sources water from within and outside the Blue Mountains catchments. These catchments are a small group of bushland valleys that feed water to Medlow Dam, Greaves Creek Dam and the Upper, Middle and Lower Cascade dams. The configuration of the Blue Mountains system is flexible, allowing WaterNSW to take dams on and offline as needed to help meet demand and quality requirements. Cascade Dams and Medlow Dam are inaccessible to the public.

### 2.1 Cascade Dams

There are three dams built on Cascade Creek. Middle Dam was completed in 1908, is 15m tall and 105m long. The Lower Dam was completed in 1928, is 26m high and 128m long. The Upper Dam was completed in 1938, is 30m high and 247m long. All three are declared dams under the Dams Safety Act 2015 and is subject to the requirements of the dam safety regulator in NSW (Dams Safety NSW) as well as WaterNSW's dam safety management system. Access is via a gate on Mort Street, which is locked outside of operating hours and has a security patrol. The site has a small depot and office, which is alarmed, and is manned on all weekdays. It is noted there is an adjacent Sydney Water facility within the site that is manned as well.

WaterNSW use a bespoke application, called Dam Guard, to capture dam safety data and information. However, the scheduling of work to collect this information and undertake maintenance activities is performed through a computerised maintenance management system (CMMS) called EAMS. We discussed the use of EAMS with the operational staff at Cascade dams and the following observations were noted:

- EAMS can provide a 12-week or 24-month view of upcoming work orders. An example of the 12-week look-a-head was observed.
- The planning team inputs the required work into the planning board once the work orders are ready to be undertaken. The scheduler will then allocate the work orders to specific people in the team for the week being scheduled. A planning meeting is held each week with the planning team and the Team Leader to confirm and then a weeks' worth of work orders are then provided to the team.
- Each work order is assigned a priority from 1 to 3, where 1 is the most urgent. Work orders for repairs of breakdowns are normally assigned priority 1, most preventative maintenance work orders (PMs) are generally assigned to priority 3. Breakdown work orders are sent direct to the Team Leaders to action and are not handled by the scheduler, as the scheduler is focused on the forward plan. WaterNSW noted they were working on improving the graduation of priorities of PMs to better indicate the relative importance of each work order.
- EAMS work orders follow a process through several stages from initiation to completion. The stages of the work orders are, from 0 to 7: Create, Initiate, Planned, Scheduled, Execute, Deferred, Complete, and Closed.

To update and complete the work orders, the team now uses an application called Field Services that runs on their tablets. Field Services is able to display the EAMS work orders, so the team have the requirements of the work orders with them and can enter data directly into the system. The team members will synchronise their tables in the morning to have a current list of work orders, having them in offline mode while working during the day and synchronise again in the afternoon to upload the data. Maintenance data is stored in EAMS and surveillance data is entered and stored in Dam Guard. There is a standard checklist for each job type and all work is allocated against the asset hierarchy. Field Services has the capability to upload photos and other attachments that are saved against the work orders. Field Services has been in use for 12-18 months; thus, a significant part of the implementation took place in the early part of the audit period.

The following examples of work orders were sighted:



- Surveillance minor inspection for Oberon Dam. The dates on the work order were scheduled start 01/07/2024 and scheduled end 05/07/2024. The actual start date was 26/06/2024 and end date was 08/07/2024. Photos were attached to the work order.
- Completed work order for valve isolation, condition assessment of the valve was included in the data for this work order
- Work order WO00234604 was provided showing a condition assessment on the Destratification Unit Fan, completed on 07/09/2023.
- Work order WO00261536 was provided showing repair work carried out for a pipe break on the Stage 2 pipeline at Stacks Road, Rydal. Work order checked 30/10/2023 and included photos of work undertaken.
- WaterNSW showed us the list of deferred work orders live in the system and explained that it a reason code is required to be assigned to the work order and approved by the Team Leader for all deferred work.

The Water Quality Policy displayed at the Cascade Dam Office during the site visit was not the latest version (the approved date of the displayed policy was 20 November 2019, whereas the approved date of the current policy is 27 June 2023).

## 2.2 Oberon Dam

Completed in 1949 (and then raised in 1957), Oberon Dam is 33.5m tall and 232m long slab and buttress structure that includes a ski jump spillway. There is an earthen embankment extending a further 167m to the north of the main wall, with a fuse plug spillway north of the embankment. Oberon Dam is a declared dams under the Dams Safety Act 2015 and is subject to the requirements of the dam safety regulator in NSW (Dams Safety NSW) as well as WaterNSW's dam safety management system.

The intake tower for the dam is set up with nine offtake valves and associated stop boards to provide the option of drawing water from different heights in the dam, where value 1 is the deepest and 9 is the highest. This allows some adjustment to meet water quality requirements. At the time of inspection, valves 7 and 8 were in use. WaterNSW informed us that the selection of which offtake position to use is determined by the water quality team and communicated to the operational team to make the adjustments. However, it was noted that the valves and stop boards had been in poor condition and at the end of their service life, making them difficult to operate. As a result, the valves and stop boards were generally left in the same configuration. The valves have recently been changed (within the audit period) and are now able to be operated correctly, so it is envisaged that changes to the offtake positions can now be made more readily to align with the water quality team requirements. The variable off-take selection at Oberon Dam is a critical control point (CCP7) and operating control point (OCP7A and OCP7B) for the Fish River Water Supply System (CD2021/127[v1]).

A capital project was carried out to replace these offtake valves. Business case (D2022/112947) was provided, which outlined the need and scope of the required works at Oberon Dam. This business case included four scope items for concrete spalling, discharge pipeline coating renewal, offtake valve replacement and scour bay draining. The total value of the works, including previous approvals and contingency was \$3.13M, of which \$608,000 was directly for the valve replacement project. The business case was approved in March 2023.

A diving inspection report of the offtake valves and intake tower was provided (D2024/130245). The report documented the outcomes of inspections carried out on the 17 and 18 October 2023. This demonstrates the condition assessments were being carried out and, in this case, was used to confirm the scope of works for the valve replacement project.

During interviews on the site visit, maintenance staff advised that prior to the off-take valves being replaced, the flexibility and availability of the CCP and OCP controls was restricted.

While at the Oberon Dam site, we also visited the pump station that supplies water to Oberon and the Fish River Scheme. Recently one pump was repaired and put back into service, resulting in a higher water flow being achieved. This higher water flow impacted the treatment plant at Oberon, and as a result, had to be

modified to reduce the flow. WaterNSW engaged with Oberon Council as part of the pump replacement. We have discussed this further in clause 3.2.1.

## 2.3 Medlow Dam

Water from Lake Medlow and Greaves Creek Dam is pumped to the Cascades Dams to supplement supply. Lake Medlow Dam, initially known as Adams Creek Dam, was constructed in 1907 on Adams Creek and is used to top-up the Greaves Creek Dam in emergencies. Medlow Dam is 20m high and 38m long.

We observed that the gate to the site was locked, and there was appropriate signage notifying the public that public access was prohibited.

During interviews on the site visit, WaterNSW advised that:

- Chemical risks were considered in the C2C risk assessment conducted with Sydney Water and NSW Health in approximately 2019.
- Water quality results from samples first collected in July 2024 indicated Medlow Dam is impacted by elevated levels of PFAS.
- WaterNSW disconnected Medlow Dam and Greaves Creek Dam from supply to Cascade as a precautionary measure while investigations continue, and that the outcome of the investigation will inform the next steps WaterNSW will take to further mitigate risk.
- Fortnightly sampling was put in place for Greaves Creek.

The activities regarding PFAS all occurred outside of the audit period.


We have provided further commentary on the approach to managing emerging contaminants in clause 2.1.3.

### 3 Audit of individual clauses

#### Clause 2.1 – Water quality management system

##### Clause 2.1.1

Table 3-1 Clause 2.1.1 compliance grade

Subclause	Requirement	Compliance grade
2.1.1	With respect to Declared Catchment Areas, Water NSW must maintain a Water Quality Management System that is consistent with either: a. the Australian Drinking Water Guidelines; or b. if NSW Health were to specify any amendment or addition to the Australian Drinking Water Guidelines that applies to Water NSW, the Australian Drinking Water Guidelines as amended or added to by NSW Health; or c. any other requirements specified or approved by NSW Health or IPART.	Non-compliant (non-material) 
<b>Risk</b> Without a Water Quality Management System, the risk posed to public health from material non-compliance with this clause could be significant.	<b>Target for full compliance</b> Evidence that a Water Quality Management System is maintained and kept up to date for the Declared Catchment Areas, that it is consistent with the ADWG, or as specified by NSW Health or IPART.	

##### Summary of reasons for grade

We have assigned WaterNSW a non-compliant (non-material) grade for clause 2.1.1.

In the statement of compliance 2024 letter to IPART (dated 27 August 2024), WaterNSW declared ongoing non-compliance for this clause until all recommendations from the 2022-2023 Operating Licence Audit are complete.

WaterNSW has an on-line Water Quality Management System (WQMS) in Modelpedia, which is accessible to WaterNSW staff via The Source (intranet). Modelpedia contains the WQMS for both Declared and Non-Declared Catchments. WaterNSW has documented activities for each action within the Australian Drinking Water Guidelines (ADWG) Framework for Management of Drinking Water Quality. WaterNSW have categorised the activities, documents and processes referenced in Modelpedia as either common (to both the Declared and Non-Declared Catchment), or relevant to Greater Sydney (Declared Catchment) or Fish River (Non-Declared Catchment). The intranet version includes links to relevant documentation in the ARK records management system.

Modelpedia is supported by documents and processes that apply across the organisation as well as processes that may be specific to the Declared or Non-Declared Catchment.

In our sampling during this audit, we found the WQMS did not address all the required aspects of each action of the ADWG Framework for the Declared Catchment.

Modelpedia has non-material inconsistencies, inadequacies, and deficiencies and does not fully address the requirements of the ADWG. The 2022-23 Operational Licence Audit also found WaterNSW non-compliant (non-material) for this clause, and several of the recommendations to address the non-compliance remain open and overdue.













In undertaking this audit, we have also found further non-material non-compliances in addition to the non-material non-compliances previously identified in the 2022-23 Operational Licence Audit.

We consider that, when taken as a whole, these findings warrant a non-compliant (non-material) grade. We have graded this clause non-compliant (non-material), as we consider there to be a low residual risk of the non-compliance causing WaterNSW to fail to meet the public health objectives under the licence, given the multiple barrier approach that WaterNSW uses as required under the ADWG.



For context, we have provided an indication of the audit findings at the ADWG element level for this clause in Table 3-2. In some cases, although the element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies and inadequacies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

**Table 3-2 Overview of audit findings at the ADWG element level for clause 2.1.1**

ADWG element		Finding (at the element level)		Notes
1	Commitment to drinking water quality management	Compliant (minor shortcomings)		While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.
2	Assessment of the drinking water supply system	Non-compliant (non-material)		
3	Preventive measures for drinking water quality management	Non-compliant (non-material)		
4	Operational procedures and process control	Non-compliant (non-material)		
5	Verification of drinking water quality	Compliant		Aspects of non-material non-compliance associated with this element have been considered under element 3 in this clause.  Shortcomings associated with this element have been considered under element 6 in this clause.
6	Management of incidents and emergencies	Compliant (minor shortcomings)		While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.
7	Employee awareness and training	Compliant (minor shortcomings)		While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.
8	Community involvement and awareness	Compliant		
9	Research and development	Compliant		
10	Documentation and reporting	Non-compliant (non-material)		
11	Evaluation and audit	Compliant		Aspects of non-compliance (non-material) associated with this element have been considered under element 10 and element 12 in this clause.
12	Review and continual improvement	Non-compliant (non-material)		

We have provided a summary of the non-compliances (Table 3-3) and shortcomings (Table 3-4) identified for this clause. Detailed findings are provided in the discussion and notes section of this clause.



**Table 3-3 Specific examples of WQMS inconsistencies and deficiencies contributing to the non-compliant (non-material) findings for the Declared Catchment**

Element	Aspect	Findings
2	Risk assessment process	Modelpedia documents that each risk line item in the risk register is to be given an uncertainty rating of “Certain”, “Intermediate”, or “Uncertain” based on the current level of knowledge and or availability of supporting data. However, no supporting processes or definitions are provided in Modelpedia. Uncertainty ratings are not defined in the C2C risk assessment procedure (CD2021/92[v4]) and there is not a methodology in Modelpedia for evaluating the major sources of uncertainty for each hazard. This finding is also applicable to clause 2.1.2.
3 and 6	CCP documentation	There are inconsistencies between the CCP Tables referenced in Modelpedia (CD2021/128) and the water quality incident protocol referenced in Modelpedia (CD2014/183). For example, there are inconsistencies regarding when the incident management team (IMT) is required to be established to manage a water quality incident or event (e.g. for the critical limit actions as part of CCP1).
3	CCP change management	There is no documented change management process to ensure that CCP alarms are reset to their original set points after the alarm limits have been raised above the critical limit to avoid nuisance alarms. WaterNSW advised that the maximum duration permitted for a CCP change is two weeks in practice, but both Modelpedia and the SCADA Standards - Change Management Standard (CD2024/2) are silent on the maximum permissible duration. Non-compliances in maintaining a system for change management of CCP alarms were previously identified in the 2022-23 Operational Licence Audit report. WaterNSW have not completed Recommendation 2023-03, which is overdue (it was due by 30 June 2024), and would resolve this non-compliance. This finding is also applicable to clause 2.1.2.
4	Operational procedures	The absence of a formalised Operations and Maintenance (O&M) manual for the Upper Canal was identified as a non-compliance (non-material) in the 2022-23 Operational Licence Audit. Recommendation 2023-04 addressed this non-compliance and was due by 30 June 2024. As discussed in the progress review of Recommendation 2023-04, WaterNSW completed this action in October 2024, which extended the non-compliance into this audit period.
10	Records and documentation	Modelpedia does not document information pertinent to all aspects of drinking water quality management (as discussed in other elements of this clause), does not document training requirements for completion of records (e.g. role-specific training and competency requirements for record keeping and reporting), and has obsolete references inconsistent with current practice (e.g. the frequency of review by senior executive). This finding is also applicable to clause 2.1.2.
3, 11 and 12	Improvement actions	Modelpedia does not document how all improvement items are tracked and monitored for effectiveness; Modelpedia only references the water quality improvement plan and does not reference that actions are held in multiple systems (such as RACs and JOG minutes). The process for evaluating new preventive measures (e.g. those identified in Health Checks) before adding them to the water quality improvement plan is unclear and not documented in Modelpedia. This finding is also applicable to clause 2.1.2.

**Table 3-4 Specific examples of WQMS shortcomings for the Declared Catchment**

Element	Aspect	Findings
1, 6, 10	Stakeholders, communication and documentation	Document review processes are inconsistently defined across different areas of Modelpedia. For example, element 1 in Modelpedia documents that the Water Quality Contact List is updated every six months, whereas element 6 records the review frequency as at least once per year. This finding is also applicable to clause 2.1.2.
2	Risk assessment	There are inconsistencies between the updated Conduct Catchment-to-Customer (C2C) Risk Assessment (CD2021/92[v4]) and the C2C process embedded in Modelpedia. This is considered a shortcoming and not a non-compliance as Modelpedia references CD2021/92[v4].

Element	Aspect	Findings
		<p>The C2C risk assessment schedule (D2022/100491) is not referenced in Modelpedia.</p> <p>The updated C2C procedure does not document or define the role of WaterNSW in C2C risk assessments for the declared catchment where the customer is not Sydney Water, for example the compilation of relevant background information or the development of a draft report after the risk review summarising the key findings, changes and recommendations for further actions.</p> <p>During the C2C risk assessments undertaken in the audit period (see element 3 of clause 2.1.3), WaterNSW determined that some hazardous events and risks were no longer considered appropriate to score as part of the C2C risk assessment and reclassified those risks as operational. A shortcoming is that the methodology or guidance for this approach is not documented in the WQMS.</p> <p>These findings are also applicable to clause 2.1.2.</p>
4	Operational procedures	The O&M manual for Upper Canal is not linked in Modelpedia.
5, 6	Monitoring and incidents and emergencies	The <i>Raw Water Supply Agreement</i> sets out the raw water quality standards for each Sydney Water WFP. WaterNSW advised that any exceptions to the agreed targets are managed in accordance with the Water Quality Incident Response Protocol (CD2004/183[v4]). There are inconsistencies in parts of the water quality parameters across the Raw Water Supply Agreement and Water Quality Incident Response Protocol (e.g. turbidity ranges and notification triggers for Illawarra WFP). This gap is further discussed in clause 3.2.1.
7	Training	WaterNSW does not have a process to ensure that third party contractors have appropriate water quality awareness, training, qualifications and experience. This finding is also applicable to clause 2.1.2.

## Discussion and notes

Modelpedia and supporting WQMS documents are generally aligned with the 12 elements of the ADWG Framework for Management of Drinking Water Quality. The WQMS is supported by documents and processes that apply across the organisation as well as processes that may be specific to the Declared or Non-Declared Catchment. Modelpedia contains links to many of the supporting documents and processes. We were provided with external access to Modelpedia, which did not have access to the linked documentation. WaterNSW provided specific supporting documents and processes linked in Modelpedia as evidence.

Modelpedia is an effective tool for documenting the WQMS.

The audit scope was elements 1 to 12 of the ADWG Framework.

## Element 1 Commitment to drinking water quality management

We identified shortcomings in the maintenance of a WQMS consistent with the requirements of the ADWG for this element. While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

### Drinking water quality policy

The actions under the ADWG Framework for this component are:

- Formulate a drinking water quality policy, endorsed by senior executive, to be implemented throughout the organisation.
- Ensure that the policy is visible and is communicated, understood and implemented by employees.

WaterNSW has provided sufficient evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.



*Findings and supporting information related to this component are provided below.*

WaterNSW had a water quality policy that was current throughout the period. The policy was updated on 27 June 2023 (CD2014/5, v7). The policy sets out the scope, actions and accountability for water quality. The next review date for the policy was accurately recorded in the footer of the policy and WaterNSW advised that it will be reviewed as per the documented two-yearly review cycle (i.e. June 2025).

Modelpedia documents that the policy is on display in WaterNSW offices, available on the intranet and is described in the mandatory Water Quality Awareness training (which is to be completed by all new staff and repeated every two years).

### **Regulatory and formal requirements**

The actions under the ADWG Framework for this component are:

- Identify and document all relevant regulatory and formal requirements.
- Ensure responsibilities are understood and communicated to employees.
- Review requirements periodically to reflect any changes.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The *Compliance Management Procedure* (CD2021/121[v1]) sets out WaterNSW's management of compliance obligations. The *Compliance Management Implementation Plan* details (CD2021/160[v3]) implementation activities.

WaterNSW maintains a *Legal and Other Requirements Register* which is updated yearly to ensure ongoing compliance and to capture any new requirements. The register was last reviewed in April 2024 and the update was approved and published in July 2024 (CD2013/26[v4]). The register includes a record of changes made between versions.

Current position descriptions for a sample of WaterNSW officers including a water quality advisor (D2024/41189 PD), a Maintenance Team Leader (D2022/58566) and a Maintenance Officer - Water Treatment Plant (D2022/163706) were provided as evidence.

The *Controlled Documents Framework* (CD2019/123[v2]) provides an overview of the controlled document process at WaterNSW and evidence of associated processes as provided including developing new or reviewing existing controlled documents (CD2019/155[v2]), making controlled documents obsolete (CD2019/156[v2]), managing the review of controlled documents review (CD2019/153), and requesting new or updated controlled documents (CD2019/154).

### **Engaging stakeholders**

The actions under the ADWG Framework for this component are:

- Identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier.
- Develop appropriate mechanisms and documentation for stakeholder commitment and involvement.
- Regularly update the list of relevant agencies.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for the following shortcoming:

- Regularly update the list of relevant agencies.



*Findings related to the minor shortcoming for this component are outlined below.*

Stakeholders and their contact information are recorded in the WaterNSW Water Quality Contact List (D2013/94543). A shortcoming in the required frequency of updating the Water Quality Contact List was noted in Modelpedia, where element 1 in Modelpedia documents that the Water Quality Contact List is updated every six months, whereas element 6 in Modelpedia documents that it is updated at least once per year.

*Other findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has processes to meet the ADWG requirements to identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier, develop appropriate mechanisms and documentation for stakeholder commitment and involvement, and regularly update the list of relevant agencies.

WaterNSW has a Memorandum of Understanding (MoU) with NSW Health (which is required under the *Water NSW Act* s21(2) and Operating Licence clause 6.13). The MoU is current and located on the WaterNSW website.

WaterNSW has established the following forums to engage with their stakeholders:

- Strategic Liaison Group (SLG) with NSW Health and Sydney Water. Modelpedia records these are usually held quarterly.
- Joint Operational Group (JOG) with NSW Health and Sydney Water. Modelpedia records these are usually held quarterly.
- Operational Forums with Major Greater Sydney Customers. Modelpedia notes that meetings are held as required under raw water supply agreements and protocols.

## **Element 2 Assessment of the drinking water supply system**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### **Water supply system analysis**

The actions under the ADWG Framework for this component are:

- Assemble a team with appropriate knowledge and expertise.
- Construct a flow diagram of the water supply system from catchment to consumer.
- Assemble pertinent information and document key characteristics of the water supply system to be considered.
- Periodically review the water supply system analysis.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW's risk assessment methodology is set out in Conduct Catchment-to-Customer (C2C) Risk Assessment (CD2021/92[v4]), which includes:

- Identify issues for risk review
- Determine scope of risk review
- Identify risk review workshop members
- Compile relevant background information
- Circulate relevant material and data



- Hold risk review workshop
- Revise full risk register and produce draft risk assessment report
- Incorporate review group comments
- Finalise and upload risk register and risk assessment report
- Approve risk register

Modelpedia requires that:

- WaterNSW participants in C2C risk assessments require expertise in system operations, water treatment, water quality, public health and when required, assets/project management.
- NSW Health (Water Unit or relevant Local Health District) must be invited to participate in any water quality risk assessment.
- Membership may include Sydney Water Corporation, BOOT plant operators, or major customer councils or external subject matter experts as required.

This is considered consistent with ADWG requirements to assemble a team with appropriate knowledge and expertise.

WaterNSW maintains general schematic flow diagrams for the following water supply systems on Modelpedia:

- Woronora Supply
- Upper Nepean Supply
- Shoalhaven Water Supply
- Blue Mountains Supply
- Warragamba to Prospect Supply
- Prospect Supply

Modelpedia documents that the schematics outline all steps and processes, identify handover points and third-party assets, and that they also summarise the basic characteristics of each component, any characteristics that are unique to the system and key system components that are relevant to the management of water quality, such as source water, destratification systems, monitoring points, critical valves, Critical and Operational Control Points. This is consistent with the ADWG requirements.

Modelpedia documents that system schematics are reviewed prior to undertaking a system risk assessment or following any major changes to relevant assets or procedures. WaterNSW advised that changes to the schematics are tracked in the *System Schematic Log of Changes* (D2022/147475), and that verification of the schematics is scheduled in the *WQMS Assurance Plan* (D2017/87415).

Modelpedia notes that if the scope of the risk assessment is restricted to a targeted issue, risk or incident, not all of the materials and data may be required.

The CD2021/92[v4] procedure notes that pertinent information from Operational Risk Assessments may form part of the relevant material and data for risk assessments.

In stakeholder feedback provided to IPART (letter dated 5 August 2024), NSW Health noted that there are some properties connected to the Warragamba-Prospect pipeline with specific supply agreements that receive untreated water. These connections are not shown on the Warragamba to Prospect Supply schematic. An opportunity for improvement has been identified in relation to this.

### Assessment of water quality data

The actions under the ADWG Framework for this component are:

- Assemble historical data from source waters, treatment plants and finished water supplied to consumers (over time and following specific events).
- List and examine exceedances.



- Assess data using tools such as control charts and trends analysis to identify trends and potential problems.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

We have considered reporting of water quality monitoring further in element 5 and element 10 of this clause.

*Findings and supporting information related to this component are provided below.*

The *Water Quality Data Analysis and Reporting Procedure* (CD2012/130) outlines the process for reviewing, analysing and reporting on raw and treated water quality data. The *Water Quality Incident Response Protocol* (CD2004/183) documents that exceedances are logged in the Risk Assurance and Compliance System (RACS). Modelpedia outlines that quarterly water quality performance and trend analysis reports are prepared including review of CCP performance and any incidents, and that tools such as SCADA trends and SCARMS plots are used for routine reports and frequently during incidents or under heightened risk conditions and prior to conducting risk assessments.

### **Hazard identification and risk assessment**

The actions under the ADWG Framework for this component are:

- Define the approach and methodology to be used for hazard identification and risk assessment.
- Identify and document hazards, sources and hazardous events for each component of the water supply system.
- Estimate the level of risk for each identified hazard or hazardous event.
- Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.
- Determine significant risks and document priorities for risk management.
- Periodically review and update the hazard identification and risk assessment to incorporate any changes.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework action to:

- Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.

We also identified shortcomings with the maintenance of the WQMS related to the ADWG Framework action to:

- Define the approach and methodology to be used for hazard identification and risk assessment.

*Findings related to non-material non-compliance for this component are outlined below.*

WaterNSW updated the *Conduct Catchment-to-Customer (C2C) Risk Assessment* (CD2021/92[v4]), which outlines the procedure to conduct, review and finalise C2C risk assessments. Modelpedia documents that each line item is given an uncertainty rating of “Certain”, “Intermediate”, or “Uncertain” based on the current level of knowledge and or availability of supporting data. Modelpedia and the C2C procedure are inconsistent with the ADWG Framework requirements, as no definitions or supporting processes to evaluate uncertainty are provided in Modelpedia. Uncertainty ratings aren’t defined in CD2021/92[v4] and there isn’t a methodology in Modelpedia for evaluating the major sources of uncertainty for each hazard. The ADWG states that uncertainty can be caused by a lack of knowledge or by variability in parameters, and that while variability can only be better understood (e.g. by improved characterisation of a hazard), uncertainty due to lack of knowledge can be reduced through better measurement and research. By not maintaining a system



to evaluate uncertainty, there is risk that WaterNSW do not apply a consistent approach to understand the limitations of hazard identification and risk assessment activities, and how these limitations can be reduced. The ADWG states that investigative studies and research monitoring can often provide further information for the risk assessment process and help to reduce uncertainty. We consider that the inconsistency presents a low risk to the public health objectives under this licence clause, given the multiple barrier approach outlined in Modelpedia for hazard identification and risk assessment, and additional barriers outlined in Modelpedia (element 9) for investigation and research.

*Findings related to shortcomings for this component are outlined below.*

Modelpedia contains an embedded process outlining the steps of the C2C risk assessment process. A shortcoming is that the embedded process was not updated to align with the updated procedure (CD2021/92[v4]), resulting in minor inconsistencies between the procedure and the embedded process.

WaterNSW undertakes C2C risk assessments with customers in the declared catchment other than Sydney Water as outlined in the C2C risk assessment schedule (D2022/100491). WaterNSW (formerly Sydney Catchment Authority) had an obligation under its operating licence to have processes that meet the ADWG Framework requirements in the Declared Catchment since 2012 (possibly earlier). WaterNSW has previously led C2C risk assessments with councils that it supplies with raw water. In 2014, a similar obligation for Local Water Utilities (LWUs) came into force under the *Public Health Act NSW* (2010).

WaterNSW updated the C2C risk assessment procedure (CD2021/92[v4]) which includes a purpose/scope section outlining that the procedure applies to drinking water supplies operated by Sydney Water, Lithgow City Council, Oberon Council, Wingecarribee Shire Council and Goulburn-Mulwaree Council, and that the procedure does not include Shoalhaven City Council who lead their own risk assessments. WaterNSW provided a C2C risk assessment schedule (D2022/100491) that clarifies roles for scheduling and facilitating the C2C risk assessments for various systems. A shortcoming is that the schedule is not referenced in Modelpedia or the *Conduct Catchment-to-Customer (C2C) Risk Assessment* (CD2021/92[v4]). Another shortcoming is that the updated procedure does not document or define the role of WaterNSW in C2C risk assessments for the declared catchment where the customer is not Sydney Water, for example the compilation of relevant background information or the development of a draft report after the risk review summarising the key findings, changes and recommendations for further actions.

WaterNSW undertakes operational risk assessments that embody the ADWG requirement to review and update the hazard identification and risk assessment to incorporate any changes. During the C2C risk assessments undertaken in the audit period (see element 3 of clause 2.1.3), WaterNSW determined that some hazardous events and risks were no longer considered appropriate to score as part of the C2C risk assessment and reclassified those risks as operational. A shortcoming is that the methodology or guidance for this approach is not documented in the WQMS.

*Other findings and supporting information related to this component are provided below.*

Modelpedia documents processes to document and agree on findings of a C2C risk assessment including new, high or changed risks and any recommended additional controls, and add recommendations to the water quality improvement plan.

### **Element 3 Preventive measures for drinking water quality management**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

#### **Preventive measures and multiple barriers**

The actions under the ADWG Framework for this component are:

- Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk.
- Evaluate alternative or additional preventive measures where improvement is required.



- Document the preventive measures and strategies into a plan addressing each significant risk.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia documents common activities for this component:

- Identify existing preventive measures by maintaining the list of current controls in the C2C risk assessment spreadsheets.
- Evaluate alternative preventive measures (supported by the Conduct Catchment-to-Customer (C2C) Risk Assessment process mapped in Modelpedia).
- A procedure for adding recommendations to the water quality improvement plan (CD2021/95) and the plan itself (D2019/53719). We discuss the process to evaluate and document improvement measures to address risks in element 12 of this clause.
- The Pollution Source Assessment tool is listed as a common item (although it may apply only to the declared catchment).

Specific measures documented for the Declared Catchment are the Source Water Protection Strategy and employing the Neutral or Beneficial Effects Test.

### **Critical control points**

The actions under the ADWG Framework for this component are:

- Assess preventive measures from catchment to consumer to identify critical control points.
- Establish mechanisms for operational control.
- Document the critical control points, critical limits and target criteria.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework actions to:

- Establish mechanisms for operational control.
- Document the critical control points, critical limits and target criteria.

*Findings related to non-material non-compliance for this component are outlined below.*

There are inconsistencies between the CCP Tables referenced in Modelpedia (CD2021/128) and the water quality incident protocol referenced in Modelpedia (CD2004/183). For example, for CCP1, the CCP tables referenced in Modelpedia *require* an incident management team (IMT) to be established at the critical limit (>20 NTU for >1 hour), whereas the classification guide in the water quality incident protocol outlines that an IMT *may* be established if there is a critical limit exceedance. The ADWG states that deviations from critical limits indicates a loss of control of the process or activity and should be regarded as representing a potentially unacceptable health risk. The inconsistency between the supporting documents creates a risk that WaterNSW do not appropriately respond to deviations from critical limits. The inconsistency is considered a non-compliance as it poses a risk to the public health objectives under this licence clause if WaterNSW do not appropriately respond to deviations from critical limits. Inconsistencies in maintaining a system to manage deviations from critical limits and water quality incidents were previously identified in the 2022-23 Operational Licence Audit report. We consider that the inconsistency presented a low risk to the public health objectives of this licence clause in the audit period, as WaterNSW demonstrated implementation of a proactive ('lean-forward') approach to identifying and managing aspects of water quality incidents during the audit period and demonstrated regular engagement with Sydney Water at an operational level.

Modelpedia and the supporting mechanisms for operational control do not document change management processes to ensure that CCP alarms are reset to their original set points. This inadequacy is considered a



non-compliance as it poses a risk that WaterNSW do not reset CCP alarms to original set points following possible water quality incidents or maintenance activities, meaning that future excursions from critical limits may not raise alarms. This non-compliance was identified in the 2022-23 Operational Licence Audit, and the recommendation (2023-03) to address the non-compliance is overdue. We have discussed this further in the progress review of Recommendation 2023-03 (clause 2.1.1).

The Greater Sydney CCPs (CD2021/121) document that the CCPs were due for review in January 2024. WaterNSW provided insufficient evidence that the CCPs were adequately reviewed by WaterNSW in the audit period. WaterNSW emailed a copy of the current Greater Sydney CCPs to NSW Health in June 2024 asking for their review of the protocols (D2024/48199). The email notes that WaterNSW had not completed their review and update of the Greater Sydney CCPs before sending the CCP protocols to NSW Health. The May 2024 JOG minutes (D2024/79034) contain an action to review the definition of CCPs used by WaterNSW, Sydney Water and NSW Health, and in the minutes the action responsibility is assigned to representatives from Sydney Water and WaterNSW. WaterNSW did not complete this action (e.g. review the definitions and develop a consistent view with Sydney Water) before providing the CCP protocols to NSW Health for review.

Given the inconsistencies previously mentioned for this component, and that control and measuring aspects of some CCPs had restricted availability during the audit period (as discussed in clause 2.1.3), WaterNSW has provided insufficient evidence that WaterNSW adequately maintained up to date documentation of CCPs, critical limits and target criteria during the audit period. We consider that this presented a low residual risk to the public health objectives of this licence clause, as the risk was mitigated by WaterNSW having the overdue and out-dated CCP documentation in-place. We consider that this inadequacy contributes to the findings in clause 2.1.3.

*Other findings and supporting information related to this component are provided below.*

WaterNSW has assessed the preventive measures in the raw water supply to identify CCPs. CCPs are documented in Critical Control Points for Raw Water Supply to WFPs (CD2021/128[v2]). The document includes justification for targets and critical limits and operator's actions for exceeding the target criteria and critical limits.

#### **Element 4 Operational procedures and process control**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

##### **Operational procedures**

The actions under the ADWG Framework for this component are:

- Identify procedures required for processes and activities from catchment to consumer, including microbial health-based targets.
- Document all procedures and compile into an operations manual.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for a non-material non-compliance and a shortcoming related to the ADWG Framework actions to:

- Document all procedures and compile into an operations manual.

*Findings related to non-material non-compliance for this component are outlined below.*

The absence of a formalised Operations and Maintenance (O&M) manual for the Upper Canal was identified as a non-compliance (non-material) in the 2022-23 Operational Licence Audit. Recommendation 2023-04 addressed this non-compliance and was due by 30 June 2024. As discussed in the progress review of Recommendation 2023-04, WaterNSW completed this action in October 2024, which extended the non-compliance into this audit period. Without consolidating formalised operational procedures for Upper Canal, there is a risk that WaterNSW do not understand and consistently implement activities that are essential to



ensure the provision of safe quality water in Upper Canal. We consider that the risk is low, as WaterNSW developed a draft O&M manual to document procedures for Upper Canal in the audit period.

*Findings related to shortcomings for this component are outlined below.*

A shortcoming is that Modelpedia has not been updated to link the O&M manual for Upper Canal.

*Other findings and supporting information related to this component are provided below.*

Modelpedia contains links to the O&M manuals for the dams and some control structures:

- Avon Dam
- Bendeela Pondage
- Broughton Pass Weir
- Cataract Dam
- Cordeaux Dam
- Fitzroy Falls Dam
- Glenquarry Cut Control Structure
- Greaves Creek Dam
- Kangaroo Pipeline Control Structure
- Lake Medlow Dam
- Lower Cascade Dam (No. 2)
- Middle Cascade Dam (No. 1)
- Nepean Dam
- Pheasants Nest Weir
- Prospect Dam
- Upper Cascade Dam (No. 3)
- Upper Cordeaux 2 Dam
- Warragamba Dam
- Wingecarribee Dam
- Woronora Dam

The Update Operations & Maintenance Manuals Process (CD2021/119, v3) sets out the process for updating existing O&M manuals and ensures quality control and stakeholder involvement in development and management of the documents. Develop New Operations & Maintenance (O&M) Manual (CD2024/293) sets out the process for creating new O&M manuals. WaterNSW has a consistent structure for the dam site O&M manuals. The O&M manuals for Oberon Dam (CD2021/151, v3), Middle Cascade Dam (No. 1) (CD2002/7, v4), Lower Cascade Dam (No.2) (CD2006/83, v4), Upper Cascade Dam (No. 3) (CD2002/8, v4), Warragamba Dam (CD2004/126, v5), and Prospect Dam (CD2001/115, v5) were provided as evidence. Section 2 of the O&M manuals has Water Operations Procedures. Water Quality is a specific section (Section 2.8) in the O&M manuals.

To negotiate and record operational changes, WaterNSW uses a Notification of Change to System Operations (NOCTSO) process. This process describes the proposed change, reason, and water quality implications.

### Operational monitoring

The actions under the ADWG Framework for this component are:

- Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.
- Document monitoring protocols into an operational monitoring plan.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

We consider CCP monitoring under element 3.

*Findings and supporting information related to this component are provided below.*

WaterNSW's *Water Monitoring Program Manual* (CD2011/179, v7) includes a section on operational monitoring (Section 2.3 and 2.4). The *Water Quality Data Review and Reporting Procedure* (CD2012/130, v7) sets out the process for undertaking the daily data review and preparing customer reports, which include the prognosis and recommended actions.

### Corrective action

The actions under the ADWG Framework for this component are:

- Establish and document procedures for corrective action to control excursions in operational parameters.
- Establish rapid communication systems to deal with unexpected events.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. Aspects of non-material non-compliance for CCP corrective actions are considered under element 3 for this clause.

*Findings and supporting information related to this component are provided below.*

WaterNSW has documented corrective actions in tables for each critical and operational control point (CD2021/128) and in the *Water Quality Incident Response Protocol* (CD2004/183, v4). Inconsistencies in the corrective actions are considered under element 3 for this clause.

The *Water Quality Incident Response Protocol* sets out thresholds for notification. The *Water Quality Contacts List* (D2013/94543) contains contact details for key personnel involved in water quality from WaterNSW and relevant agencies across Greater Sydney including Sydney Water, direct contacts for their contractors operating the filtration plants, Councils who are raw water customers, and NSW Health.

Modelpedia documents that the NOCTSO can be utilised as a corrective action.

### Equipment capability and maintenance

The actions under the ADWG Framework for this component are:

- Ensure that equipment performs adequately and provides sufficient flexibility and process control.
- Establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*



Modelpedia records that WaterNSW:

- Maintains a Strategic Asset Management Plan.
- Uses Asset Class Standards to define requirements, risks and criticalities for different categories of assets.
- Establishes maintenance frequencies for all asset types that are based on asset object criticality ratings (increasing criticality from 1 to 5).
- Schedules maintenance activities at the specified frequencies using the Enterprise Asset Management System (EAMS) which enables tracking of preventive and corrective maintenance orders.

Modelpedia notes the requirement for WaterNSW to establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.

*Other observations related to this component are provided below.*

WaterNSW noted that asset criticality ratings are a mandatory requirement for any new asset added to the asset register and are recorded in EAMS in accordance with the Asset Criticality Assessment Procedure (CD2015/331, v3). The Asset Criticality Assessment Procedure requires a review of asset criticality ratings when changes occur that may affect the criticality of an asset, or at 2 yearly intervals. Although evidence was provided demonstrating the EAMS hierarchy (D2023/79664), WaterNSW noted that no criticality assessments have taken place since the deployment of EAMS in ~2020. WaterNSW advised that a comprehensive review of the asset criticality scores is currently being developed with an anticipated initiation date of January 2025, and that a comprehensive update of the criticality procedure is currently in development. Our findings on the asset management system are discussed in clause 5.1.

### **Materials and chemicals**

The actions under the ADWG Framework for this component are:

- Ensure that only approved materials and chemicals are used.
- Establish documented procedures for evaluating chemicals, materials and suppliers.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia has common items for this action. It records that WaterNSW conducts risk assessments for any projects or activities that may involve work in contact with drinking water or raw water to be supplied for treatment as drinking water. *The Materials and Chemicals in Contact with Drinking Water Procedure* (CD2019/36, v4) was provided. This procedure provides guidance on specific activities where materials or chemicals must be managed to protect water quality. The WaterNSW Procurement Framework requires any high-risk procurement activities to be referred to the Water Quality Services team for review. High risk procurement is identified by completion of a procurement risk questionnaire in the WaterNSW eProcurement Portal, Spendwise. The questionnaire screens for potential risk in the proposed procurement including works on or near drinking water supplies or including chemicals that may come into contact with drinking water. A screenshot of the Spendwise procurement risk assessment questionnaire (IM2024/1878) was provided. A training module has also been developed to provide guidance to staff in this procedure. This module is reviewed under element 7.

Modelpedia requires that records are maintained of stored chemicals including Safety Data Sheets, application and usage instructions, quantities stored on site, storage method, and life and supplier details, and in to specify quality assurance standards in contracts for supply of chemicals.

## Element 5 Verification of drinking water quality

Aspects of non-material non-compliance associated with this element have been considered under element 3 in this clause. Shortcomings associated with aspects of this element have been considered under element 6 in this clause. Other than these areas, WaterNSW has maintained a WQMS consistent with the requirements of the ADWG for this element.

### Drinking water quality monitoring

The actions under the ADWG Framework for this component are:

- Determine the characteristics to be monitored in the distribution system and in water as supplied to the consumer.
- Establish and document a sampling plan for each characteristic, including the location and frequency of sampling.
- Ensure monitoring data are representative and reliable.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The water sampling program for the Declared Catchments is documented in the *Water Monitoring Program Manual* (CD2011/179, v7). The program sets out the real time and grab sample monitoring for the systems and documents the characteristics to be monitored, the monitoring location and the monitoring frequency. The program includes parameters important for short term decisions and understanding long term changes in the catchment.

The *Water Quality Data Review and Reporting Procedure* (CD2012/130, v7) outlines the process for reviewing, analysing and reporting on water quality data. This procedure outlines the appropriate steps to prepare routine water quality reports.

The *Water Quality Incident Response Protocol* (CD2004/183, v4) relates to corrective actions (see element 6).

### Customer satisfaction

The actions under the ADWG Framework for this component are:

- Establish a consumer complaint and response program, including appropriate training of employees.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The *Customer Service Charter* sets out WaterNSW's approach to customer contact. The *Feedback Compliments and Complaints Policy* (CD2007/13[v6]) sets out WaterNSW's commitment to customer complaint handling. Customer feedback and complaints are managed in accordance with the *Complaints and Compliments Handling Procedure* (CD2007/13, v6).

Modelpedia notes that WaterNSW has a customer enquiries phone number and that the WaterNSW website has a description of the feedback and complaints policy and a link to the customer feedback and complaints form. This was evidenced on the WaterNSW website (<https://www.watarnsw.com.au/customer-services/help-and-support/feedback-and-complaints>).

WaterNSW staff who deal regularly and directly with customers are provided with compliments and complaints management training via the MyLearning platform.

Details of complaints are provided to the Joint Operational Group meetings. The various Raw Water Supply Protocols describe operational arrangements for meeting terms of the agreement and provide mechanisms for resolving issues to the customer's satisfaction.

In the declared catchments, WaterNSW uses the raw water supply agreements with customers and the Raw Water Supply Protocols with Sydney Water (CD2007/2, v3) to meet the requirements of this action:

- Raw Water Supply Agreement – Sydney Water (D2013/101721).
- Raw Water Supply Agreement Protocol – Shoalhaven City Council (CD2013/16, v1).
- Raw Water Supply Agreement – Wingecarribee Shire Council (D2020/080599).
- Goulburn Mulwaree Supply Agreement (D2021/22294).

### **Short-term evaluation of results**

The actions under the ADWG Framework for this component are:

- Establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction.
- Develop reporting mechanisms internally, and externally, where required.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Data review and reporting requirements are contained in the Water Monitoring Program (CD2011/179, v7) and Water Quality Data Review and Reporting Procedure (CD2012/130, v7).

Modelpedia records that daily water quality monitoring and monthly dashboard reports to the Executive and Board Committee meet this requirement, supported by the *Water Quality Data Review and Reporting Procedure* (CD2012/130, v7).

The annual Water Quality Monitoring Report is submitted to IPART and published on the WaterNSW website.

### **Corrective action**

The actions under the ADWG Framework for this component are:

- Establish and document procedures for corrective action in response to non-conformance or consumer feedback.
- Establish rapid communication systems to deal with unexpected events.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. Non-material non-compliances associated with aspects of this component are considered in element 3 of this clause.

Additional mechanisms for corrective actions were discussed in element 4.

*Findings and supporting information related to this component are provided below.*

Corrective actions are noted in CCP documents (CD2021/128, v1), and the Water Quality Incident Response Protocol (CD2004/183, v4) provides guidance on required corrective actions and investigations, with water quality operational issues recorded in the Risk Assurance and Compliance System (RACS) in accordance with this protocol.



## Element 6 Management of incidents and emergencies

Aspects of non-material non-compliance associated with this element have been considered under element 3 of this clause.

We identified shortcomings in the maintenance of a WQMS consistent with the requirements of the ADWG for this element. While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

### Communication

The actions under the ADWG Framework for this component are:

- Define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and businesses.
- Develop a public and media communications strategy.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. Shortcomings associated with aspects of this component are considered in element 1 of this clause.

*Findings related to shortcomings for this component are outlined below.*

WaterNSW maintains a Water Quality Contact List (see shortcomings associated with this in element 1 of this clause).

*Findings and supporting information related to this component are provided below.*

Communication protocols and guidelines are jointly developed by WaterNSW, Sydney Water and NSW Health to ensure consistent messaging when responding to identified potential water quality incidents (D2019/26963). The *Joint Communication Protocol* include agreed messaging, responsibilities for the issuing of communications, and timing and approval processes for conserve water notice, boil water, do not consume and do not use water alerts. The *Joint Communication Protocol* includes media statements and guidance, and outlines stakeholder communication strategies including Ministerial briefings, the role of the NSW Health Water Expert Panel, and customer communications during incidents. The *Joint Communication Protocol* also documents that stakeholder mapping by the communications team within the ECC will identify all other stakeholders with communication needs.

WaterNSW and Sydney Water have established communication and incident management protocols in Section 3.1 and 3.2 of the *Raw Water Supply Protocols* (CD2007/2[v3]). The *Raw Water Supply Protocols* include references to WaterNSW's *Water Quality Incident Response Protocol* (CD2004/183[v4]), which documents communication protocols in Section 4.2.

Additional communication guidelines are provided in the *WaterNSW Incident Management Procedure* (CD2022/72).

### Incident and emergency response protocols

The actions under the ADWG Framework for this component are:

- Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.
- Train employees and regularly test emergency response plans.
- Investigate any incidents or emergencies and revise protocols as necessary.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for shortcomings associated with:

- Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.

*Findings related to shortcomings for this component are outlined below.*

The *Raw Water Supply Agreement* sets out the raw water quality standards for each Sydney Water WFP. WaterNSW advised that any exceptions to the agreed targets are managed in accordance with the Water Quality Incident Response Protocol (CD2004/183[v4]). There are inconsistencies in parts of the water quality parameters across the two documents (e.g. turbidity ranges and notification triggers for Illawarra WFP). This is further discussed in clause 3.2.1.

*Other findings and supporting information related to this component are provided below.*

WaterNSW has an overarching *Incident Management Procedure* (CD2022/72) which determines levels of incidents based on the capacity and resources required to respond. Subject specific procedures (in the case of water quality, the *Water Quality Incident Response Protocol* (CD2004/183[v4])) contain details on notifications and responses.

The *Incident Management Procedure* (CD2022/72) is aligned to the five fundamental principles of the Australian Inter-Service Incident Management System (AIIMS) 2017:

- Flexibility
- Management by objectives
- Functional management
- Unit of command
- Span of control.

The AIIMS approach is an appropriate framework for an incident management procedure. The procedure sets out the incident classifications:

- Level 1 (incident)
- Level 2 (serious incident, including the establishment of an incident management team)
- Level 3 (crisis, including the establishment of an IMT and CMT).

The *Water Quality Incident Response Protocol* (CD2004/183[v4]) sets out water quality incident classifications:

- Alert
- Level 1 (minor incident)
- Level 1 (significant incident)
- Level 2 (major incident, including activating the IMT/CMT if required)
- Level 3 (crisis, including activating the IMT/CMT if required)).

Modelpedia documents contingency plans for likely incidents in the Declared Catchment:

- Contingency Plan Warragamba Algae – (D2016/92951)
- Contingency Plan Warragamba Rain – (D2016/39701)
- Heavy Rainfall Upper Nepean and Woronora Response Plan – (D2019/133673)
- Bushfire Management Framework – (CD2021/46)

Modelpedia documents that WaterNSW delivers water quality incident management training to staff members identified as potentially being involved in responding to water quality incidents, and that WaterNSW Hold water quality incident scenario exercises to test staff preparedness and adherence to response procedures. Section 2.4 of the *Water Quality Incident Response Protocol* (CD2004/183[v4]) documents that staff members are given the opportunity to participate in regular scenario exercises to



maintain familiarity with this protocol, and that annual scenario exercises involving water quality incidents are conducted jointly with NSW Health and Sydney Water.

Modelpedia documents that WaterNSW holds hot debriefs at the end of an incident and prior to standing down incident teams to capture immediate learnings. These are supplemented by formal debriefs after the end of major incidents, and learnings are captured in debrief reports. Incidents records in RACS are closed once the incident has closed. Section 4.3 of the *Incident Management Procedure* (CD2022/72) documents that members of the IMT, incident response and other support teams will, where possible, participate in a formal incident debrief within two weeks of the incident being declared closed by the incident controller.

Modelpedia records the following processes to support the requirements of this action:

- Incident Management – 2022 – Incident Debrief Report (CD2022/80)
- RACS – Reporting an Incident – How to Guide (CD2019/136)
- Incident Investigation Form – Level 1 (CD2017/73)
- Incident Investigation Form – Level 2 ICAM (CD2017/74).

These processes and timings are appropriate to meet the requirements of this component.

## **Element 7 Employee awareness and training**

We identified shortcomings in the maintenance of a WQMS consistent with the requirements of the ADWG for this element. While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

### **Employee awareness and involvement**

The actions under the ADWG Framework for this component are:

- Develop mechanisms and communication procedures to increase employees' awareness of and participation in drinking water quality management.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW provided evidence that water quality awareness training is mandatory for all WaterNSW staff with refreshers to be conducted every two years. Modelpedia notes that the training module includes a description of the water quality policy, along with its application, responsibilities and where to find it. This process is consistent with the ADWG Framework.

WaterNSW provided evidence that processes for awareness of water quality among staff could be further improved, and that WaterNSW had included an item in the draft 2024-25 WQMS Assurance Plan (D2017/87415) to address this.

### **Employee training**

The actions under the ADWG Framework for this component are:

- Ensure that employees, including contractors, maintain the appropriate experience and qualifications.
- Identify training needs and ensure resources are available to support training programs.
- Document training and maintain records of all employee training.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for shortcomings associated with the requirements to:



- Ensure that employees, including contractors, maintain the appropriate experience and qualifications.
- Identify training needs and ensure resources are available to support training programs.

*Findings related to the minor shortcoming are outlined below.*

Modelpedia records that water quality awareness information is also included in the Asset Maintenance Awareness module for contractors. WaterNSW advised that employees and independent contractors are handled the same way in WaterNSW's training and awareness reporting system (Competency Dashboard), and that it was not currently possible to identify and separate employees from contractors in the system (IM2024/1895). Training performance is reported to senior management for combined employees and contractors as per the KPI definition in the WQMS Objectives and Targets. WaterNSW noted that there may be scope to incorporate improved data resolution in the Competency Dashboard, but that this still needs to be investigated to determine if this is possible. WaterNSW, however, advised that they do not yet have a process to ensure that third party contractors have appropriate water quality awareness, training, qualifications and experience as required under the ADWG employee training component. The ADWG states that contractors (which includes contractors for construction, operations and maintenance of bulk water, treatment and distribution systems, and sampling and analytical work) need to have the same awareness, training and culture as the organisation's employees. We consider that there is a low residual risk associated with the shortcoming for third party contractors, as the shortcoming is mitigated by WaterNSW employees providing a level of oversight during activities and works undertaken by third party contractors.

*Other findings and supporting information related to this component are provided below.*

Water quality related training is primarily delivered via WaterNSW's eLearning system accessed via the intranet. Modelpedia notes that the following water quality related e-learning modules are available:

- Water Quality Awareness
- Water Quality Incident Response
- Materials and Chemicals in contact with Drinking Water

Modelpedia documents mandatory training in *Water Quality Incident Response* and *Materials and Chemicals in Contact with Drinking Water* for identified roles. All staff can access the three modules regardless of their role as required.

WaterNSW maintains a mandatory skills training matrix which identifies required training for each role, current competency and date when retraining is required.

The *Material and Chemicals in Contact with Drinking Water* eLearning module (D2019/48488) and *Water Quality Incident Response* eLearning module (D2018/77988) were reviewed. We are satisfied with these training modules.

The ADWG (NHMRC 2011 Version 3.8) was updated in September 2022 with guidance on microbial health-based targets (HBTs). HBTs provide an assessment of enteric pathogen risks in the source water and inform appropriate risk management measures (barriers). This assessment and preventive measures support elements 2 and 3 of the ADWG. The ADWG states that shortfalls in achieving required treatment targets to manage source water pathogen risks should be used to prioritise improvements. Although it is acknowledged that the technical detail of HBTs do not need to be understood as part of water quality awareness training, it is, however, imperative that all WaterNSW staff are aware of the potential inadequacy of existing water treatment processes to meet HBTs, emphasising the importance of ongoing source water protection. Enhancing the existing water quality awareness training to include brief explanation of the importance of HBTs is therefore noted as an opportunity for improvement.

## **Element 8 Community involvement and awareness**

WaterNSW provided evidence to demonstrate maintenance of a WQMS consistent with the requirements of the ADWG Framework for this element.



## Community consultation

The actions under the ADWG Framework for this component are:

- Assess requirements for effective community involvement.
- Develop a comprehensive strategy for community consultation.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia records the following activities that are common to both the declared and non-declared catchment:

- Deliver Education Program including school excursions
- Operate Warragamba Dam Visitor Centre
- Maintain Website and social media
- Conduct targeted community consultation (for major projects). This is supported by long form (D2018/78477) and short form (2019/29701) planning templates.

The Stakeholder Engagement unit assesses opportunities for community involvement on project and program work by maintaining oversight of WaterNSW projects. Project teams populate a Communication and Engagement Brief (D2023/079992) that informs of relevant details of upcoming work and potential community engagement requirements or stakeholder impacts.

WaterNSW provided evidence that WaterNSW consider a range of factors before determining levels of community involvement and whether a Community and Stakeholder Engagement Plan (CSEP) is required, including assessments of project background/context, project objectives, project deliverables, project timeframe program, scale of work, stakeholder mapping and analysis, cost, stakeholder(s) affected, media opportunity, scope of community/stakeholder influence/involvement, reputational risk and mitigations. These factors inform whether a CSEP Long Form Template or a CSEP Short Form Template is required.

## Communication

The actions under the ADWG Framework for this component are:

- Develop an active two-way communication program to inform consumers and promote awareness of drinking water quality issues.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia records the following processes that are common for the declared and non-declared catchment (Table 3-5).

**Table 3-5 WaterNSW communication programs**

Aspect	Modelpedia description
Maintain website and social media	Customer newsletters are issued on the WaterNSW website. Recent newsletters are available on the website link. Regular updates are provided on social media channels.
Monitor customer feedback	Complaints are recorded, investigated and resolved or escalated in accordance with the Customer Complaints and Compliments Handling Procedure. Customer help desk staff are trained in categorising and investigating complaints. Any complaints relating to water quality are referred to the Water Quality Services team.  The document references are: <ul style="list-style-type: none"><li>• Customer Strategy (D2016/133508)</li><li>• Complaints and Compliments Handling Procedure (CD2007/13)</li></ul>
Hold customer interface meetings	Meetings are held with all major customers.
Host Customer Advisory Groups	Customer Advisory Group meetings are held to provide a forum for customer consultation on water delivery mechanisms, asset management, pricing and levels of service. WaterNSW has a Customer Advisory Groups Charter (CD2015/281).

## Element 9 Research and development

WaterNSW provided evidence to demonstrate maintenance of a WQMS consistent with the requirements of the ADWG Framework for this element.

### *Investigative studies and research monitoring*

The actions under the ADWG Framework for this component are:

- Establish programs to increase understanding of the water supply system.
- Use information to improve management of the water supply system.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia states that investigative monitoring is undertaken to obtain more information about an incident or anomalous water quality, or to investigate an identified emerging risk (Section 2.3.3 of the *Water Monitoring Program Manual* CD2011/179, v7). The 2021-2025 Science Program includes projects to address objectives under the two themes of Catchment Resilience and Integrated Water Management broken down into nine specific goals.

### *Validation of processes*

The actions under the ADWG Framework for this component are:

- Validate processes and procedures to ensure that they are effective in controlling hazards.
- Revalidate processes periodically or when variations in conditions occur.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia documents the following requirements:



- Process validation:
  - Validation is typically required when new treatment process or significant operational changes are made. This can include new treatment barriers, change to process units, capability or configuration, changes to operational targets and critical limits that can potentially impact barrier performance.
  - The validation process will be implemented to demonstrate the barrier is capable to reduce risk to acceptable level and that ongoing performance can be monitored.
  - The evidence required to validate a specific process depends on the nature of the process being validated.
  - Criteria utilised by WaterNSW for validation of key process steps are described under WaterNSW CCP tables (Validation of Critical Control Points table).
  - Before the implementation of new infrastructure/barriers related to the water supply system, the Water Quality Services Team should be engaged to determine the need for validation of processes and need for a targeted Catchment to Customer Risk Assessment.
  - The Water Quality Services Team will specify the nature of the evidence required to validate the process and how ongoing performance will be monitored.
- Revalidation of processes
  - The characteristics utilised by WaterNSW to ascertain ongoing performance of key processes are described under WaterNSW CCP tables (Validation of Critical Control Points table).
  - For any material changes to existing processes and procedures in the water supply system, the Water Quality Services Team should be engaged to determine the need for revalidation of processes and need for a targeted Catchment to Customer Risk Assessment.
  - The Water Quality Services Team will specify the nature of the evidence required to re-validate the process and how ongoing performance will be monitored.

### Design of equipment

The actions under the ADWG Framework for this component are:

- Validate the selection and design of new equipment and infrastructure to ensure continuing reliability.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The selection and design of equipment is in accordance with WaterNSW Asset Class Strategies and Technical Standards. Twenty-six Asset Class Strategies have been developed, covering all infrastructure assets, including water monitoring, land and catchment, buildings, and fleet assets. A sample of Asset Class Strategies were provided and reviewed (CD2019/225, CD2019/225, CD2019/226, CD2019/228, CD2020/49, CD2020/50, CD2020/51, CD2020/53, CD2020/58, CD2020/110, CD2021/1, CD2021/8, CD2021/44, CD2021/99, CD2022/70, CD2023/29). WaterNSW noted that all Asset Class Strategies have undergone a comprehensive review in the lead up to the Pricing Submission (and that final versions would be available from mid-October 2024 – i.e. outside of the audit period).

Modelpedia states WaterNSW has established an “Approval to Spend” process to ensure the business makes prudent, efficient and justifiable purchasing decisions). The design of new equipment or infrastructure involves consultation to identify and manage risks. Modelpedia notes that all asset changes must be managed using the Asset Change Request process and includes assessment of risks and identify possible water quality implications before changes are permitted. The Asset Change Management Procedure (CD2016/57, v3) requires project managers to demonstrate consultation to determine the impacts of any proposed changes. The “Spend Wise” procurement portal provides guidance on selecting approved suppliers and will direct any procurement proposals involving contact with drinking water to the Water

Quality Services team for review. WaterNSW has an Asset Change Request (ACR) procedure which ensures any proposed changes are adequately consulted and risks assessed prior to implementation. The Approval to Spend (ATS) procedure also ensures that risks are assessed prior to purchasing new technology.

Modelpedia includes the requirements to perform studies, tests and proving trials as part of assessments of the suitability of new equipment and infrastructure, as well as consultation with NSW Health during the commissioning phase prior to using new equipment or infrastructure which may impact on water quality. The Asset Investigations Manual (D2023/2226) sets out the WaterNSW requirements for such options investigations.

Additional aspects of asset management are provided under clause 5.1.2.

## **Element 10 Documentation and reporting**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### **Management of documentation and records**

The actions under the ADWG Framework for this component are:

- Document information pertinent to all aspects of drinking water quality management.
- Develop a document control system to ensure current versions are in use.
- Establish a records management system and ensure that employees are trained to fill out records.
- Periodically review documentation and revise as necessary.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework actions to:

- Document information pertinent to all aspects of drinking water quality management.
- Establish a records management system and ensure that employees are trained to fill out records.

*Findings related to non-material non-compliance for this component are outlined below.*

The ADWG states that appropriate documentation provides the foundation for the establishment and maintenance of effective drinking water quality management systems.

The inadequacies and inconsistencies that we found are discussed throughout the other elements for this clause, and contribute to our finding that WaterNSW has not documented pertinent information to all aspects of drinking water quality management. Additional inconsistencies regarding previous non-compliances relevant to this audit period are discussed in the review of previous recommendations (Recommendation 2023-02, Recommendation 2023-03, Recommendation 2023-04, Recommendation 2023-08, Recommendation 2023-09, Recommendation 2023-10).

Another inconsistency in maintaining a system that meets the requirements of the ADWG Framework, is that Modelpedia is silent on the training for completion of records (e.g. role-specific training and competency requirements for record keeping and reporting). In clause 2.1.3, we report on a number of instances where records and reports had not been completed appropriately.

We consider the system maintenance aspects of these finding to have a low residual risk in the audit period, as WaterNSW has demonstrated a multi-barrier approach to WQMS documentation, and other water quality training requirements are documented under element 7.

*Other findings and supporting information related to this component are provided below. Other findings and supporting information related to this component are provided below. OThe Controlled Documents*

Framework (CD2019/123) provides an overview of the controlled document process at WaterNSW. This Framework:

- Establishes the principles of document control
- Identifies document control processes and the standard they must meet to be effective as defined by the organisation.
- Sets out key roles and responsibilities.

Modelpedia records that all document updates are controlled in accordance with the Controlled Documents Framework (CD2019/123). This sets the minimum review frequency based on risk ranking.

ARK is WaterNSW's electronic document management system. Modelpedia documents that all WaterNSW staff will be trained to be General Users, which means they can add documents (such as emails, Word documents, Excel spreadsheets, images, sound files, etc.) into ARK. Training is developed by the Collaboration team and delivered during staff inductions.

Modelpedia documents that controlled documents have a scheduled review frequency based on risk. When a controlled document is scheduled for review the custodian requests a new version be released for review and once the review has been completed and approved, the new version is published to the intranet for the use of WaterNSW staff. The approach for reviewing and updating controlled documents is described in the Controlled Documents Framework (CD2019/123) and controlled documents processes.

Modelpedia documents that a list of controlled documents overdue for review is reported to the Executive each three months. The status of controlled documents can be viewed through the dashboard on the intranet.

## Reporting

The actions under the ADWG Framework for this component are:

- Establish procedures for effective internal and external reporting.
- Produce an annual report to be made available to consumers, regulatory authorities and stakeholders.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

We found that not all the reporting requirements were documented under this component but were referred to elsewhere in Modelpedia.

Modelpedia records some of the reporting undertaken as part of the WQMS. Common reporting items are:

- Report to customers and stakeholders according to the Water Quality Data Review and Reporting Procedure (CD2012/130). This procedure details the report contents for:
  - Routine Water Quality Reports
  - Fish River Drinking Water Quality Report
- Produce event reports in case of heavy rainfall or inflows and provide updates for incidents under investigation (referenced in CD2012/130)
- Provide reports on catchment *Cryptosporidium* hazard status to inform consideration of public health risks during wet weather incidents (as per the Weekly Catchment *Cryptosporidium* Hazard Assessment D2016/117391)

Modelpedia also records that the Annual Water Quality Monitoring report is produced as an action for Greater Sydney.

There are other reports and reporting requirements that are not documented under this component. These include:



- Executive, Board subcommittee and Board Reporting
- Annual Catchment Management Report.

We observe that a single point of truth for documenting the reporting requirements reduces the potential for some reporting requirements being missed, which would reduce potential reputational or regulatory risks to WaterNSW.

## **Element 11 Evaluation and audit**

Non-material non-compliances associated with aspects of this element have been considered under element 10 and element 12 in this clause. Other than these areas, WaterNSW has maintained a WQMS consistent with the requirements of the ADWG for this element.

### **Long term evaluation of results**

The actions under the ADWG Framework for this component are:

- Collect and evaluate long-term data to assess performance and identify problems.
- Document and report results.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided sufficient evidence to demonstrate it has met the ADWG requirements to collect and evaluate long-term data to assess performance, identify problems, and document and report results.

Modelpedia documents the following activities and processes to meet the ADWG requirements:

- consideration of water quality trends in preparation for the Catchment to Customer (C2C) risk assessment
- water quality data review and reporting (CD2012/130)
- publishing Annual Water Quality Monitoring Reports on the WaterNSW website
- including a review of the previous 10 years' water quality data every second year in the Annual Water Quality Monitoring Reports (Declared Catchment only).

We consider these processes for long term data review meet the requirements of this component for the Declared Catchment.

### **Audit of drinking water quality management**

The actions under the ADWG Framework for this component are:

- Establish processes for internal and external audits.
- Document and communicate audit results.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. Non-material non-compliances associated with aspects of this component are considered in element 10 and element 12 of this clause.

*Findings and supporting information related to this component are provided below.*

Modelpedia documents that WaterNSW has developed a WQMS Audit Program which aligns to WaterNSW's 4 lines of defence model of which normal business activities and procedures are the first line, process health checks and system audits (in-house and external) are the second line, the Internal Audit Program is the third line and mandated external audits (IPART Operating Licence audits and



Catchment Audits) are the fourth line. Health checks are done by at least two staff members (or one to complete and a manager to check) and recommendations are agreed and included in the Water Quality Improvement Plan.

Modelpedia documents that Process Health checks should be undertaken for high risk processes, but does not define what a high-risk process is. We have considered this further in element 10 and element 12 of this clause, and element 11 of clause 2.1.3.

The WQMS Assurance Program (D2017/87415) outlines that:

- For Process Health checks (second line of defence):
  - Process owners and business management system specialists maintain a program of audits and inspections for the purpose of ensuring compliance to procedure, contractual conditions, agreements, legislation, regulation, relevant industry codes, standards and other requirements.
  - The process owners and system specialists manage these audit and inspection programs and report quarterly to the relevant Executive Manager and annually to the relevant Board Committee.
  - The program is based on risk.
- For first line of defence activities:
  - Business activity owners and operators are responsible for maintaining effective controls by following procedures and processes on a daily basis and implementing corrective actions to address process and control deficiencies.

Modelpedia documents the following common process to meet the ADWG requirements:

- Conduct process health checks (WQMS Audit Program D2017/87415)
- Prepare Annual System Effectiveness and Health Check Report
- Report on recommendations from audits and health checks in Quarterly Performance and Trend Analysis reports.

## Element 12 Review and continual improvement

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### Review by senior executive

The actions under the ADWG Framework for this component are:

- Senior executive review of the effectiveness of the management system.
- Evaluate the need for change.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. We found the description of the process in Modelpedia required updating to reflect current practice, but this has not contributed to the non-compliant findings for this element. The obsolete references contribute to our findings under element 10.

*Findings and supporting information related to this component are provided below.*

The ADWG states that in order to ensure continual improvement, the highest levels of the organisation should maintain oversight of the effectiveness of the drinking water quality management system and evaluate needs for change.

Modelpedia records there are quarterly meetings of the Board Committee on Health, Water Quality and Catchment Protection during which the *Quarterly Water Quality Management System Trend Analysis reports* are reviewed, which considers the effectiveness of the Water Quality Management System. The Board Committee also considers the *Annual System Health Check*, which includes a review of targets and



outcomes and proposed targets and outcomes for the following year. The Board Committee is supported by a management committee comprising relevant management staff to review materials submitted to the Board Committee. We observe that Modelpedia has not been updated to reflect the change in Board Committee name to the Board Committee on Sustainability and Service Delivery.

Modelpedia also records that the full Board receives monthly Water Quality Dashboard reports and the Executive review all reports to be provided to the Board.

### *Drinking water quality management improvement plan*

The actions under the ADWG Framework for this component are:

- Develop a drinking water quality management improvement plan.
- Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets aspects of the ADWG Framework actions for this component, except for non-material non-compliances associated with the ADWG Framework actions to:

- Develop a drinking water quality management improvement plan.
- Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.

*Findings related to non-material non-compliance for this component are outlined below.*

The ADWG states that an improvement plan should be developed to address identified needs for full implementation of the drinking water quality management system, and that implementation of plans should be monitored to confirm that improvements have been made and are effective. Modelpedia is silent on how improvement actions are monitored for effectiveness. Without a system to monitor improvements and corrective actions for effectiveness, WaterNSW may not recognise if corrective actions were not adequate to appropriately control risks and if resources for water quality management and improvement are being effectively deployed.

Modelpedia does not describe the decision-making process for including or excluding actions identified from activities such as risk assessment findings, and water quality non-conformances. Without a consistent system for determining which improvement items are added to the improvement plan and tracked, there is a risk that actions needed for full implementation of the drinking water quality management system may not be progressed, and data used for reporting to the senior executive and Board on improvement plan progress is misaligned with actual activities.

*Other findings and supporting information related to this component are provided below.*

Modelpedia documents that:

- WaterNSW maintains a Water Quality Improvement Plan and reports progress on actions in the plan to the Executive and Board via quarterly trend analysis reports. Actions are allocated to staff via the Risk Assurance and Compliance System (RACS), which allows action recipients to annotate progressive action status and completion.
- Action 12.2.1 in Modelpedia is to Update the Water Quality Improvement Plan based on risk assessment findings, water quality non-conformance, critical limit exceedance, incident and emergency reports, and audit outcomes. There is an in-built process documented in Modelpedia to Add Recommendations to Water Quality Improvement Plan. This is a step-by step process for how information is entered and tracked to meet this component.

Modelpedia states that WaterNSW has a process for communicating, reviewing, recording and reporting (to all employees) progress against the identified responsibilities for the actions identified within its drinking water quality management improvement plan including liaising with stakeholders where responsibilities for action lie outside the agency.



The two activities listed under this action are:

- Report on Water Quality Improvement Plan actions in Quarterly Water Quality Performance and Trend Analysis report
- Report to IPART on status of water quality improvement plan actions for each financial year via Annual Water Quality Management System report (as per the format in the Reporting Manual for the Operating Licence).

In clause 2.1.3 we discuss evidence that Modelpedia only references the water quality improvement plan, however we examined evidence that actions are held in multiple systems (e.g. JOG minutes).

## Recommendations

**Recommendation 2024/2.1.1 – 1:** By 30 September 2025, review and update the WQMS reporting processes to the Board and Regulators. The review should focus on ensuring the comprehensiveness, accuracy, assurance and timeliness of both regular and exception-based reporting. The updated process should include the following key elements:

- a) metric validity
- b) source data
- c) quality assurance (QA) process
- d) routine and exception-based reporting
- e) changes to metrics and targets
- f) CCP reporting and records management
- g) responsibilities and accountabilities for the above.

**Recommendation 2024/2.1.1 – 2:** By 30 June 2026, establish thresholds for acceptable numbers of controlled documents that are overdue for review.

**Recommendation 2024/2.1.1 – 3:** By 30 June 2026, update the process for how WaterNSW conducts water quality risk assessments, including the classification, review and assessment of those risks that were covered by the C2C but are now considered operational.

**Recommendation 2024/2.1.1 – 4:** By 31 December 2025, formalise the Modelpedia definition of high-risk activities associated with Process Health Checks, and update the WQMS assurance program to document that Process Health checks involve comprehensive and systematic evaluation of activities and processes to confirm that objectives are being met (aligned to the ADWG), rather than business as usual activities.

## Opportunities for improvement

**OFI 2024/2.1.1 – 1:** Address the discrepancy in the required frequency of reviewing the WaterNSW Water Quality Contact List (D2013/94543) (6 monthly vs. annually) and implement reviews accordingly.

**OFI 2024/2.1.1 – 2:** Consider a provision in the supply agreements with raw water customers, other than Sydney Water, connected to the Warragamba-Prospect pipeline so that the owners ensure any new or prospective tenants are notified of the quality of water supplied.

**OFI 2024/2.1.1 – 3:** Update the Warragamba to Prospect supply schematic to show the raw water customers other than Sydney Water connected to the Warragamba-Prospect pipeline.

**OFI 2024/2.1.1 – 4:** Ensure that if the Environmental Impact Assessment for minor works template is used as a risk control plan for managing risks associated with materials and chemicals, that it includes a water quality specific risk assessment.

**OFI 2024/2.1.1 – 5:** Develop and implement a means to review and track the performance of internal water quality reporting (in terms of meeting the documented internal reporting deadlines, required contents, and required parameters).

**OFI 2024/2.1.1 – 6:** Review and update the Water Quality Monitoring Program (CD2011/179, v7) to ensure reference to current legislation and other formal requirements (e.g. remove reference to out-of-date advice on Total Coliforms).


**OFI 2024/2.1.1 – 7:** Update the WQMS to consolidate the reporting requirements under element 10.

**OFI 2024/2.1.1 – 8:** Develop a process to ensure that as supporting artifacts in Modelpedia are updated, the embedded processes are updated to align with the changes, or the duplication is removed to avoid confusion of requirements.

**OFI 2024/2.1.1 – 9:** Consider establishing and including a risk-based performance metric in the WQMS performance dashboard reporting to the Board (or alternate forum) on the proportion of controlled documents that are overdue for review.

## Clause 2.1.2

**Table 3-6 Clause 2.1.2 compliance grade**

Subclause	Requirement	Compliance grade
2.1.2	<p>With respect to Non-Declared Catchment Areas from which Water NSW Supplies water, Water NSW must maintain Water Quality Management Systems that are consistent with:</p> <p>a. in the case of water with the final end use as Drinking Water:</p> <p>i. a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW);</p> <p>ii. the Australian Drinking Water Guidelines; or</p> <p>iii. any other requirements as specified or approved by NSW Health or IPART,</p> <p>b. in the case of water that does not have a final end use as Drinking Water and that is not to be managed according to a Water Quality Management System that satisfies clause 2.1.2(a):</p> <p>i. the Australian Guidelines for Water Recycling; or</p> <p>ii. any other requirements as specified or approved by NSW Health or IPART.</p>	<p>Non-compliant (non-material)</p> 
<p><b>Risk</b></p> <p>Without a Water Quality Management System, the risk posed to public health from material non-compliance with this clause could be significant</p>		<p><b>Target for full compliance</b></p> <p>Evidence that a Water Quality Management System is maintained and kept up to date for the Non-Declared Catchment Areas, that it is consistent with the ADWG, or as specified by NSW Health or IPART.</p>

### Summary of reasons for grade

We have assigned WaterNSW a non-compliant (non-material) grade for clause 2.1.2.

In the statement of compliance 2024 letter to IPART (dated 27 August 2024), WaterNSW reported ongoing non-compliance for this clause until all recommendations from the 2022-2023 Operating Licence Audit are complete.

As discussed in clause 2.1.1, WaterNSW utilises Modelpedia for its WQMS. In auditing clause 2.1.2, we considered the common items and those for the Fish River Water Supply Scheme (FRWSS). WaterNSW has documented activities for each action within the ADWG Framework.

In our sampling during this audit, we found the WQMS did not address all the required aspects of each action of the ADWG Framework for the Non-Declared Catchment.













Modelpedia has non-material inconsistencies, inadequacies, and deficiencies and does not fully address the requirements of the Australian Drinking Water Guidelines. This was previously identified in the 2022-23 Operational Licence Audit, and several of the recommendations to address the non-compliance remain open and overdue.

In undertaking this audit, we have also found further non-material non-compliances in addition to the non-material non-compliances previously identified in the 2022-23 Operational Licence Audit.

We consider that, when taken as a whole, these findings warrant a non-compliant (non-material) grade. We have graded this clause as non-compliant (non-material), as we consider there to be a low residual risk of the non-compliance causing WaterNSW to fail to meet the public health objectives under the licence, given the multiple barrier approach that WaterNSW uses as required under the ADWG.

For context, we have provided an indication of the audit findings at the ADWG element level for this clause in Table 3-7. In some cases, although the element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies and inadequacies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

**Table 3-7 Overview of audit findings at the ADWG element level for clause 2.1.2**

ADWG element	Finding (at the element level)	Notes
1 Commitment to drinking water quality management	Compliant (minor shortcomings) 	While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.
2 Assessment of the drinking water supply system	Non-compliant (non-material) 	
3 Preventive measures for drinking water quality management	Non-compliant (non-material) 	
4 Operational procedures and process control	Compliant 	
5 Verification of drinking water quality	Compliant 	
6 Management of incidents and emergencies	Compliant 	Shortcomings associated with this element have been considered under element 1 in this clause.
7 Employee awareness and training	Compliant (minor shortcomings) 	While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.
8 Community involvement and awareness	Compliant 	
9 Research and development	Non-compliant (non-material) 	
10 Documentation and reporting	Non-compliant (non-material) 	
11 Evaluation and audit	Non-compliant (non-material) 	
12 Review and continual improvement	Non-compliant (non-material) 	

Both deficiencies (Table 3-8) and shortcomings (Table 3-9) have been identified for this clause.

**Table 3-8 Specific examples of WQMS deficiencies leading to the non-compliant (non-material) findings for the Non-Declared Catchment**

Element	Aspect	Findings
2	Risk assessment process	See clause 2.1.1
3	CCP change management	See clause 2.1.1
9	Investigative programs	Modelpedia does not document how investigative programs for the FRWSS are developed and implemented.

Element	Aspect	Findings
<b>1 and 9</b>	Research and development	In addition to the licence requirements to meet this element, WaterNSW has an obligation under the Public Health Regulation 2022 (NSW) to include information in their WQMS regarding research and development carried out in relation to maintaining or improving the quality of drinking water, including a list of previous water quality studies and plans for future studies. Modelpedia does not fully meet this requirement.
<b>10</b>	Records and documentation	See clause 2.1.1
<b>11</b>	Long term evaluation of results	Modelpedia does not specify that the FRWSS review must include long term trend analysis.
<b>3, 11 and 12</b>	Improvement actions	See clause 2.1.1

**Table 3-9 Specific examples of WQMS shortcomings for the Non-Declared Catchment**

Element	Aspect	Finding
<b>1, 6, 10</b>	Stakeholders, communication and documentation	See clause 2.1.1
<b>2</b>	Risk assessment	See clause 2.1.1
<b>7</b>	Training	See clause 2.1.1

## Discussion and notes

Modelpedia and supporting WQMS documents are generally aligned with the 12 elements of the ADWG Framework. The WQMS is supported by documents and processes that apply across the organisation as well as processes that may be specific to the Declared or Non-Declared Catchment. Modelpedia contains links to many of the supporting documents and processes. We were provided external access to Modelpedia, which did not have access to the linked documentation. WaterNSW provided specific supporting documents and processes linked in Modelpedia as evidence.

Modelpedia is an effective tool for documenting the WQMS.

The audit scope was elements 1 to 12 of the ADWG Framework.

## Element 1 Commitment to drinking water quality management

We identified shortcomings in the maintenance of a WQMS consistent with the requirements of the ADWG for this element. While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

### Drinking water quality policy

The actions under the ADWG Framework for this component are:

- Formulate a drinking water quality policy, endorsed by senior executive, to be implemented throughout the organisation
- Ensure that the policy is visible and is communicated, understood and implemented by employees.

WaterNSW has provided sufficient evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia records common items for this action. See the discussion in clause 2.1.1 for the evidence we considered to make this finding.

### **Regulatory and formal requirements**

The actions under the ADWG Framework for this component are:

- Identify and document all relevant regulatory and formal requirements.
- Ensure responsibilities are understood and communicated to employees.
- Review requirements periodically to reflect any changes.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia records common items for this action. See the discussion in clause 2.1.1 for the evidence we considered to make this finding.

### **Engaging stakeholders**

The actions under the ADWG Framework for this component are:

- Identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier.
- Develop appropriate mechanisms and documentation for stakeholder commitment and involvement.
- Regularly update the list of relevant agencies

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for the following shortcoming:

- Regularly update the list of relevant agencies

*Findings related to the minor shortcoming for this component are outlined below.*

Modelpedia records common items for this action. See the discussion in clause 2.1.1 for the evidence we considered to make this finding.

*Other findings and supporting information related to this component are provided below.*

The contact list includes relevant stakeholders for the FRWSS. As well as internal stakeholders, external stakeholders included individuals from:

- Lithgow City Council
- Oberon City Council
- Nepean Blue Mountains Public Health Unit.

WaterNSW has a Memorandum of Understanding (MoU) with NSW Health (which is required under the Water NSW Act s21(2) and Operating Licence clause 6.13). The MoU is current and located on the WaterNSW website.

WaterNSW has established the following forums to engage with their stakeholders:

- A Joint Operational Group with the Nepean Blue Mountains Local Health Department, Oberon City Council and Lithgow City Council to discuss water quality performance updates, water quality improvement projects, and C2C Risk. Modelpedia records these are usually held bi-monthly.



- FRWSS Operational Forum with WaterNSW stakeholders, Oberon City Council and Lithgow City Council to discuss water quality, operations, outages, asset projects, maintenance and feedback from councils. Modelpedia records these are scheduled monthly.

## Element 2 Assessment of the drinking water supply system

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### Water supply system analysis

The actions under the ADWG Framework for this component are:

- Assemble a team with appropriate knowledge and expertise.
- Construct a flow diagram of the water supply system from catchment to consumer.
- Assemble pertinent information and document key characteristics of the water supply system to be considered.
- Periodically review the water supply system analysis.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW's risk assessment methodology is set out in Conduct Catchment-to-Customer (C2C) Risk Assessment (CD2021/92[v4]), which includes:

- Identify issues for risk review
- Determine scope of risk review
- Identify risk review workshop members
- Compile relevant background information
- Circulate relevant material and data
- Hold risk review workshop
- Revise full risk register and produce draft risk assessment report
- Incorporate review group comments
- Finalise and upload risk register and risk assessment report
- Approve risk register

Modelpedia requires that:

- WaterNSW participants in C2C risk assessments require expertise in system operations, water treatment, water quality, public health and when required, assets/project management.
- NSW Health (Water Unit or relevant Local Health District) must be invited to participate in any water quality risk assessment.
- Membership may include Sydney Water Corporation, BOOT plant operators, or major customer councils or external subject matter experts as required.

We consider this consistent with ADWG requirements to assemble a team with appropriate knowledge and expertise.

WaterNSW maintains general schematic flow diagrams for the following water supply systems on Modelpedia:

- Fish River Supply



- Duckmaloi Water Filtration Plant

Modelpedia documents that the schematics outline all steps and processes, identify handover points and third-party assets, and that they also summarise the basic characteristics of each component, any characteristics that are unique to the system and key system components that are relevant to the management of water quality, such as source water, destratification systems, monitoring points, critical valves, Critical and Operational Control Points. This is consistent with the ADWG requirements.

### **Assessment of water quality data**

The actions under the ADWG Framework for this component are:

- Assemble historical data from source waters, treatment plants and finished water supplied to consumers (over time and following specific events).
- List and examine exceedances.
- Assess data using tools such as control charts and trends analysis to identify trends and potential problems.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

We have considered reporting of water quality monitoring further in element 5 and element 10 of this clause.

*Findings and supporting information related to this component are provided below.*

The *Water Quality Data Analysis and Reporting Procedure* (CD2012/130) outlines the process for reviewing, analysing and reporting on raw and treated water quality data. The *Water Quality Incident Response Protocol* (CD2004/183) documents that exceedances are logged in the Risk Assurance and Compliance System (RACS). Modelpedia outlines that quarterly water quality performance and trend analysis reports are prepared including review of CCP performance and any incidents, and that tools such as SCADA trends and SCARMS plots are used for routine reports and frequently during incidents or under heightened risk conditions and prior to conducting risk assessments.

### **Hazard identification and risk assessment**

The actions under the ADWG Framework for this component are:

- Define the approach and methodology to be used for hazard identification and risk assessment.
- Identify and document hazards, sources and hazardous events for each component of the water supply system.
- Estimate the level of risk for each identified hazard or hazardous event.
- Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.
- Determine significant risks and document priorities for risk management.
- Periodically review and update the hazard identification and risk assessment to incorporate any changes.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework action to:

- Evaluate the major sources of uncertainty associated with each hazard and hazardous event and consider actions to reduce uncertainty.

We also identified shortcomings with the maintenance of the WQMS related to the ADWG Framework action to:



- Define the approach and methodology to be used for hazard identification and risk assessment.

*Findings related to non-material non-compliance and shortcomings for this component are outlined below.*

The common activities for the component are discussed in clause 2.1.1. There are no specific activities for the FRWSS documented. See the discussion in clause 2.1.1 for the evidence we considered to make these findings.

### **Element 3 Preventive measures for drinking water quality management**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

#### **Preventive measures and multiple barriers**

The actions under the ADWG Framework for this component are:

- Identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk.
- Evaluate alternative or additional preventive measures where improvement is required.
- Document the preventive measures and strategies into a plan addressing each significant risk.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1. There are no specific activities for the FRWSS documented.

#### **Critical control points**

The actions under the ADWG Framework for this component are:

- Assess preventive measures from catchment to consumer to identify critical control points.
- Establish mechanisms for operational control.
- Document the critical control points, critical limits and target criteria.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework actions to:

- Establish mechanisms for operational control.
- Document the critical control points, critical limits and target criteria.

*Findings related to non-material non-compliance for this component are outlined below.*

Modelpedia and the supporting mechanisms for operational control do not document change management process to ensure that CCP alarms are reset to their original set points. This is discussed further in clause 2.1.1 and the progress review of Recommendation 2023-03 (clause 2.1.1).

*Other findings and supporting information related to this component are provided below.*

Critical control points for the FRWSS are documented in tables in the *Critical and Operational Control Points for Fish River Water Supply System* (CD2021/127). The identified critical control points for the scheme are:

- CCP 7: Oberon Valve Tower (selective abstraction to avoid Cyanobacterial toxins)



- CCP 8: Membrane filtration at Duckmaloi WFP
- CCP 9: Primary disinfection at Duckmaloi WFP Clear Water Tank
- CCP 10: Fluoridation at Duckmaloi Clear Water Tank
- CCP 11: Reservoir Integrity (of the Clear Water Tank at Duckmaloi WFP, Rydal, Cullen Bullen, Glen Davis Balancing Reservoirs).

The CCP tables list activities associated with the operational target, adjustment range and exceedance of the critical limit.

#### **Element 4 Operational procedure and process control**

WaterNSW provided evidence to demonstrate maintenance of a WQMS consistent with the requirements of the ADWG Framework for this element.

##### **Operational procedures**

The actions under the ADWG Framework for this component are:

- Identify procedures required for processes and activities from catchment to consumer, including microbial health-based targets.
- Document all procedures and compile into an operations manual.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia refers to three Operations and Maintenance Manuals for the Fish River Water Supply System (FRWSS):

- Operations and Maintenance Manual – Duckmaloi Water Treatment Plant (CD2021/107)
- Operations and Maintenance Manual – Oberon Dam (CD2021/151, v3)
- Operations and Maintenance Manual – Rydal Dam (CD2021/114)

A review of the Oberon Dam O&M Manual showed that the manual was last reviewed in April 2024 and is due for review in April 2025. The Manual includes *inter alia* a detailed description of the dam, water operations procedures including data reporting and flood operations procedures, structure operating procedures, structure maintenance procedures, dam safety and surveillance, site security and alarms and roles and responsibilities.

##### **Operational monitoring**

The actions under the ADWG Framework for this component are:

- Develop monitoring protocols for operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results.
- Document monitoring protocols into an operational monitoring plan.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has a process to report on the routine analysis of results (*Water Quality Data Review and Reporting Procedure* (CD2012/130), and this document notes that compliance against this procedure is

monitored through training, regular audits and KPI reporting. Opportunities for reporting assurance are covered under clause 2.1.3 element 5.

*The Critical and Operational Control Points for Fish River Water Supply System (CD2021/127)* presents both operational targets and critical limits for Oberon Dam and Duckmaloi Water Filtration Plant. For each OCP and CCP a description is provided of the hazard (e.g. overdosing of fluoride), measurement (e.g. daily measurement at clear water tank at specified sample point), control (e.g. fluoride dosing system), the associated alarm, a series of steps required to address any identified performance deficiencies (e.g. check flow rate), and the responsible person/s (e.g. maintenance officer). The document also includes steps to validate CCPs for Oberon Dam and Duckmaloi WFP and contains supplementary information including a checklist for CCP measurement/sensor failure/malfunction and a process for manual rechlorination of reservoirs.

Lists of applicable CCPs for the FRWSS were also provided as evidence (CD2021/127, v1).

WaterNSW's *Water Monitoring Program Manual* (CD2011/179, v7) includes a section on operational monitoring for the FRWSS. This section includes both online monitoring (**Table 3-10**) and daily operator grab samples.

**Table 3-10 Real time monitoring of Operational and Critical Control Points in the FRWSS**

Site/measure	SCADA point	CCP/OCP
Filtered water turbidity post membrane at Duckmaloi WFP	ATU3004	CCP 8
Chlorine residual in the clear water tank	ARC3001	CCP 9
Transmembrane pressure at Duckmaloi WFP	DPT1	OCP 8a

The grab sample monitoring documented to be undertaken by the operators are:

- Daily for turbidity, pH, free chlorine residual, true colour (340 nm) and total manganese at the WFP.
- Six days per week for turbidity, temperature, pH, free chlorine residual, total manganese and true colour (340nm) at Wallerawang.
- Weekly for turbidity, temperature, pH, free chlorine residual, total manganese and true colour (340nm) at the other handover sites (Rydal Reservoir, Wallerawang Meter, Cullen Bullen Reservoir, Lidsdale, Glen Davis, Lithgow, Portland).
- Modelpedia records that online monitoring via SCADA is documented in the operations and maintenance manual. We reviewed the Oberon Dam Operations and Maintenance Manual (CD2021/151, v3) and verified that this was included.

The Annual Water Monitoring Report (D2023/72127, D2023/79843) summarises the operational sampling program. For operational monitoring grab samples collected for the FRWSS, results are recorded in an Excel spreadsheet.

### Corrective action

The actions under the ADWG Framework for this component are:

- Establish and document procedures for corrective action to control excursions in operational parameters.
- Establish rapid communication systems to deal with unexpected events.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The Water Quality Incident Response Protocol (CD2004/183, v4) sets out the communication principles for water quality incidents. This includes triggers for Duckmaloi WFP supply to Lithgow area, stipulating triggers for alerts and incidents (considering minor, significant and major/crisis incidents).

The *Water Quality Contacts List* D2013/94543 contains contact details for key personnel involved in water quality from WaterNSW and agencies relevant to the FRWSS including Lithgow City, Oberon Council, and the Nepean Blue Mountains Public Health Unit.

Additionally, Modelpedia records common items for this action. See the discussion in clause 2.1.1 for additional evidence we considered to make this finding.

### **Equipment capability and maintenance**

The actions under the ADWG Framework for this component are:

- Ensure that equipment performs adequately and provides sufficient flexibility and process control.
- Establish a program for regular inspection and maintenance of all equipment, including monitoring equipment.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia includes common items for this component. See the discussion in clause 2.1.1 for the evidence we considered to make this finding.

### **Materials and chemicals**

The actions under the ADWG Framework for this component are:

- Ensure that only approved materials and chemicals are used.
- Establish documented procedures for evaluating chemicals, materials and suppliers.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia includes common items for this component. See the discussion in clause 2.1.1 for the evidence we considered to make this finding.

## **Element 5 Verification of drinking water quality**

WaterNSW provided evidence to demonstrate maintenance of a WQMS consistent with the requirements of the ADWG Framework for this element.

### **Drinking water quality monitoring**

The actions under the ADWG Framework for this component are:

- Determine the characteristics to be monitored in the distribution system and in water as supplied to the consumer.
- Establish and document a sampling plan for each characteristic, including the location and frequency of sampling.
- Ensure monitoring data are representative and reliable.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.



*Findings and supporting information related to this component are provided below.*

The verification sampling program for the FRWSS is documented in the *Water Monitoring Program Manual* (CD2011/179, v7). The program documents the characteristics to be monitored, the monitoring location and the monitoring frequency. There are weekly, monthly and annual testing suites.

### **Consumer satisfaction**

The actions under the ADWG Framework for this component are:

- Establish a consumer complaint and response program, including appropriate training of employees.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The WaterNSW website (<https://www.watarnsw.com.au/customer-services/help-and-support/customer-assistance#>) lists call options for the customer call centre:

- #1 Licensing
- #2 Metering
- #3 Temporary water trading and allocation
- #4 Billing and account enquiries
- #5 Order water or check account balance
- #6 Algal alerts and dam information
- #7 General enquiries

While WaterNSW has established processes such as the call centre that allows customers to contact WaterNSW to lodge a complaint, the WaterNSW website contains little information to support FRWSS customers with water quality complaints. This could result in under reporting of water quality complaints.

There is a Protocol (D2020/99743) in place between WaterNSW and Lithgow City Council for management of complaints. The protocol recognises the different system configurations and complaint ownership. Issues and complaints are also discussed at the Fish River JOG meetings.

### **Short-term evaluation of results**

The actions under the ADWG Framework for this component are:

- Establish procedures for the daily review of drinking water quality monitoring data and consumer satisfaction.
- Develop reporting mechanisms internally, and externally, where required.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The *Water Quality Data Review and Reporting Procedure* (CD2012/130, v7) outlines the process for reviewing, analysing and reporting on water quality data. This procedure outlines the appropriate steps to prepare routine water quality reports.

### **Corrective action**

The actions under the ADWG Framework for this component are:



- Establish and document procedures for corrective action in response to non-conformance or consumer feedback.
- Establish rapid communication systems to deal with unexpected events.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Corrective actions are noted in CCP document (CD2021/127, v1), and the Water Quality Incident Response Protocol (CD2004/183, v4) provides guidance on required corrective actions and investigations with water quality operational issues recorded the Risk Assurance and Compliance System (RACS) in accordance with this protocol.

Additional mechanisms for corrective actions were discussed in element 4.

## **Element 6 Management of incidents and emergencies**

WaterNSW provided evidence to demonstrate maintenance of a WQMS consistent with the requirements of the ADWG Framework for this element.

### **Communication**

The actions under the ADWG Framework for this component are:

- Define communication protocols with the involvement of relevant agencies and prepare a contact list of key people, agencies and businesses.
- Develop a public and media communications strategy.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. Shortcomings associated with aspects of this component are considered in element 1 of this clause.

*Findings related to shortcomings for this component are outlined below.*

WaterNSW maintains a Water Quality Contact List (see shortcomings associated with this in element 1 of this clause).

*Other findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1. There are no specific activities for the FRWSS documented.

The *Fish River Incident Management Plan* (CD2021/83[v2]) outlines some media and communications responsibilities. Additional communication guidelines are provided in the *WaterNSW Incident Management Procedure* (CD2022/72).

### **Incident and emergency response protocols**

The actions under the ADWG Framework for this component are:

- Define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies.
- Train employees and regularly test emergency response plans.
- Investigate any incidents or emergencies and revise protocols as necessary.



WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1.

Modelpedia documents that the *Fish River Incident Management Plan* (CD2021/83) and *Site Incident Response Handbook* (CD2019/180) for the Fish River Water Supply are updated annually.

## **Element 7 Employee awareness and training**

We identified shortcomings in the maintenance of a WQMS consistent with the requirements of the ADWG for this element. While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies across Modelpedia has contributed to the overall non-compliant (non-material) grade for this clause.

### **Employee awareness and involvement**

The actions under the ADWG Framework for this component are:

- Develop mechanisms and communication procedures to increase employees' awareness of and participation in drinking water quality management.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia records common items for this action. See the discussion in clause 2.1.1 for the evidence we considered to make this finding.

### **Employee training**

The actions under the ADWG Framework for this component are:

- Ensure that employees, including contractors, maintain the appropriate experience and qualifications.
- Identify training needs and ensure resources are available to support training programs.
- Document training and maintain records of all employee training.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for shortcomings associated with the requirements to:

- Ensure that employees, including contractors, maintain the appropriate experience and qualifications.
- Identify training needs and ensure resources are available to support training programs.

*Findings related to the minor shortcoming are outlined below.*

The shortcoming relates to the training of third-party contractors, which is discussed under clause 2.1.1.

*Other findings and supporting information related to this component are provided below.*

Modelpedia records that water quality awareness information is also included in the Asset Maintenance Awareness module for contractors.



In addition to the common training items recorded in Modelpedia (discussed under element 7 in clause 2.1.1), staff members in roles involved in operating the Duckmaloi Water Treatment Plant are required to attain Water Treatment Operator certification provided by the NSW Department of Planning, Industry and Environment (now by NSW Department of Climate Change, Energy, the Environment and Water) and the Fluoride Operators Certificate issued by NSW Health. These requirements are loaded into the mandatory training matrix for each relevant role.

## **Element 8 Community involvement and awareness**

WaterNSW provided evidence to demonstrate maintenance of a WQMS consistent with the requirements of the ADWG Framework for this element.

### **Community consultation**

The actions under the ADWG Framework for this component are:

- Assess requirements for effective community involvement.
- Develop a comprehensive strategy for community consultation.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia records common items for this component. See the discussion in clause 2.1.1.

### **Communication**

The actions under the ADWG Framework for this component are:

- Develop an active two-way communication program to inform consumers and promote awareness of drinking water quality issues.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia items that are recorded as common with the Declared Catchment are discussed under clause 2.1.1.

## **Element 9 Research and development**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### **Investigative studies and research monitoring**

The actions under the ADWG Framework for this component are:

- Establish programs to increase understanding of the water supply system.
- Use information to improve management of the water supply system.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets aspects of the ADWG Framework actions for this component, however non-material non-compliances are related to the ADWG Framework actions to:

- Establish programs to increase understanding of the water supply system.



- Use information to improve management of the water supply system.

*Findings related to non-material non-compliance for this component are outlined below.*

Modelpedia has an inconsistency with the ADWG Framework as Modelpedia does not document how investigative programs for the FRWSS are developed and implemented. The ADWG states that investigative studies are important to increase understanding of a water supply system, to identify and characterise potential hazards, and to fill gaps in knowledge. Without an investigative program for the FRWSS, there is a risk that WaterNSW do not characterise and identify emerging hazards and fill gaps in knowledge related to water quality. We consider the residual risk of this non-compliance to be low in the audit period, as WaterNSW has a program of investigation and research. We consider that without documentation on how investigative programs for the FRWSS are developed and implemented, there is the possibility that investigative studies and research activities specific to FRWSS may be missed from future programs.

In addition to the licence requirements to meet this element, WaterNSW has an obligation under the Public Health Regulation 2022 (NSW) to include information in their WQMS regarding research and development carried out in relation to maintaining or improving the quality of drinking water, including a list of previous water quality studies and plans for future studies. Modelpedia does not fully meet this requirement. We have provided commentary under element 1 of clause 2.1.3 regarding the understanding of regulatory obligations.

*Other findings and supporting information related to this component are provided below.*

Modelpedia records common items (discussed in clause 2.1.1) for this action including:

- Investigative monitoring through the *Water Monitoring Program Manual* (CD2011/179) which can then be used to improve the scheme management).
- Maintaining the Science Program.

Modelpedia notes that outcomes of investigative research for FRWSS are reported in the annual drinking water quality management system report and recommendations are added to the Water Quality Improvement Plan.

### **Validation of processes**

The actions under the ADWG Framework for this component are:

- Validate processes and procedures to ensure that they are effective in controlling hazards.
- Revalidate processes periodically or when variations in conditions occur.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

Modelpedia states that criteria utilised by WaterNSW for validation of key process steps are described under WaterNSW CCP tables (Validation of Critical Control Points table). We confirmed that the validation tables are presented in the Critical and Operational Control Points for Fish River Water Supply System (CD2021/127, v1).

### **Design of equipment**

The actions under the ADWG Framework for this component are:

- Validate the selection and design of new equipment and infrastructure to ensure continuing reliability.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

The requirements under this component are common with that described in clause 2.1.1, which we found was adequate. Additional asset management aspects of are provided under clause 5.1.2.

## **Element 10 Documentation and reporting**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### **Management of documentation and records**

The actions under the ADWG Framework for this component are:

- Document information pertinent to all aspects of drinking water quality management.
- Develop a document control system to ensure current versions are in use.
- Establish a records management system and ensure that employees are trained to fill out records.
- Periodically review documentation and revise as necessary.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework actions to:

- Document information pertinent to all aspects of drinking water quality management.
- Establish a records management system and ensure that employees are trained to fill out records.

*Findings related to non-material non-compliance for this component are outlined below.*

The inadequacies and inconsistencies that we found are discussed throughout the other elements for this clause, and contribute to our finding that WaterNSW has not documented pertinent information to all aspects of drinking water quality management. We have provided further commentary in clause 2.1.1.

*Other findings and supporting information related to this component are provided below.*

Modelpedia documents the requirements for the FRWSS to record daily operational data on the SharePoint site including comments where applicable for issues, responses and results of retesting.

We have provided further commentary for the common items in clause 2.1.1.

### **Reporting**

The actions under the ADWG Framework for this component are:

- Establish procedures for effective internal and external reporting.
- Produce an annual report to be made available to consumers, regulatory authorities and stakeholders.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component.

*Findings and supporting information related to this component are provided below.*

We found that not all the reporting requirements were documented under this component but were referred to elsewhere in Modelpedia.

The common activities for the component are discussed in clause 2.1.1.



Modelpedia documents the requirements for the FRWSS to produce an Annual Review of the Drinking Water Quality Management System and provide the report to Nepean Blue Mountains Local Health District.

## **Element 11 Evaluation and audit**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### **Long term evaluation of results**

The actions under the ADWG Framework for this component are:

- Collect and evaluate long-term data to assess performance and identify problems.
- Document and report results.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component, except for non-material non-compliances related to the ADWG Framework actions to:

- Collect and evaluate long-term data to assess performance and identify problems.

*Findings related to non-material non-compliance for this component are outlined below.*

Modelpedia records that WaterNSW is required to report on water quality trends in the annual review of the Drinking Water Quality Management System and that the report is to be provided to the Local Health District. Unlike the Declared Catchment, Modelpedia does not specify that the FRWSS review includes long term trend analysis.

The ADWG states that the systematic review of monitoring results over an extended period is needed to:

- assess overall performance against numerical guideline values, microbial health-based targets, regulatory requirements or agreed levels of service,
- identify emerging problems and trends, and
- assist in determining priorities for improving drinking water quality.

Without a system for long term trend analysis for FRWSS, there is a risk that WaterNSW do not identify emerging problems and trends, and do not effectively use data to inform priorities for improving drinking water quality. We consider the residual risk in the audit period to be low, as WaterNSW undertook a long-term review for FRWSS, as discussed under the progress review of Recommendation 2023-02 (clause 2.1.1 and 2.1.2).

*Findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1.

### **Audit of drinking water quality management**

The actions under the ADWG Framework for this component are:

- Establish processes for internal and external audits.
- Document and communicate audit results.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. Non-material non-compliances associated with aspects of this component are considered in element 10 and element 12 of this clause.

*Findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1. Modelpedia does not document any specific requirements for the FRWSS.

## **Element 12 Review and continual improvement**

We identified that WaterNSW were non-compliant (non-material) with the requirement to maintain a WQMS consistent with the requirements of the ADWG for this element.

### **Review by senior executive**

The actions under the ADWG Framework for this component are:

- Senior executive review of the effectiveness of the management system.
- Evaluate the need for change.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets the ADWG Framework actions for this component. We found the description of the process in Modelpedia required updating to reflect current practice, but this has not contributed to the non-compliant findings for this element. The obsolete references contribute to our findings under element 10.

*Findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1.

Modelpedia records that an *Annual Review of the Drinking Water Quality Management System* is undertaken for the FRWSS and the report is provided to the Nepean Blue Mountains Local Health District.

### **Drinking water quality management improvement plan**

The actions under the ADWG Framework for this component are:

- Develop a drinking water quality management improvement plan.
- Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.

WaterNSW has provided evidence to demonstrate it has maintained a system that meets aspects of the ADWG Framework actions for this component, however non-material non-compliances are associated with the ADWG Framework actions to:

- Develop a drinking water quality management improvement plan.
- Ensure that the plan is communicated and implemented, and that improvements are monitored for effectiveness.

*Findings related to non-material non-compliance for this component are outlined below.*

Modelpedia is silent on how improvement actions are monitored for effectiveness. Modelpedia also does not describe the decision-making process for including or excluding actions identified from activities such as risk assessment findings, and water quality non-conformances. We have provided further commentary in clause 2.1.1.

*Other findings and supporting information related to this component are provided below.*

The common activities for the component are discussed in clause 2.1.1. Modelpedia records no FRWSS specific requirements for this component.



**Recommendations**


There are no specific new recommendations for this clause. Recommendations for the common Modelpedia processes are discussed in clause 2.1.1.

**Opportunities for improvement**

There are no specific new OFI's for this clause. OFI's for the common Modelpedia processes are discussed in clause 2.1.1.

## Clause 2.1.3

**Table 3-11 Clause 2.1.3 compliance grade**

Subclause	Requirement	Compliance grade
2.1.3	Water NSW must ensure that the relevant Water Quality Management Systems are fully implemented and that all relevant activities are carried out in accordance with the relevant Water Quality Management System and to the satisfaction of NSW Health.	<b>Non-compliant (material)</b> 
<b>Risk</b> If WaterNSW does not fully implement its Water Quality Management Systems, there is a risk that WaterNSW may not be able to provide safe and reliable services to its customers and consumers. This may result in significant adverse outcomes to public health and public safety.		<b>Target for full compliance</b> WaterNSW must provide evidence that it fully implemented its WQMS throughout the audit period and that all relevant activities were carried out in accordance with its WQMS and NSW Health was satisfied with the implementation of the WQMS during the audit period.

### Summary of reasons for grade

In the statement of compliance 2024 letter to IPART (dated 27 August 2024), WaterNSW reported ongoing non-compliance for this clause until all recommendations from the 2022-2023 Operating Licence Audit are complete. We found that several of the recommendations from the 2022-23 Operating Licence Audit are outstanding and overdue. We consider that addressing the outstanding and overdue recommendations would assist in reducing the extent of the non-compliances for this clause, however we also identified additional new non-compliances in this audit period.

The inconsistencies and deficiencies identified in this audit period, and the recurring nature of some of those non-compliances with limited evidence of corrective actions, pose a high risk to WaterNSW meeting the objectives of this licence obligation, which may result in significant adverse outcomes to public health and public safety. Of concern, we have identified multiple examples where reporting of key information to the Board and Regulators was inaccurate or inadequate.

We note that WaterNSW acknowledged that improvements can be made in terms of reporting, quality assurance, and internal audit and assurance activities, and that WaterNSW do not consider that the audit findings for this clause pose a high risk to meeting the objective of the licence clause. We consider that WaterNSW did not provide sufficient evidence to demonstrate that the level of risk is low for the audit findings associated with this clause. We consider the findings warrant a non-compliant (material) grade. In determining the residual level of risk to be high, we considered:

- Several of the inconsistencies and deficiencies identified in 2022-23 are recurring in 2023-24.
  - We consider that the recurring nature of the non-compliance with limited evidence of corrective actions contributes to the high risk graded for the clause, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.
  - Several of the recommendations from the 2022-23 Operating Licence Audit are outstanding and overdue, demonstrating that WaterNSW have not appropriately planned and completed corrective actions to consistently mitigate identified risks. Addressing the outstanding and overdue recommendations would assist in reducing the extent of the non-compliances.
- We have identified several instances in reporting to both the Board and Regulators, where corrective actions were reported as being completed, however we found that several of the actions were not undertaken as reported.
- We have identified several instances in reporting to both the Board and Regulators, where performance targets were reported as being met (i.e. metrics were highlighted in green), yet WaterNSW provided insufficient evidence (in response to the audit questionnaire, audit interviews

and three rounds of additional evidence after the interviews) to confirm that the target had been met.

The Board relies on information accurately being rolled up into dashboards and summaries to help set organisational priorities. Incorrect reporting can hinder effective governance by boards.

If the Board and Regulators do not have accurate and comprehensive information reported to them, they cannot operate effectively, and there is the potential for insufficient resourcing, strategic decision-making, investment, delegations, intervention and effective oversight. We consider that this leads to a high residual risk of WaterNSW not meeting the public health and water quality objectives of the licence for FRWSS, and similar risks being transferred to water utilities Supplied<sup>1</sup> with bulk water from WaterNSW.

Additionally, WaterNSW did not provide sufficient evidence to demonstrate that WaterNSW has implemented sufficiently mature quality assurance processes to ensure that human failure can be identified and managed to ensure that reporting to the Board and Regulators is accurate and of high quality. WaterNSW advised that some of the inconsistencies in reporting to the Board were a result of unintentional human error. We consider that human factors and errors are normal and predictable, and that WaterNSW should have managed quality assurance processes more appropriately, given the importance of the Board and Regulators having accurate and comprehensive information to inform decisions and potential risk mitigations.

We consider that there are relevant learnings from other international water utilities and water quality incidents. Following the Havelock North water quality contamination incident in 2016, which resulted in widespread illness and contributed to four deaths, the New Zealand Government established an independent inquiry. Recommendations from the Havelock North inquiry included that water suppliers should ensure that:

- leadership, governance and management understand the relevant drinking water risks and have appropriately addressed the management of those risks in their strategic decision-making, long-term planning, audit and resource allocation processes, and delegations
- staff understand the critical control points and other processes they are required to follow and the matters they are required to monitor and escalate as appropriate.













We consider these findings of relevance, as they emphasise the high levels of diligence and assurance required to protect public health, and highlight the importance of leadership, governance and management requiring accurate and comprehensive information to effectively understand and mitigate risks.

For context, we have provided an indication of the audit findings at the ADWG element level for this clause in Table 3-12. In some cases, although the element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies and inadequacies in implementing the Modelpedia requirements has contributed to the overall non-compliant finding for this clause.

---

<sup>1</sup> As per the definition of “Supplied” in the Operating Licence

**Table 3-12 Overview of audit findings at the ADWG element level for clause 2.1.3**

ADWG element		Finding (at the element level)		Notes
1	Commitment to drinking water quality management	Compliant (minor shortcomings)		While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies in implementing the requirements of Modelpedia has contributed to the overall non-compliant finding for this clause.
2	Assessment of the drinking water supply system	Non-compliant (non-material)		Aspects of non-compliance (material) associated with data reported to the Board and Regulators are discussed under element 10 of this clause.
3	Preventive measures for drinking water quality management	Non-compliant (non-material)		Aspects of non-compliance (material) associated with data reported to the Board and Regulators are discussed under element 10 of this clause.
4	Operational procedures and process control	Non-compliant (non-material)		
5	Verification of drinking water quality	Non-compliant (non-material)		
6	Management of incidents and emergencies	Compliant (minor shortcomings)		Aspects of non-compliance associated with implementation of procedures and response plans with the involvement of relevant agencies are discussed under element 3 and element 12 of this clause.
7	Employee awareness and training	Compliant		
8	Community involvement and awareness	Compliant		
9	Research and development	Compliant		
10	Documentation and reporting	Non-compliant (material)		
11	Evaluation and audit	Non-compliant (material)		
12	Review and continual improvement	Non-compliant (material)		

Other specific examples of gaps contributing to the high-risk finding for this clause are noted in Table 3-13.

**Table 3-13 Specific examples of non-compliant (material) findings for WQMS implementation**

Element	Aspect	Findings	Further commentary
<b>10 and 12</b>	Reporting to the Board	<ul style="list-style-type: none"> <li>We identified inconsistencies and inaccuracies in reporting to the Board. The inconsistencies and inaccuracies are a high risk, potentially hindering the Board's ability to make informed judgments about the quality of drinking water and appropriately prioritise improvements to water quality (see ADWG element 10).</li> <li>There were inconsistencies in reporting to the Board on the <i>status of internal audit and assurance activities</i> in the October 2023, March 2024 and June 2024 quarterly reports and the June 2024 Annual WQMS Health Check Report.</li> <li>There were inadequacies and inconsistencies in reporting to the Board on the <i>progress of water quality improvement plan actions</i> in the March 2024 and June 2024 quarterly reports and the June 2024 Annual WQMS Health Check Report.</li> <li>There were inconsistencies and inadequacies in reporting to the Board on <i>CCP performance</i> in the October 2023, March 2024 and June 2024 and August 2024 (reporting period May to June 2024) quarterly reports and the June 2024 Annual WQMS Health Check Report.</li> <li>There were inconsistencies in reporting to the Board on the <i>expected duration of non-compliance</i> in the June 2024 quarterly report and the June 2024 Annual WQMS Health Check Report.</li> <li>There were inconsistencies in <i>how WaterNSW reported the 2022-23 Operational Licence Audit findings to the Board</i> in the June 2024 Annual WQMS Health Check Report.</li> </ul>	<ul style="list-style-type: none"> <li>The ADWG states that employees should be properly trained to fill out records and that internal reporting supports effective decision making across the organisation, including operations staff and management, senior executive and the board of directors.</li> <li>Non-compliances in accurately reporting water quality improvement plan actions and the status of WQMS internal audit and assurance activities were previously identified in the 2022-23 Operational Licence Audit. We consider that the recurring nature of the non-compliance with limited evidence of corrective actions contributes to the high risk, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.</li> </ul>
<b>10 and 12</b>	Reporting to Regulators	<ul style="list-style-type: none"> <li>In the WQMS Annual Report 2023-24 provided to IPART and NSW Health, key information reported by WaterNSW was inaccurate or inconsistent, including the status of implementation of the WQMS, the status of internal audit assurance activities, the status of corrective actions and performance of CCPs.</li> <li>There are inconsistencies in reporting from WaterNSW to IPART on the status of 2022-23 Operational Audit Recommendations, including the expected duration of actions to address the water quality non-compliances identified in the 2022-23 Operational Audit.</li> </ul>	<ul style="list-style-type: none"> <li>The ADWG states that effective external reporting ensures that drinking water quality management is open and transparent. The non-compliances in reporting to Regulators are a high risk, potentially hindering regulatory oversight and responses required to protect public health.</li> <li>Non-compliances in records and documents were previously identified in the 2022-23 Operational Licence Audit. We consider that the recurring nature of the non-compliance with limited evidence of corrective actions contributes to the high risk, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.</li> </ul>

Element	Aspect	Findings	Further commentary
<b>11 and 10</b>	Internal audit and assurance program and reporting	<ul style="list-style-type: none"> <li>Not all scheduled Health Check activities met the requirements of the WQMS as they were not systematic and comprehensive activities that provided oversight and assurance that the WQMS objectives were being met. We consider some of the scheduled activities (e.g. regular updates of documents) to be business as usual (i.e. not all the scheduled activities meet the requirements of Health Checks defined by Modelpedia).</li> <li>WaterNSW set a target of completing six Health Checks in FY23-24, including two deep dives. WaterNSW reported to the Board in the June 2024 Annual WQMS Health Check report that the targets were on track, and reported to NSW Health and IPART (D2024/68440) that six Health Checks and two deep dives were completed. WaterNSW did not complete six Health Checks in FY23-24 and undertook only one deep dive. WaterNSW provided evidence that they completed four of the scheduled Health Checks. Of the four, we consider that one of those activities met the internal audit and assurance requirements (i.e. only one of the completed activities could be considered a Health Check).</li> <li>The 2023-24 target of six Process Health checks per year was revised downwards from a 2022-23 target of 12 Process Health checks per year (D2023/3403). When WaterNSW revised the target, WaterNSW informed the Board that where possible management would aim to exceed the target of six Process Health checks per year (D2023/3403).</li> </ul>	<ul style="list-style-type: none"> <li>The gaps are a high risk, potentially hindering WaterNSW's ability to identify non-compliances or shortcomings in system implementation. The ADWG states that audits involve the comprehensive and systematic evaluation of activities and processes to confirm that objectives (including public health) are being met, and that results of audits should also be considered as part of the WQMS review.</li> <li>Non-compliances in the activities undertaken as part of the internal audit and assurance program were previously identified in the 2022-23 Operational Licence Audit. We consider that the recurring nature of the non-compliance with limited evidence of corrective actions contributes to the high risk, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.</li> </ul>
<b>3 and 10</b>	Critical control points and documentation and reporting	<ul style="list-style-type: none"> <li>WaterNSW provided insufficient evidence to demonstrate implementation of aspects of Greater Sydney CCP3 and Oberon Dam CCP7. Given the lack of documentation available to be provided by WaterNSW, we consider that these findings contribute to the high documentation and reporting risks outlined in element 10 of this clause.</li> <li>We consider the residual risk to public health for the implementation of identified aspects of Greater Sydney CCP3, and Oberon Dam CCP7 to be low, given the multiple barrier approach implemented by downstream customers, combined with the ongoing engagement from WaterNSW with those customers through frequent operational forums.</li> </ul>	<ul style="list-style-type: none"> <li>The ADWG states that critical limits are performance criteria separating acceptability from unacceptability in terms of hazard control and water safety, and that deviation from critical limits indicates loss of control of the process or activity and should be regarded as representing a potentially unacceptable health risk, and that such events should result in immediate notification of the appropriate health regulator.</li> <li>Non-compliances in the availability and documentation of CCP instrumentation were previously identified in the 2022-23 Operational Licence Audit report. We consider that the recurring nature of the non-compliance with limited evidence of corrective actions contributes to the high risk, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.</li> </ul>

Several non-material non-compliances were also identified for this clause and are noted in Table 3-14.

**Table 3-14 Specific examples of non-compliant (non-material) findings for WQMS implementation**

Element	Aspect	Findings
<b>2 and 3</b>	C2C risk assessments	<ul style="list-style-type: none"> <li>WaterNSW did not implement aspects of the C2C risk assessment process for the Illawarra and Nepean system risk assessments. This includes that: <ul style="list-style-type: none"> <li>there are inconsistencies between the schematics used in the Illawarra and Nepean C2C risk assessment documentation and the schematics for those schemes on Modelpedia</li> <li>the schematics used in the risk assessment documentation do not fully identify the WaterNSW CCPs</li> <li>uncertainty was not assessed for all items in the C2C risk assessments and recommendations were not made to improve uncertainty for all hazardous events rated as 'uncertain',</li> <li>barrier effectiveness was not assessed for all items in the C2C risk assessments, and WaterNSW does not have assurance that all controls listed in the C2C register are effective (e.g. there are incorrect references to 24/7 alarm monitoring and response for petrochemical hazards)</li> </ul> </li> <li>CD2021/92[v4] requires emerging hazards to be identified as part of the risk assessment process. We sampled the C2C risk register and C2C documentation and note that emerging contaminants (e.g. PFAS) were not adequately considered in the hazard identification/screening or risk assessment for the Illawarra and Nepean C2C risk assessments conducted in the audit period.</li> </ul>
<b>2 and 12</b>	Water quality improvement actions	<ul style="list-style-type: none"> <li>Modelpedia requires that the WQIP is updated based on risk assessment findings, water quality non-conformance, critical limit exceedance, incident and emergency reports and audit outcomes. Actions identified in the Illawarra and Nepean C2C risk assessments were not added to the WQIP, prioritised and tracked for implementation in the WQIP as required by Modelpedia.</li> </ul>
<b>2, 3 and 4</b>	Preventive measures	<ul style="list-style-type: none"> <li>The NOCTSO for the October to December 2023 (D2023/99979) outage of Upper Canal did not assess water quality risks for the Prospect System. WaterNSW advised that there was no need for a risk assessment as the Upper Canal is a minor source for Prospect. We consider this inadequate, as Upper Canal is a key contingency source in the C2C risk register and the Warragamba rainfall contingency plan and WaterNSW did not evaluate the change in water quality risks in terms of barrier degradation.</li> </ul>
<b>3 and 4</b>	Preventive measures	<ul style="list-style-type: none"> <li>WaterNSW undertook a HBT assessment for Duckmaloi WFP and Oberon Dam and discussed the findings with NSW Health. In the HBT assessment, WaterNSW claimed 2.5 additional LRVs for the membranes at Duckmaloi WTP. NSW Health provided comments including that the LRV claim was inconsistent with the ADWG. WaterNSW did not update the LRV claim in the report to address NSW Health's comments. We consider the residual risk of the inconsistency to be low, as WaterNSW have developed a plan to meet the HBT shortfall.</li> </ul>
<b>3</b>	CCP documentation	<ul style="list-style-type: none"> <li>It is unclear if WaterNSW implemented the CCP table actions for the Prospect Reservoir (CCP3) turbidity adjustment limit in September 2023, including early warning notification to Sydney Water and Prospect WFP. WaterNSW advised that the event was notified to Sydney Water during fortnightly meetings and that it had been agreed that incidents would not be raised for the September to December 2023 turbidity spikes, however we do not have evidence of this (e.g. meeting minutes or emails).</li> </ul>

Element	Aspect	Findings
3	CCP documentation	<ul style="list-style-type: none"> <li>The Greater Sydney CCP protocols were overdue for review and not reviewed by WaterNSW in the audit period.</li> <li>Aspects of the Greater Sydney CCP protocols were inconsistent with on-the-ground practices (e.g. the availability of critical instrumentation), demonstrating the need for review of the CCP protocols.</li> <li>WaterNSW emailed a copy of the current Greater Sydney CCPs to NSW Health in June 2024 asking for their review of the protocols (D2024/48199). The email notes that WaterNSW had not completed their review and update of the Greater Sydney CCPs before sending the CCP protocols to NSW Health.</li> <li>The May 2024 JOG minutes (D2024/79034) contain an action to review the definition of CCPs used by WaterNSW, Sydney Water and NSW Health. Within the minutes, the action responsibility is assigned to representatives from Sydney Water and WaterNSW. WaterNSW did not complete this action (e.g. review the definitions and develop a consistent view with Sydney Water) before providing the CCP protocols to NSW Health for review.</li> </ul>
4	Materials and chemicals	<ul style="list-style-type: none"> <li>The evaluation of pipe repair materials used in the FRWSS is inconsistent with Modelpedia and CD2019/36[v4], which document the requirement to comply with AS4020:2018. Recommendation 2023-09 was due by 30 June 2024, and required WaterNSW to review industry practice and assess options for replacing lead seals for mains pipeline connections during repairs and maintenance and update the WQMS process if needed. WaterNSW has not completed the recommendation, and Modelpedia and CD2019/36[v4] do not document a process for chemicals and materials to be assessed for water quality safety where AS4020:2018 cannot be met. This means that there are inconsistencies in current practice compared to the CD2019/36[v4] requirement to comply with AS4020:2018.</li> </ul>
5	Water quality monitoring	<ul style="list-style-type: none"> <li>The Water Monitoring Program (CD2011/179, v7) sets out requirements for monitoring across WaterNSW Systems. We cross referenced a sample of monthly water quality monitoring reports against the Water Quality Data Review and Reporting Procedure for the declared and non-declared catchments and identified that a number of reports were not prepared within the required time period stipulated within the Water Monitoring Program.</li> <li>The contents of the reports were also not consistently aligned with requirements of the Water Quality Data Review and Reporting Procedure (CD2012/130, v7). The inconsistencies and missing information in some water quality monitoring reports included sample sites, parameters, highlighting of non-compliances, and long-term trending.</li> </ul>
10	Documentation and records	<ul style="list-style-type: none"> <li>A significant proportion of WQMS documents and records provided were overdue for review, including critical WQMS documentation such as the Greater Sydney CCPs (CD2021/128).</li> <li>We identified gaps in implementation of the corrective actions for document control reported to IPART and NSW Health in the WQMS Annual Report (D2024/68440).</li> <li>Of WaterNSW's high-risk controlled documents, as of 31 August 2024, 26% are overdue for review, and 22% have been overdue for more than 180 days (D2024/130004).</li> </ul>

Element	Aspect	Findings
11	Internal audit and assurance	<ul style="list-style-type: none"> <li>WaterNSW did not implement the WQMS assurance program (D2017/87415) according to schedule.</li> <li>WaterNSW advised that delays to audits/reviews occurred during the audit period which resulted in several not being completed by their scheduled date, and that this was due to interruptions by business restructuring and a period where a dedicated WQMS resource was unavailable. We consider that the absence of key water quality resources highlights the importance of knowledge management across the organisation. Key water quality activities should be able to be progressed in the absence of specific staff. The implementation on WaterNSW's WQMS should not be reliant on the availability of a single dedicated resource.</li> <li>Non-compliances in undertaking the assurance activities as scheduled were previously identified in the 2022-23 Operational Licence Audit report.</li> </ul>

Several shortcomings are also noted in Table 3-15.

**Table 3-15 Specific examples of minor shortcomings for WQMS implementation**

Element	Aspect	Findings
<b>1</b>	Regulatory requirements	<ul style="list-style-type: none"> <li>We consider that WaterNSW has not demonstrated a comprehensive understanding and implementation of the NSW Public Health Regulation 2022 s46 (b), s47 (a) and s48 (a) and (g) requirements as they apply to FRWSS. The shortcoming relates to the identification of relevant and formal requirements.</li> <li>The shortcomings in implementing the Regulation are covered under findings for the relevant ADWG elements.</li> </ul>
<b>1 and 6</b>	Stakeholders and communication	<ul style="list-style-type: none"> <li>The WaterNSW Water Quality Contact List (D2013/94543) is required to be updated at least every six months. The contact list was distributed to NSW Health, Lithgow and Oberon for comment (D2023/78752) and subsequently completed (IM2024/1838) in August 2023; however, WaterNSW did not review the contact list between January and June 2024.</li> </ul>
<b>2</b>	Risk assessment	<ul style="list-style-type: none"> <li>We sampled controls for petrochemicals in the C2C risk register (D2024/81089) for both of the Nepean and Illawarra systems and identified shortcomings. “24/7 alarm monitoring and response” is listed as a current control. WaterNSW advised that there is no online water quality monitoring for hydrocarbons, and that for the Nepean system the installation of a hydrocarbon meter in the wet well at the pumping station is a proposed control.</li> <li>Similar shortcomings were observed for the Cascade system. “24/7 alarm monitoring and response” is listed as a control for the petrochemicals, pesticides and herbicides hazards for the Cascade system. When we asked if we could explore the 24/7 alarm monitoring during the site visit, WaterNSW advised that there is no hydrocarbon sensor or online water quality monitoring for those hazards.</li> <li>We consider these inconsistencies a shortcoming and low risk, as WaterNSW has other (albeit less effective) mitigations in place for these hazards, such as public reporting of spills in the catchment.</li> </ul>
<b>6</b>	Incident debriefs	<ul style="list-style-type: none"> <li>Hot debriefs were not held for the Nepean (D2024/32223) and Greater Sydney (D2024/82473) water quality incidents as required by the WQMS.</li> </ul>
<b>10</b>	Documentation and records	<ul style="list-style-type: none"> <li>In the provision of evidence for this audit, we were provided with several incorrect versions of documents, including key documents such as Board reports, demonstrating socio-technical issues with the record management system.</li> <li>The ADWG states employees should be properly trained to fill out records, and that records of all activities pertaining to the performance of drinking water quality management should be stored so that they can be easily accessed and reviewed.</li> </ul>

## Discussion and notes

Implementation of the WQMS for each element of the ADWG Framework is discussed below.

### Element 1 Commitment to drinking water quality management

We identified shortcomings associated with the implementation of the WQMS requirements for this element. While this element may be considered compliant (minor shortcomings) if it was assessed on its own, the extent of inconsistencies in implementing the requirements of Modelpedia has contributed to the overall non-compliant finding for this clause.

#### *Drinking water quality policy*

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided sufficient evidence of implementation of the Modelpedia requirements to formulate a drinking water quality policy and ensure that the policy is visible, communicated, understood and implemented by employees.

We tested implementation of the Modelpedia requirement that the water quality policy is on display in WaterNSW offices and is described in the mandatory *Water Quality Awareness* training.

A photograph of the policy on display at the Duckmaloi Water Treatment Plant was provided as evidence (IM2024/1837). A copy of the Water Quality policy was in the Water Quality Awareness eLearning module (D2024/77867).

See element 7 of this clause for a discussion on the water quality training which included making employees aware of the policy (as required by Modelpedia for this element).

*Other observations related to this component are provided below.*

We observed that the water quality policy was displayed in the Parramatta Head Office during the audit week and at the Cascade Dam Office during the site visit. The policy displayed at the Cascade Dam Office during the site visit was not the latest version (the approved date of the displayed policy was 20 November 2019, whereas the approved date of the current policy is 27 June 2023).

#### *Regulatory and formal requirements*

We identified shortcomings in the implementation of the WQMS requirements for this component.

*Findings related to the minor shortcoming for this component are outlined below.*

A shortcoming was identified in the demonstration of full implementation against the requirements of Modelpedia to identify and document all relevant regulatory and formal requirements, ensure responsibilities are understood and communicated to employees, and review requirements periodically to reflect any changes. For example, references to legislation and other formal requirements within supporting documents were not kept up to date in the Water Quality Monitoring Program (CD2011/179, v7) which refers to out-of-date advice on Total Coliforms. An opportunity for improvement has been identified.

Additionally, as discussed under element 9 in clause 2.1.2, WaterNSW has not implemented aspects of relevant obligations under the Public Health Regulation 2022 (NSW), for example the requirement to include information in the WQMS regarding research and development carried out in relation to maintaining or improving the quality of drinking water, including a list of previous water quality studies and plans for future studies.

*Other findings and supporting information related to this component are provided below.*

Records of training/communication for employees in legal and formal requirements related to water quality were provided (D2023/11498), including the current Water Quality Awareness eLearning Training Module (D2024/77867), and other eLearning modules (Water Quality Incident Response (D2018/77988) and Materials and Chemicals in contact with Drinking Water (D2019/48488)). A sample email reminder to staff indicating the need for completion of mandatory training (D2024/79440) was also provided as evidence.

Further details of water quality related employee training are provided under element 7.

### **Engaging stakeholders**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the requirements of its WQMS to identify all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier, and develop appropriate mechanisms and documentation for stakeholder commitment and involvement.

Modelpedia notes that the Water Quality Contact list is to be updated to reflect changes to key water quality contacts at least every 6 months. Although evidence was provided that the contact list was distributed to NSW Health, Lithgow and Oberon for comment (D2023/78752) and subsequently completed (IM2024/1838) in August 2023, WaterNSW did not review the contact list between January and June 2024. An opportunity for improvement has been identified.

We were provided minutes for:

- The FRWSS Joint Operating Group (JOG) meetings (which include WaterNSW, NSW Health, Lithgow City Council and Oberon Council) (D2023/161181, D2024/9830, D2024/33555).
- FRWSS Operations Forums (which include WaterNSW, Lithgow City Council and Oberon Council) (D2023/157598, D2024/165192, D2024/19170, D2024/47705).
- The Greater Sydney JOG meetings (which include WaterNSW, NSW Health and Sydney Water) (D2024/79031, D2024/79033, D2024/79034).
- Operational interface meetings with Shoalhaven City Council (F2016/5331, D2024/8333, D2023/73820).
- Operational interface meetings with Wingecarribee Council and Goulburn Mulwaree Council (D2024/77880, D2024/13241).

The minutes included updates on the water quality improvements projects and showed the discussions aligned with Modelpedia. These minutes provide evidence of implementation of stakeholder engagement.

## **Element 2 Assessment of the drinking water supply system**

We identified that WaterNSW were non-compliant (non-material) in relation to the implementation of the WQMS requirements for this element. Aspects of non-compliance (material) associated with data reported to the Board and Regulators are discussed under element 10 of this clause.

### **Water supply system analysis**

We identified non-material non-compliances associated with the implementation of the Modelpedia requirements for this component.



*Findings related to the non-compliance (non-material) for this component are outlined below.*

We identified inconsistencies in WaterNSW's implementation of the Modelpedia requirements to construct a flow diagram of the water supply system from catchment to consumer (C2C), assemble pertinent information and document key characteristics of the water supply system to be considered, and periodically review the water supply system analysis.

WaterNSW maintains generalised flow diagrams of the water supply systems. No flow diagrams of the water supply system were reviewed during the audit period. The C2C risk assessment procedure (CD2021/92) requires that relevant system schematics are presented in the risk assessment, and any changes are to be noted. WaterNSW did not note any changes required for the schematics presented in the risk assessment. When we cross checked the flow diagrams used in the Nepean and Illawarra C2C risk assessments with the schematics and CCPs on Modelpedia, we identified several inconsistencies, including that:

- The flow diagrams used in both the Illawarra and Nepean risk assessments are inconsistent with the flow diagrams in Modelpedia (i.e. different diagrams) and are not referenced in Modelpedia.
- The flow diagram used in the Illawarra risk assessment does not identify WaterNSW's CCPs.
- The flow diagram used in the Nepean risk assessment incorrectly labels WaterNSW's CCPs.
- Field verification of the schematics used in the Illawarra and Nepean risk assessments is not documented.

We sampled a number of other schematics on Modelpedia and identified several inconsistencies (see Appendix D ).

We consider that the residual risk from the schematic inconsistencies in the audit period is low, as despite the inconsistencies, WaterNSW has schematics in place and WaterNSW provided evidence that the risk workshop attendees had appropriate knowledge and expertise.

*Other findings and supporting information related to this component are provided below.*

WaterNSW has demonstrated that it has implemented the requirements of its WQMS to assemble a team with appropriate knowledge and expertise. WaterNSW assembled a team with appropriate knowledge and expertise for the Illawarra and Nepean C2C risk assessments, with workshop members including representatives from WaterNSW, Sydney Water, NSW Health. The representatives met the requirements of the WQMS to have expertise in system operations, water treatment, water quality, public health and when required, assets/project management.

### **Assessment of water quality data**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

Non-compliances (material) associated with data reporting to the Board and Regulators are discussed under element 10 of this clause.

Non-compliances (non-material) associated with listing and examining exceedances are discussed under element 3 of this clause.

Non-compliances (non-material) associated with data presented in reports are discussed under element 5 of this clause.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the requirements of its WQMS to maintain a system to assemble historical data, list and examine exceedances, and assess data using tools such as control charts and trends analysis to identify trends and potential problems.

WaterNSW provided evidence of tools such as SCADA trends and SCARMS plots, which are used for routine reports and frequently during incidents or under heightened risk conditions and prior to conducting risk assessments (e.g. reports for the June 2024 water quality event are contained within D2024/77865).

### **Hazard identification and risk assessment**

We identified non-material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (non-material) for this component are outlined below.*

WaterNSW held C2C risk assessments for the Illawarra and Nepean systems with the C2C working group in accordance with the C2C schedule (D2022/100491). We note that no other C2C risk assessments were scheduled within the audit period.

WaterNSW did not implement aspects of the C2C risk assessment process (CD2021/92) for the Illawarra and Nepean system risk assessments:

- Uncertainty was not assessed for all items in the C2C risk assessments. Modelpedia requires that for hazardous events rated as uncertain, recommendations should be made to improve certainty, such as conducting additional monitoring or research. WaterNSW did not make recommendations to improve certainty for all hazardous events rated as uncertain.
- Barrier effectiveness was not assessed for all items in the C2C risk assessments.
- Actions identified were not prioritised and tracked for implementation in accordance with the requirements of Modelpedia (see element 12 of this clause).

We also found that the Illawarra C2C risk assessment report (D2024/49360) references an outdated version of the C2C risk assessment procedure.

Non-compliances associated with the schematics used in the C2C risk assessment are discussed in element 2 (water system supply analysis) of this clause.

Additionally, CD2021/92[v4] requires emerging hazards to be identified as part of the risk assessment process. There is an inconsistency in implementation of the C2C risk assessment procedure in terms of emerging hazards for the Illawarra and Nepean C2C risk assessments. We sampled the C2C risk register and C2C documentation and observed that emerging contaminants (e.g. PFAS) were not adequately considered in the hazard identification/screening or risk assessment for the Illawarra and Nepean C2C risk assessment process.

### **Element 3 Preventive measures for drinking water quality management**

We identified that WaterNSW were non-compliant (non-material) in relation to the implementation of the WQMS requirements for this element. Aspects of non-compliance (material) associated with data reported to the Board and Regulators are discussed under element 10 of this clause.

### **Preventive measures and multiple barriers**

We identified non-material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (non-material) for this component are outlined below.*

We identified inconsistencies in WaterNSW's implementation of the Modelpedia requirements to identify existing preventive measures from catchment to consumer for each significant hazard or hazardous event and estimate the residual risk, evaluate alternative or additional preventive measures where improvement is required, and document the preventive measures and strategies into a plan addressing each significant risk.



### *Health-based targets*

WaterNSW undertook a health-based target (HBT) assessment for Duckmaloi WTP and Oberon Dam and discussed the findings with NSW Health. In the HBT assessment, WaterNSW claimed 2.5 additional LRVs for the membranes at Duckmaloi WTP. NSW Health provided comments on the meeting minutes noting that:

- this was inconsistent with the ADWG,
- NSW Health would not consider a 2.5 LRV credit for virus, and
- utilities should have a plan in place to meet the HBT shortfall.

WaterNSW did not update the LRV claim in the report to address NSW Health's comments.

NSW Health suggested that options to upgrade Duckmaloi WTP should be included in the Fish River Strategy and WaterNSW's IPART submission to ensure funding is secured. We confirmed an option to upgrade Duckmaloi WTP was included in the Fish River Strategic Plan (D2024/52582), which was finalised outside of the audit period. We consider the risk of this inconsistency is low, as WaterNSW have developed a plan to meet the HBT shortfall.

### *Notification of Change to System Operation and barrier degradation*

The Notification of Change to System Operation (NOCTSO) for the October to December 2023 (D2023/99979) outage of Upper Canal did not consider water quality specific risks for the Prospect System. WaterNSW advised that WaterNSW considered that there was no need for a risk assessment of water quality risks as the Upper Canal is a minor source for Prospect. We note that Upper Canal is identified as a key contingency source in the C2C risk register and the Warragamba rainfall contingency plan. We consider not evaluating the change in water quality risks is inappropriate, given the potential for barrier degradation with Upper Canal offline when compared to the risks as assessed in the C2C risk assessment. In recent extended east coast lows, there have been times when Prospect WFP was not supplied from Lake Burragorang (Warragamba Dam), as the water quality in Lake Burragorang was outside Sydney Water's preferred treatability targets. The NOCTSO (D2023/99979) did not articulate that the water quality specific risks for the Prospect System could be managed during the outage of Upper Canal, or that the risk was assessed as low based on the water quality in Lake Burragorang.

### *Findings related to the minor shortcomings for this component are outlined below.*

We were provided the *C2C risk register* (D2024/81089) and confirmed that controls were identified for each significant risk and were generally appropriate. We sampled controls for petrochemicals in the C2C risk register (D2024/81089) for both of the Nepean and Illawarra systems and identified shortcomings. "24/7 alarm monitoring and response" is listed as a current control. WaterNSW advised that there is no online water quality monitoring for hydrocarbons, and that for the Nepean system the installation of a hydrocarbon meter in the wet well at the pumping station is a proposed control.

Similar shortcomings were observed for the Cascade system. "24/7 alarm monitoring and response" is listed as a control for the petrochemicals, pesticides and herbicides hazards for the Cascade system. When we asked if we could explore the 24/7 alarm monitoring during the site visit, WaterNSW advised that there is no hydrocarbon sensor or online water quality monitoring for those hazards, and that the control referred to the process for the public to report spills in the catchment.

We consider these findings to be a shortcoming, because although the controls listed in the C2C register for petrochemicals are inconsistent with actual practice, there are alternative (albeit less effective) risk management practices in place for the hazard (e.g. public reporting of spills).

### **Critical control points**

We identified non-material non-compliances associated with the implementation of the Modelpedia requirements for this component. Aspects of non-compliance (material) associated with data reported to the Board and Regulators are discussed under element 10 of this clause.

*Findings related to the non-compliance (non-material) for this component are outlined below.*

We identified inconsistencies in the implementation of WaterNSW's WQMS for this component. The Modelpedia requirements are to:

- Assess preventive measures from catchment to consumer to identify critical control points
- Establish mechanisms for operational control
- Document the critical control points, critical limits and target criteria.

The ADWG states that critical limits are performance criteria separating acceptability from unacceptability in terms of hazard control and water safety, and that deviation from critical limits indicates loss of control of the process or activity and should be regarded as representing a potentially unacceptable health risk, and that such events should result in immediate notification of the appropriate health regulator.

The Greater Sydney CCPs (CD2021/128) require that NSW Health (Water Unit) be informed of any failure of online instrumentation related to CCPs, including the biofish monitor. The Greater Sydney CCPs (CD2021/128) also state that alternative monitoring methods and frequency are to be agreed until the primary instrument can be restored.

WaterNSW had insufficient evidence to demonstrate implementation of aspects of the CCP protocols for the examples discussed below (Greater Sydney CCP3 and Oberon Dam CCP7). Given the lack of documentation available to be provided by WaterNSW, we consider that these findings contribute to the high risks outlined in element 10 of this clause. We consider the residual risk to public health for the specific CCP items noted below to be low, given the multiple barrier approach implemented by downstream customers combined with the ongoing engagement from WaterNSW with those customers through frequent operational forums.

#### *Greater Sydney CCP3*

We consider that there was insufficient evidence to confirm that WaterNSW fully implemented the corrective actions listed in the Greater Sydney CCP protocols (CD2021/128[v1]) for CCP3. It is unclear if WaterNSW implemented the CCP table actions for the Prospect Reservoir (CCP3) turbidity adjustment limit in September 2023, including early warning notification to Sydney Water and Prospect WFP. WaterNSW advised that the event was notified to Sydney Water during fortnightly meetings and that it had been agreed that incidents would not be raised for the September to December 2023 turbidity spikes. We consider that there was insufficient evidence to confirm that it was agreed that incidents would not be raised for the September to December 2023 turbidity spikes (e.g. meeting minutes or emails).

#### *Oberon Dam CCP7*

Variable off-take selection at Oberon Dam is a CCP (CCP7) and OCP (OCP7A and OCP7B) for the FRWSS (CD2021/127[v1]). The valves at the Oberon Dam off-take tower were well past their predicted asset life before being replaced. During interviews on the site visit, maintenance staff advised that prior to the off-take valves being replaced, the flexibility and availability of the CCP and OCP controls was restricted.

WaterNSW advised that the Regional Ops Team could switch valves on advice from the Water Quality Advisor, and that optimum quality water was selected when required. WaterNSW advised that asset decisions are based on observed condition, not on "predicted" asset life as actual life will vary greatly and is influenced by environmental conditions, amount of usage, potentially presence of manufacturing defects, and other factors. WaterNSW advised that the valves were replaced because that was a better strategy than attempting to refurbish them. When effectively implemented, we consider this approach can be an effective and efficient asset management methodology.

We consider that the disconnect between the onsite interview and later response from WaterNSW without supporting evidence that there was no impact to the flexibility or availability of the CCP and OCP, provides further evidence of potential issues in intra-organisation clarity on asset condition and availability for critical assets.

*Other observations related to this component are provided below.*

#### **Greater Sydney CCP2C**

The biofish monitor CCP measuring point (CCP2C) was not in operation in 2023-24. WaterNSW advised that Sydney Water and NSW Health were aware of the difficulty in maintaining the biofish monitor and were satisfied that there were other surrogates for managing water quality in the canal. WaterNSW advised that this was discussed in meetings during 2023, but did not provide evidence of those discussions (e.g. meeting minutes or emails from the time of the discussions). WaterNSW provided evidence of an email from NSW Health (D2025/15530) and an email from Sydney Water (D2025/15750) confirming that both organisations were aware (before the audit period) of the biofish monitoring issues.

WaterNSW advised that when the Subject Matter Expert (scientist) had exhausted all options for maintaining the system, the scientist advised operations in June 2024 (D2025/2504) that the maintenance of the unit was cost prohibitive and that moving to a hydrocarbon sensor was a viable alternative.

CD2021/128[v1] requires that NSW Health (Water Unit) is to be informed of any failure of on-line instrumentation related to CCPs, and that an alternative monitoring method (such as Sydney Water IICATS) and frequency is to be agreed until the primary instrument can be restored.

The findings related to Greater Sydney CCP2C do not contribute to the non-compliance (non-material) finding for this component (element 3).

We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that an area for potential improvement was transparency regarding asset condition and maintenance schedules on critical assets.

As discussed in element 10 of this report, despite quarterly and annual CCP performance reporting to the Board, WaterNSW did not inform the Board that the CCP performance data reported to the Board excluded the data from Greater Sydney CCP2C.

#### **Element 4 Operational procedures and process control**

We identified that WaterNSW were non-compliant (non-material) in relation to the implementation of the WQMS requirements for this element.

##### **Operational procedures**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence that demonstrates it has implemented the Modelpedia requirements in relation to procedures required for processes and activities from catchment to consumer and the operations manual. WaterNSW advised that WaterNSW have been working to implement these in a planned manner. To demonstrate implementation of the requirements, we were provided with example NOCTSO including:

- NOCTSO to take Warragamba Pipelines #1 and #2 offline concurrently for planned dual pipeline outage from 31/05/2024 to 19/06/2024 as per 2024 Joint Annual Maintenance (JAM) program
- NOCTSO to close the Nepean Tunnel at Pheasants Nest on 01/06/2024 due to the forecast of significant rainfall over the Upper Nepean Supply System that may inversely affect water quality
- NOCTSO for the Upper Canal to be taken offline for a period of approximately 8 weeks to facilitate routine maintenance works and extensive weed spraying (17/10/2023 to 08/12/2023).
- NOCTSO for moving the balance point from Springwood Reservoir to Linden Reservoir on 02/02/2024.

These provide evidence of the implementation of key Modelpedia processes.

### Operational monitoring

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the Modelpedia requirements in relation to monitoring protocols for operational performance of the water supply system.

We cross referenced a sample of monthly water quality monitoring reports for the declared and non-declared catchments against the Water Monitoring Program (CD2011/179, v7). We have provided commentary on the findings in element 5.

WaterNSW provided their water quality dashboard data (D2021/103424). We reviewed this Excel file, which contained the results for the network of the FRWSS. WaterNSW advised that the Water Monitoring Program (CD2011/179) was implemented as per program and contracts. WaterNSW confirmed there were some minor exceptions of missed samples due to wet weather access and safety. WaterNSW advised that the Samples Received Alert Report runs daily, and an automated email is generated which lists sample sites where samples have not been received within the programmed sampling frequency. An example of the automated email from the audit period was provided as evidence (D2024/79314).

A sample set of online operational data for FRWSS (screenshots of SCADA OCPs and CCPs for turbidity, free chlorine residual and pressure) for June 2024 for the Duckmaloi WTP was also viewed as evidence (D2024/82545).

For operational monitoring grab samples collected for the FRWSS, results are recorded in an excel spreadsheet, and the 'Op FRWS' tab of the WQ Dashboard FY 2023 (D2021/103424) was viewed as evidence.

### Corrective action

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the Modelpedia requirements in relation to procedures for corrective action to control excursions in operational parameters and rapid communication systems to deal with unexpected events.

Evidence of NOCTSOs were provided and the minutes of operations meetings between WaterNSW, Sydney Water and NSW Health were provided as evidence of implementing the procedures for corrective actions and of communication systems. These minutes document updates on rainfall predictions, system configuration and water quality status (13/11/2023 (D2024/79031), 29/11/2023 (D2023/161181), 15/02/2024 (D2024/9830), 08/03/2024 (D2024/79033), 14/05/2024 (D2024/79034), 23/05/2024 (D2024/33555)).

### Equipment capability and maintenance

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate implementation of the Modelpedia processes to establish programs for regular inspection and maintenance, including water quality monitoring equipment.

We requested the calibration records for the relevant water quality monitoring equipment for Oberon and the calibration records for the OCP/CCP instruments/on-line water quality monitoring associated with the Prospect, Cascades and Oberon systems. WaterNSW advised that the instruments are rotated through the catchment. We were provided with the ALS samplers calibration sheet (D2024/81323), operational



performance testing report for Prospect Dam (D2024/8153), the turbidity CCP calibration sheet (D2024/81322), the audit of CCPs and OCP instruments (D2024/81326) and a sample calibration report for Oberon VPS (D2024/81321). This showed:

- Inspection and maintenance of Warragamba pipeline, Prospect Reservoir pumping station, Oberon Dam and Cascade Dams CCPs and OCPs was undertaken as per the schedule and within the audit period.
- Records of calibration of turbidimeters within the audit period. The calibration record report for the turbidity meter at Oberon VPS (D2024/81321) was provided as evidence that it was calibrated within the audit period.
- We were provided with calibration records for electrical conductivity (EC), pH, turbidity, dissolved oxygen (DO), chlorine and temperature maintained by ALS field services.

Modelpedia notes the requirement for WaterNSW to establish a program for regular inspection and maintenance of all equipment, including monitoring equipment. We were provided with evidence of an example operational performance testing report for Prospect Dam (D2024/8153) and maintenance work orders for CCPs and OCPs (D2024/81326).

### **Materials and chemicals**

We identified non-material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (non-material) for this component are outlined below.*

The evaluation of pipe repair materials used in the FRWSS is inconsistent with Modelpedia and CD2019/36[v4], which document the requirement to comply with AS4020:2018. Recommendation 2023-09 was due by 30 June 2024, and required WaterNSW to review industry practice and assess options for replacing lead seals for mains pipeline connections during repairs and maintenance and update the WQMS process if needed. WaterNSW has not completed the recommendation, and Modelpedia and CD2019/36[v4] do not document a process for chemicals and materials to be assessed for water quality safety where AS4020:2018 cannot be met. This means that there are inconsistencies in current practice compared to the CD2019/36[v4] requirement to comply with AS4020:2018. Further commentary is provided in the review of previous recommendations section (see Recommendation 2023-09, Section 4).

*Other findings and supporting information related to this component are provided below.*

Modelpedia requires that records are maintained of stored chemicals including Safety Data Sheets, application and usage instructions, quantities stored on site, storage method, storage life and supplier details, and to specify quality assurance standards in contracts for supply of chemicals. Evidence of this as included in the technical specifications for project works on the Warragamba pipeline were provided:

- Reference to AS4020 in Excerpt - Warragamba Pipeline Contract AS4020 (D2024/110738)
- Reference to AS4020 on page 3 of Warragamba Pipeline - Appendix Q General Mechanical and Civil Requirements (D2024/110739)
- Reference to regulatory requirements on page 26 of Warragamba Pipeline - Contract WaterNSW General Specification Rev B (D2024/110743)

*Other observations related to this component are provided below.*

In element 3 of this clause we provide commentary on the NOCTSO for the October to December 2023 (D2023/99979) outage of Upper Canal, specifically that did not adequately consider water quality specific risks for the Prospect System. WaterNSW provided evidence of a risk control plan that was developed for the Upper Canal weed spraying using the Environmental Impact Assessment (EIA) for minor works template (D2023/117624, v2). The environmental approval issued for weed spraying work in the Upper Canal contained the risk control plan which states the scope of the approved activity and sets out 33 environmental



risk control measures (D2023/117624, v2). Although the need to minimise water quality impacts is noted, the focus is environmental controls, and a water quality specific risk control plan was not adequately undertaken. We have identified an opportunity for improvement.

## **Element 5 Verification of drinking water quality**

We identified that WaterNSW were non-compliant (non-material) in relation to the implementation of the WQMS requirements for this element.

### **Drinking water quality monitoring**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component. Aspects of non-material non-compliance associated with monitoring is discussed in the short-term evaluation of results section of this element in this clause.

*Findings and supporting information related to this component are provided below.*

WaterNSW provided evidence that demonstrated it had generally implemented the Modelpedia requirements in relation to the implementation of a sampling plan for each characteristic in the distribution system and water as supplied to the customer (including the location and frequency of sampling) and to ensure monitoring data are representative and reliable.

To test evidence of implementation, we tested the requirements documented in the *Water Monitoring Program Manual* (CD2011/179, v7) with those required for the FRWSS. Aspects of non-material non-compliance associated with monitoring is discussed in the short-term evaluation of results section of this element in this clause.

### **Consumer satisfaction**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided sufficient evidence to demonstrate it has implemented the Modelpedia requirements in relation to its consumer complaint and response program, including appropriate training of employees.

The weekly operations meetings for the Declared Catchment discussed under element 4 and the Operations Meetings with the FRWSS customers provide evidence of the implementation of this component. Evidence was provided which highlighted that a total of 5 water quality complaints were received for the Fish River supply in 2023/2024 (D2024/81072).

WaterNSW staff who deal regularly and directly with customers are provided with compliments and complaints management training via the MyLearning platform. A complaints and compliment course training record (D2024/80883) and a screenshot of the compliments and complaints online learning module was provided (IM2024/1876).

### **Short-term evaluation of results**

We identified non-material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (non-material) for this component are outlined below.*

WaterNSW has provided insufficient evidence to demonstrate it has maintained systems that meet the requirements of its WQMS to establish procedures for the daily review of drinking water quality monitoring



data and consumer satisfaction and develop reporting mechanisms internally, and externally, where required.

Monthly water quality reports are prepared for the various systems, and sample reports requested (November 2023, December 2023, April 2024, May 2024 and June 2024) were provided as evidence:

- Lake Oberon (D2023/163357, D2023/169076, D2024/29726, D2024/40878, D2024/51756)
- Lake Burragorang (D2023/160931, D2023/169047, D2024/29714, D2024/43057, D2024/50335)
- Prospect Reservoir (D2023/167918, D2024/24696, D2024/35644, D2024/47818)
- Lake Yurrunga (D2023/164350, D2023/167944, D2024/27324, D2024/40735, D2024/49814)
- Blue Mountains (D2023/158473, D2023/166206, D2024/33558, D2024/33631, D2024/46000)
- Fitzroy Falls (D2023/162952, D2024/232, D2024/29298, D2024/43423, D2024/49370)
- Lake Cataract (D2023/159281, D2023/167618, D2024/30019, D2024/43233, D2024/50970)
- Lake Cordeaux (D2023/160590, D2023/168656, D2024/29588, D2024/41113, D2024/48996)
- Lake Woronora (D2023/160845, D2023/167530, D2024/30549, D2024/44717, D2024/51249)
- Wingecarribee Reservoir (D2023/161138, D2023/168719, D2024/26754, D2024/40451, D2024/48291)
- Lake Avon (D2023/157438, D2023/167367, D2024/26774, D2024/44478, D2024/47145)
- Lake Nepean (D2023/157676, D2023/166560, D2024/28924, D2024/35170, D2024/50009)

The *Water Quality Data Review and Reporting Procedure* (CD2012/130, v7) outlines the process for reviewing, analysing and reporting on water quality data. This procedure outlines the appropriate steps to prepare routine water quality reports, and notes that Routine Water Quality Reports should be prepared within eight working days after the sampling event to allow for all data to be delivered into the database.

Monthly water quality reports for the various raw water supply systems were provided as evidence. In reviewing a sample of 20 reports (for Blue Mountains, Lake Woronora, Lake Avon and Lake Nepean), we noted that 13 out of 20 reports (65%) met this requirement, with one report generated more than 30 days after the sampling date (see **Table 3-16** below).

WaterNSW advised that routine water quality reports capture key analytes and were not intended to include all results and the report format had been previously agreed with customers, which includes parameters which may impact on treatment processes. Evidence was not provided that missing analytes from reports were sampled.

**Table 3-16 Analysis of sample date vs. report date for selected systems**

System monthly reporting	November 2023	December 2023	April 2024	May 2024	June 2024
Blue Mountains	SD: 7 Nov	<b>SD: 5 Dec</b>	SD: 12 Mar	<b>SD: 7 May</b>	<b>SD: 4 Jun</b>
	RD: 21 Nov	<b>RD: 15 Dec</b>	RD: 29 Apr	<b>RD: 14 May</b>	<b>RD: 11 Jun</b>
Woronora	<b>SD: 20 Nov</b>	<b>SD: 13 Dec</b>	<b>SD: 17 Apr</b>	SD: 21 May	<b>SD: 26 Jun</b>
	<b>RD: 28 Nov</b>	<b>RD: 19 Dec</b>	<b>RD: 24 Apr</b>	RD: 4 Jun	<b>RD: 3 Jul</b>
Lake Avon	<b>SD: 1&amp;2 Nov</b>	SD: 6 Dec	SD: 2&3 Apr	SD: 1&14 May	<b>SD: 5 Jun</b>
	<b>RD: 14 Nov</b>	RD: 19 Dec	RD: 16 Apr	RD: 3 Jun	<b>RD: 14 Jun</b>
Lake Nepean	<b>SD: 7 Nov</b>	<b>SD: 7 Dec</b>	<b>SD: 17 Apr</b>	SD: 7 May	<b>SD: 18 Jun</b>
	<b>RD: 15 Nov</b>	<b>RD: 18 Dec</b>	<b>RD: 24 Apr</b>	RD: 20 May	<b>RD: 28 Jun</b>

Key:

- SD: Sample date
- RD: Report date
- **Bold** – meets requirement of report within 8 working days of sampling event



A review of reports for Prospect Reservoir and Fitzroy Falls indicated that the contents of the reports were sometimes inconsistent with procedure requirements. In particular, the following items were not included in the reports:

- Fitzroy Falls
  - Long term trending – no graphical representation of historical data (item 9)
  - Non-compliances are not highlighted or noted in the data table (item 11)
- Lake Prospect
  - Long term trending – no graphical representation of historical data (item 9)

Monthly water quality reports are prepared for the Fish River system, and sample reports requested (November 2023, December 2023, April 2024, May 2024 and June 2024) were provided as evidence (D2023/165396, D2024/1256, D2024/31313, D2024/44652, D2024/51242). Review of the reports indicated that the contents of the reports were aligned with procedure requirements. However, for all sample reports reviewed, the background section states that the report collates data from the reticulation sites as well as the Duckmaloi WFP outlet [Site ID: DDUC02]. However, the actual reports only show data from the reticulation sites and the monthly monitoring data needed from DDUC02 is not available (Table 2.4 of the Water Monitoring Program (CD2011/179, v7) notes the missing data).

WaterNSW advised that checks are not currently in place to review the performance of water quality reporting compared to the stipulated program and procedure requirements (in terms of meeting reporting deadlines, required contents, and required parameters). This is noted as an opportunity for improvement.

*Other findings and supporting information related to this component are provided below.*

One exceedance of a critical control point (chlorine dosing system at Duckmaloi WFP, 26 May 2024) was recorded in the sample drinking water quality reports provided (May 2024). This critical control point exceedance was also included in the Annual Water Quality Management System Report 2023-24 (D2024/68440). This incident is further discussed in element 6.

Modelpedia reports that the annual Catchment Management Report is also submitted to IPART and published on the WaterNSW website. The Annual Catchment Management Report 2022-2023 (D2023/68041) was initially provided as evidence, while the 2023-2024 Annual Catchment Management Report was required to be published by 30 November 2024. Evidence was provided that these reports are published on the WaterNSW website:

- 2022-2023: [https://www.watarnsw.com.au/\\_\\_data/assets/pdf\\_file/0005/244553/Annual-Catchment-Management-Report-2022-2023.pdf](https://www.watarnsw.com.au/__data/assets/pdf_file/0005/244553/Annual-Catchment-Management-Report-2022-2023.pdf)
- 2023-2024: [https://www.watarnsw.com.au/\\_\\_data/assets/pdf\\_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf](https://www.watarnsw.com.au/__data/assets/pdf_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf)

### **Corrective action**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided sufficient evidence to demonstrate it has maintained systems that meet the requirements of its WQMS to establish and document procedures for corrective action in response to non-conformance or consumer feedback and establish rapid communication systems to deal with unexpected events.

The *Water Quality Incident Response Protocol* (CD2004/183, v4) provides guidance on required corrective actions and investigations. Evidence relevant to this component is discussed under element 4 in this clause.

An example of corrective actions taken in response to elevated levels of geosmin at Prospect and recorded in RACS was provided (D2024/78280).



An example of corrective actions taken in response to low chlorine and elevated turbidity in the Fish River network and recorded in RACS was provided (D2024/78271).

## **Element 6 Management of incidents and emergencies**

We identified shortcomings in the implementation of the WQMS requirements for this element. Aspects of non-compliance associated with implementation of procedures and response plans with the involvement of relevant agencies are discussed under element 3 and element 12 of this clause.

### **Communication**

We identified shortcomings in the implementation of the WQMS requirements for this component.

*Findings related to the minor shortcoming for this component are outlined below.*

We identified shortcomings in WaterNSW's implementation of the Modelpedia requirements to prepare a contact list of key people, agencies and businesses.

Modelpedia requires the WaterNSW Water Quality Contact List (D2013/94543) to be updated every six months. The contact list was distributed to NSW Health, Lithgow and Oberon for comment (D2023/78752), and subsequently completed (IM2024/1838) in August 2023, however WaterNSW did not review the contact list between January and June 2024.

*Other findings and supporting information related to this component are provided below.*

WaterNSW has provided sufficient evidence to demonstrate it has implemented the Modelpedia requirements to define communication protocols with the involvement of relevant agencies, and develop a public and media communications strategy.

WaterNSW demonstrated engagement and aligned communications with the relevant agencies through weekly meetings with Sydney Water and NSW Health as part of incident response. Evidence provided included WaterNSW briefings with SWC and NSW Health and Situation Reports (SITREPs) for the June 2024 water quality event (D2024/77865).

The Draft *Joint Operations Protocol* was reviewed during an incident exercise in May 2024 as discussed further below in this element (D2024/99979).

### **Incident and emergency response protocols**

We identified shortcomings in the implementation of the WQMS requirements for this component. Aspects of non-material non-compliance associated with this component are discussed in element 3 of this clause.

*Findings related to the minor shortcoming are outlined below.*

We identified shortcomings in WaterNSW's implementation of the requirements of its WQMS to investigate any incidents and emergencies and revise protocols as necessary.

Modelpedia requires that WaterNSW hold hot debriefs at the end of an incident and before standing down incident teams to capture immediate learnings. WaterNSW did not hold hot debriefs for the Nepean (D2024/32223) and Greater Sydney (D2024/82473) incidents. We did not sight evidence to explain why these were not undertaken.

WaterNSW did not prioritise and assign the improvement actions from the Nepean (D2024/32223) and Greater Sydney (D2024/82473) formal incident debriefs within the water quality improvement plan as required by Modelpedia. This is discussed further in element 12 of this clause.

*Other findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the Modelpedia requirements to train employees and regularly test emergency response plans.

WaterNSW participated in an incident exercise in May 2024 with Sydney Water and NSW Health (Exercise “Happy Jacks” Report (D2024/99979)). It was decided by the workshop participants on the day that they would review, edit and agree on the content of the Draft Joint Communications Protocol.

*Other observations related to this component are provided below.*

We have identified inconsistencies in WaterNSW's implementation of the requirements of its WQMS to define potential incidents and emergencies and document procedures and response plans with the involvement of relevant agencies. This is discussed in element 3 of this clause.

## **Element 7 Employee awareness and training**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this element.

### **Employee awareness and involvement**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the Modelpedia requirements to implement mechanisms and communication procedures to increase employees' awareness of and participation in drinking water quality management.

We were provided with evidence showing how water quality awareness was communicated across the organisation through a WaterNSW CEO blog from the audit period featuring water quality related information (IM2024/1879).

Modelpedia notes that the training module includes a description of the water quality policy, along with its application, responsibilities and where to find it. The water quality awareness training material provided meets the obligations stipulated in Modelpedia (D2024/77867). The process is consistent with the ADWG guidelines.

### **Employee training**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the Modelpedia requirements to ensure that employees, including contractors, maintain the appropriate experience and qualifications, identify training needs, ensure resources are available to support training programs, document training, and maintain records of all employee training.

A Water Quality Management System Mandatory Training Report (D2023/11498) was provided. The report shows the target staff and currency of training for the three water quality related training courses. This was used to calculate training performance

We were provided with the Water Quality Management System Mandatory Training Report (D2023/11498) which showed the targeted staff and currency of training for three water quality related training courses:



- Water quality awareness
- Water quality incident response
- Materials and chemicals in contact with drinking water.

This report is used to calculate training performance. At 23 July 2024, when the report was run from the eLearning system, 1,988 staff had completed the water quality awareness training and 174 staff had not. The organisational-wide percent compliance is shown in **Table 3-17**. An improvement in water quality awareness training was achieved when compared to results presented in the previous audit (from 88.7% to 94.2%).

**Table 3-17 Compliance summary for water quality training**

Topic	Water quality awareness	Water quality incident response	Materials and chemicals in contact with drinking water
% compliance	94.2%	99.5%	98.8%

The Learning & Development team maintain a Competency Dashboard which displays staff training status for eLearning and traditional training. The Water Quality Management System Mandatory Training Report (D2023/11498) provided outlined how online learning related reports could be accessed. The training report provided listed the completed and outstanding training courses for individual staff. The User Guide Competency Dashboard (D2024/79441) was provided as evidence and details the traffic light system used for reporting and generating automated reminder emails to staff. We were provided with an example of an automated email to staff which outlined the status of their required mandatory training (D2024/79440).

## Element 8 Community involvement and awareness

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this element.

### Community consultation

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has generally implemented the Modelpedia requirements in relation to assessing requirements for effective community involvement and developing a comprehensive strategy for community consultation.

In our review of the WaterNSW website we could find no information that was specific to the FRWSS in relation to the education program or water quality more generally. There is a pop up on the website with the history of the FRWSS, but it contains no information on the water filtration plant. This can be accessed from the Water and History webpage and [www.waternsw.com.au/customer-services/your-account/fish-river-customers](http://www.waternsw.com.au/customer-services/your-account/fish-river-customers). In clause 2.1.2 WaterNSW advised that the key method FRWSS customers were informed was via the Fish River Customer webpage. This webpage notes that some of the Fish River pipes only carry raw (untreated) water which is not suitable for human consumption, but contains no further information promoting water quality awareness. An opportunity for improvement is noted.

An example of a Community and Stakeholder Engagement Plan was provided for the Kangaroo Valley – Roads Drainage Bearing Project (D2024/110643).

### Communication

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.



*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the requirements of its WQMS in the implementation of an active two-way communication program to inform consumers and promote awareness of drinking water quality issues.

- The minutes of the FRWSS Joint Operating Group (JOG) meetings which include WaterNSW, NSW Health, Lithgow City Council and Oberon Council were provided (D2023/161181, D2024/9830, D2024/33555).
- The minutes of the FRWSS Operations Forums which include WaterNSW, Lithgow City Council and Oberon Council were provided (D2023/157598, D2024/165192, D2024/19170, D2024/47705).
- The minutes of the Greater Sydney JOG meetings which includes WaterNSW, NSW Health and Sydney Water were provided (D2024/79031, D2024/79033, D2024/79034).
- The Annual Water Quality Monitoring Report is available on the website:  
<https://www.waternsw.com.au/water-quality/quality/reports>
- We were provided with the Annual Catchment Management Report for 2022-2023 (D2023/68041) as evidence. The 2023-2024 Annual Catchment Management Report was required to be published by 30 November 2024 and was made publicly available at this time ([https://www.waternsw.com.au/\\_data/assets/pdf\\_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf](https://www.waternsw.com.au/_data/assets/pdf_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf)). Both annual reports are located on the WaterNSW website.
- We were provided with an example of a Fish River Customer Newsletter (dated August 2023) (D2023/79977), which focused on water prices, an update on the potassium permanganate dosing system, promoted the Fish River page, and noted the introduction of fluoride to Fish River and briefly discussed water quality guidelines and predicted water quality improvements. The WQMS states that customer newsletters are issued on the WaterNSW website and that recent newsletters are available on the website link. We could not, however, find the newsletter (or other Fish River newsletters) on the WaterNSW website.
- We could not find evidence that the customer newsletters were issued, or on the website, and the weblink in Modelpedia returned a "404 Page not found" error. We have considered this as part of maintaining the documentation and records in element 10.
- We saw evidence that FRWSS customers had been informed of project and maintenance works with an example of an update of the potassium permanganate dosing system near the Oberon Pumping Station as posted on the Fish River customers website (IM2024/1839).
- For the Kangaroo Valley pipeline upgrade, evidence was provided of communications to stakeholders including a media release (D2024/129356) informing stakeholders of the work, a sample e-mail sent to stakeholders which included a project update document (dated September 2023) (D2024/129348), and a link to the project on the WaterNSW website (<https://www.waternsw.com.au/projects/kangaroo-valley-pipeline-upgrade>).

We tested how WaterNSW promoted awareness of drinking water quality issues for FRWSS customers. WaterNSW advised:

*FRWS customers receive newsletters with their bi-annual bills, which include drinking water quality information and updates on projects affecting the Fish River pipeline.*

*The key method Fish River customers are informed is via the Fish River customer webpage.*  
(<https://www.waternsw.com.au/customer-services/your-account/fish-river-customers>)

*The Fish River Water Quality Solutions Advisory group ensures any drinking water quality issues are addressed ASAP and when needed, letters are sent to impacted customers by email or post (if no email is on file).*

*The Fish River Project Manager also keeps key external stakeholders, i.e. Lithgow and Oberon Councils and Energy Australia, apprised of any works in advance which may affect drinking water.*

*The Fish River communication approach and supporting materials is further evidenced by viewing IM2024/1839 and D2023/79977.*



## Element 9 Research and development

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this element.

### *Investigative studies and research monitoring*

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided sufficient evidence to demonstrate it has implemented the Modelpedia requirements to establish programs that increase understanding of the water supply system and use this information to improve management of the water supply system.

WaterNSW provided evidence of the implementation of the investigative programs. This evidence included:

- Implementing of in situ fluorescence (fDOM) sensors to characterise and monitor dissolved organic carbon changes in real-time to help optimise water supply to Sydney (D2024/35130, D2024/80908),
- Research around taste and odour (D2024/80325, D2023/57018),
- Predicting raw water quality in catchments via modelling and trend analysis (D2024/8301),
- Development of a swamp water balance model to quantify the water losses in an undermined swamp (D2024/64299),
- Investigating stream flow impacts from mining (D2024/66430), and
- Evaluating aluminium toxicity (D2024 43418).

WaterNSW tracks the science program project activity through project reports, factsheets, monthly reports, board reporting and deep dives. A monthly program progress review report was provided as evidence (D2024/68475). The annual review of the science program presented to the Board Committee on Sustainability and Service Delivery at the 18 October 2023 meeting was provided as evidence (D2023/148168). The Board Committee on Sustainability and Service Delivery was also presented with a deep dive of future scenarios for Sydney's drinking water catchment on 31 May 2024, which will guide catchment strategic planning and risk assessment (D2024/40874, D2024/40808).

### *Validation of processes*

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the requirements of its WQMS to validate processes and procedures to ensure that they are effective in controlling hazards and revalidate processes periodically or when variations in conditions occur.

The Modelpedia WQMS states that criteria utilised by WaterNSW for validation of key process steps are described under WaterNSW CCP tables (Validation of Critical Control Points table), and we confirmed the validation tables are presented in the *Critical and Operational Control Points for the Greater Sydney Water Supply System* (CD2021/128, v1).

The CCP tables hold the validation details for the critical control points. WaterNSW noted that deep dives on validation occur as required. A chlorine control validation report for the Duckmaloi WFP (D2021/125168) was provided as evidence of a historical deep dive.

### **Design of equipment**

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

Evidence was provided of an asset change request for considering additional mini hydro configurations (D2024/81027) and options investigations for various assets including assessment of power and automation options, instrument upgrade options, flow monitoring point options and chlorine dosing system renewal options (D2023/157530, D2024/61976, D2024/64118, D2023/79613).

Additional aspects of asset management are provided under clause 5.1.2.

### **Element 10 Documentation and reporting**

We identified that WaterNSW were non-compliant (material) in relation to the implementation of the WQMS requirements for this element.

Non-compliances in records, documents and reporting were previously identified in the 2022-23 Operational Licence Audit Report. We consider that the recurring nature of the non-compliance with limited evidence of corrective actions contributes to the high risk graded for the clause, because it provides evidence of ongoing degradation across multiple barriers, which reduces the effectiveness of the multiple barrier approach, which may result in significant adverse outcomes to public health and public safety.

### **Management of documentation and reporting**

We identified non-compliance (non-material) associated with the implementation of the Modelpedia requirements for this component. Non-compliances in records and documents were previously identified in the 2022-23 Operational Licence Audit Report. We discuss this further in the reporting component under this element and this clause.

*Findings related to the non-compliance (non-material) for this component are provided below.*

A significant proportion of WQMS documents and records provided were overdue for review, including critical WQMS documentation such as the Greater Sydney CCPs (CD2021/128) and the water quality contact list (D2013/94543). Of WaterNSW's controlled documents, as of 31 August 2024 (D2024/130004):

- 38% of controlled documents are overdue for review
- 30% of overdue controlled documents have been overdue for more than 180 days
- 26% of controlled documents with a high risk rating are overdue for review
- 22% of controlled documents with a high risk rating have been overdue for more than 180 days.

The ADWG states that records of all activities pertaining to the performance of drinking water quality management should be stored so that they can be easily accessed and reviewed. We were provided with several incorrect versions of documents (including critical documentation such as Board reports), indicating socio-technical issues with the record management system. We acknowledge that WaterNSW provided a significant amount of evidence (see Appendix C ). WaterNSW advised that the provision of incorrect document versions was due to the bulk download process for the provision of audit evidence.

We identified gaps in the implementation of corrective actions for document control reported to NSW Health and IPART in the Annual WQMS Report 2023-24 (D2024/68440). We have discussed this further in the reporting component of element 10 under this clause.

Additional non-compliances associated with documentation and reporting are discussed throughout the other elements for this clause.



## Reporting

We identified material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (material) for this component are provided below.*

### Discussion

The ADWG states that:

- Employees should be properly trained to fill out records and that internal reporting supports effective decision making across the organisation, including operations staff and management, senior executive and the board of directors.
- Effective external reporting ensures that drinking water quality management is open and transparent.
- Reporting is important to enable stakeholders to make informed judgments about the quality of drinking water and provide a basis for discussions about the priorities that will be given to improving drinking water quality, as well as assurance that improvements are made in response to identified problems.

The inconsistencies and inaccuracies, and the recurring nature of some of those non-compliances with limited evidence of corrective actions, poses a high risk to WaterNSW meeting the objectives of this licence obligation. Of concern, we have identified multiple examples where information of significance was reported to the Board and Regulators inaccurately or inadequately.

Inconsistencies in reporting were identified in the 2022-23 Operational Licence Audit. We found that several of the recommendations from the 2022-23 Operating Licence Audit are outstanding and overdue, demonstrating that WaterNSW have not appropriately planned and completed corrective actions to consistently mitigate identified risks. We consider that addressing the outstanding and overdue recommendations would assist in reducing the extent of the non-compliances for this clause, however we also identified additional new non-compliances in this audit period.

The risk profile is also elevated as we have identified several instances in reporting to both the Board and Regulators, where corrective actions were reported as being completed, however we found that several of the actions were not undertaken as reported.

Similarly, we have identified several instances in reporting to both the Board and Regulators, where performance targets were reported as being met (i.e. metrics were highlighted in green), yet WaterNSW provided insufficient evidence to confirm that the target had been met.

The Board relies on information accurately being rolled up into dashboards and summaries to help set organisational priorities. Incorrect reporting can hinder effective governance by boards.

If the Board and Regulators do not have accurate and comprehensive information reported to them, they cannot operate effectively, and there is the potential for insufficient resourcing, strategic decision-making, investment, delegations, intervention and effective oversight. This leads to a high risk of WaterNSW not meeting the public health and water quality objectives of the licence for FRWSS, and similar risks being transferred to water utilities Supplied with bulk water from WaterNSW.

Additionally, WaterNSW did not provide sufficient evidence to demonstrate that WaterNSW has implemented sufficiently mature quality assurance processes to ensure that human failure can be identified and managed to ensure that reporting to the Board and Regulators is accurate and of high quality. WaterNSW advised that some of the inconsistencies in reporting to the Board were a result of unintentional human error. We consider that human factors and errors are normal and predictable, and that WaterNSW should have managed quality assurance processes more appropriately, given the importance of the Board and Regulators having accurate and comprehensive information to inform decisions and potential risk mitigations.

We consider that there are relevant learnings from other international water utilities and water quality incidents. Following the Havelock North water quality contamination incident in 2016, which resulted in widespread illness and contributed to four deaths, the New Zealand Government established an independent inquiry. Recommendations from the Havelock North inquiry included that water suppliers should ensure that:

- leadership, governance and management understand the relevant drinking water risks and have appropriately addressed the management of those risks in their strategic decision-making, long-term planning, audit and resource allocation processes, and delegations
- staff understand the critical control points and other processes they are required to follow and the matters they are required to monitor and escalate as appropriate.

We consider these findings of relevance, as they emphasise the high levels of diligence and assurance required to protect public health, and highlight the importance of leadership, governance and management requiring accurate and comprehensive information to effectively understand and mitigate risks.

### *Reporting to the Board*

We consider the non-compliances identified are a high risk, potentially hindering the Board's ability to make informed judgements about the quality of drinking water and appropriately prioritise improvements to water quality.

The WQMS targets and performance summary dashboard contains 18 metrics reported to the Board quarterly. We sampled the accuracy and assurance of some of the metrics and identified high-risk non-compliances. Examples are provided in Table 3-18.

**Table 3-18 Examples of the material non-compliances we identified associated with reporting to the Board**

Area of material non-compliance	Aspect	Finding
<b>Inadequacies, inconsistencies and deficiencies in reporting to the Board on the status of internal audit and assurance activities</b>	Quarterly reporting to the Board	<ul style="list-style-type: none"> <li>In the WQMS targets and performance dashboard contained in the October 2023 (D2023/99496), March 2024 (D2024/129187) and June 2024 (D2024/129184) reports to the Board Committee on Sustainability &amp; Service Delivery, WaterNSW reported that it was on track to meet the target of completing six Process Health checks in 2023-24. This was inconsistent with the actual Process Health checks completed in 2023-24.</li> <li>In the WQMS targets and performance dashboard contained in the August 2024 (reporting period May to June 2024) (D2025/003856) report to the Board Committee on Sustainability &amp; Service Delivery, WaterNSW reported that it met the target of completing six Process Health checks in 2023-24. This was inconsistent with the actual number of Process Health checks completed.</li> </ul>
	Annual WQMS Health Check Report to the Board	<ul style="list-style-type: none"> <li>In the Annual WQMS Health Check Report to the Board (June 2024, D2024/78315), WaterNSW reported that it was on track to meet the target of completing six Process Health checks in 2023-24.</li> </ul>
	Discussion	<ul style="list-style-type: none"> <li>As discussed in element 11 of this clause, WaterNSW did not complete six Process Health checks in 2023-24. WaterNSW provided evidence that they completed four of the scheduled Health Checks. Of the four activities, we consider that one of those activities met the internal audit and assurance requirements.</li> <li>Gaps in the number and type of activities undertaken as part of the Process Health check program were previously identified in the 2022-23 Operational Licence Audit Report.</li> <li>The 2023-24 target of six Process Health checks per year was revised downwards from a 2022-23 target of 12 Process Health checks per year (D2023/3403). When WaterNSW revised the target, WaterNSW informed the Board that where possible management would aim to exceed the target of six Process Health checks per year (D2023/3403).</li> </ul>
<b>Inadequacies, inconsistencies and deficiencies in reporting to the Board on the progress of water quality improvement plan actions</b>	Quarterly reporting to the Board	<ul style="list-style-type: none"> <li>In the WQMS targets and performance dashboard contained in the October 2023 (D2023/99496), March 2024 (D2024/129187) and June 2024 (D2024/129184) quarterly reports to the Board Committee on Sustainability &amp; Service Delivery, WaterNSW reported that no water quality improvement plan (WQIP) actions were overdue and that it was on track to meet the target of delivering 95% of actions identified in the WQIP. This is inconsistent with actual progress of WQIP actions.</li> </ul>
	Annual WQMS Health Check Report to the Board	<ul style="list-style-type: none"> <li>In the June 2024 Annual WQMS Health Check report to the Board Committee on Sustainability &amp; Service Delivery, (D2024/78315), WaterNSW reported that no WQIP actions were overdue and that it was on track to meet the target of delivering 95% of actions identified in the WQIP. This is inconsistent with actual progress of WQIP actions.</li> </ul>

Area of material non-compliance	Aspect	Finding
	Discussion	<ul style="list-style-type: none"> <li>WaterNSW reported to IPART and NSW Health in the WQMS Annual Report 2023-24 that it only delivered 52% of the improvement actions in 2023-24. Based on our analysis of the WQIP, only 27% of actions due in the audit period were completed (see Table 3-19). Furthermore, 23 actions had no due date, and 35 actions had no status.</li> <li>We consider that there was insufficient evidence to confirm that WaterNSW effectively tracks actions, including in the WQIP as required by Modelpedia. As discussed in element 12 of this clause, we were provided evidence that actions were held and tracked in multiple formats (e.g. JOG minutes and RACS), and WaterNSW did not add actions from the C2C risk assessment or incident debriefs to the WQIP, as required by Modelpedia. We understand that WaterNSW is keeping the C2C actions in the C2C registers until a process is established to ensure they are not lost/missed. For these actions, it is unclear what happens to all identified actions and how they are tracked and reported to the Board. We consider that using progress on the WQIP implementation as a metric for corrective actions is inadequate if actions are not being added to and tracked in the WQIP (as is required by the WQMS).</li> <li>WaterNSW does not implement a consistent decision-making process for including or excluding actions identified from activities such as risk assessment findings, and water quality non-conformances. Without a consistent approach for determining which improvement items are added to the improvement plan and progressed, there is a risk that actions needed for full implementation of the drinking water quality management system may not be taken, and data used for reporting to the senior executive and Board on improvement plan progress is misaligned with actual activities.</li> <li>Non-compliances in tracking and reporting of water quality improvement actions were previously identified in the 2022-23 Operational Licence Audit.</li> </ul>
<b>Inconsistencies in reporting to the Board on CCP performance</b>	Quarterly reporting to the Board	<ul style="list-style-type: none"> <li>In the WQMS targets and performance dashboard contained in the October 2023 (D2023/99496), March 2024 (D2024/129187), June 2024 (D2024/129184) and August 2024 (reporting period May to June 2024) (D2025/003856) reports to the Board Committee on Sustainability &amp; Service Delivery, WaterNSW reported high levels of compliance with critical limits at CCPs. WaterNSW did not inform the Board that the CCP performance reporting was excluding the data from Greater Sydney CCP2C.</li> </ul>
	Annual WQMS Health Check Report to the Board	<ul style="list-style-type: none"> <li>In the Annual WQMS Health Check Report to the Board Committee on Sustainability &amp; Service Delivery (June 2024, D2024/78315), WaterNSW reported high levels of compliance with critical limits at CCPs. WaterNSW did not inform the Board that the CCP performance reporting was excluding the data from Greater Sydney CCP2C.</li> </ul>
	Discussion	<ul style="list-style-type: none"> <li>In the CCP performance reporting dashboards reported to the Board, WaterNSW excluded data from Greater Sydney CCP2C (which was unavailable during the audit period), and did not inform the Board that the data had been excluded from the reports. In our sampling, we did not test if the performance of any other CCPs were also not being appropriately reported to the Board.</li> </ul>
	Observation	<ul style="list-style-type: none"> <li>We observe that the CCP compliance dashboard reporting to the Board rolls up water quality CCPs for Greater Sydney and FRWSS with other CCPs (such as picnic areas), which are not applicable to compliance for this clause, and which we consider to have a lower potential risk to public health and public safety.</li> </ul>

Area of material non-compliance	Aspect	Finding
<b>Inconsistencies in reporting to the Board on the expected duration of non-compliance for clauses 2.1.1, 2.1.2 and 2.1.3</b>	Quarterly reporting to the Board	<ul style="list-style-type: none"> <li>In the WQMS targets and performance summary dashboard contained in the June 2024 (D2024/129184) quarterly report to the Board Committee on Sustainability &amp; Service Delivery, WaterNSW reported that a plan was in place and actions to address the non-compliance and recommendations from the 2022-23 Operational Licence Audit were expected to be completed by 30 June 2024. This date is inconsistent with scheduling of internal activities and external reporting (discussed below and in progress reporting for Recommendation 2023-02), which included scheduling beyond 30 June 2025.</li> </ul>
	Annual WQMS Health Check Report to the Board	<ul style="list-style-type: none"> <li>In the June 2024 Annual WQMS Health Check report to the Board Committee on Sustainability &amp; Service Delivery (D2024/78315), WaterNSW reported that a plan was in place and actions to address the non-compliance and recommendations from the 2022-23 Operational Licence Audits were expected to be completed by 30 June 2024. This date is inconsistent with scheduling of internal activities and external reporting (discussed below and in progress reporting for Recommendation 2023-02).</li> </ul>
	Discussion	<ul style="list-style-type: none"> <li>As discussed in Recommendation 2023-02: WaterNSW have developed a project plan (D2024/52240) to address the non-compliances (as required Recommendation 2023-01). The project schedule extends beyond 30 June 2025 (i.e. beyond the due date of Recommendation 2023-02). For example, action WQMS0662-3 is related to part c of Recommendation 2023-02, and is scheduled to be finalised by October 2025.</li> <li>WaterNSW advised that the inconsistencies in reporting to the Board on the expected duration of actions to address previous non-compliances are because the reports are prepared to give a point in time snapshot and are based on expectations and forecasts at the time of writing the report. WaterNSW advised that as the action plans were developed and the actions were progressed and further understood, it became evident that the initial timeframes imposed were not achievable as first estimated.</li> </ul>
<b>Inconsistencies in how WaterNSW reported the 2022-23 Operational Licence Audit findings to the Board</b>	Annual WQMS Health Check Report to the Board	<ul style="list-style-type: none"> <li>In the WQMS targets and performance summary dashboard contained in the Annual WQMS Health Check Report to the Board Committee on Sustainability &amp; Service Delivery (June 2024, D2024/78315), WaterNSW reported that the water quality related clauses (2.1.1, 2.1.2 and 2.1.3) were graded as compliant with minor shortcomings in the previous annual operational audit. This is inconsistent with the 2022-23 audit findings, as the three water quality clauses were graded as non-compliant (non-material).</li> <li>In the text in Section 2.5 of the Annual WQMS Health Check Report to the Board (June 2024, D2024/78315), it was correctly noted that the three clauses were graded non-compliant (non-material).</li> </ul>
	Discussion	<ul style="list-style-type: none"> <li>WaterNSW provided evidence of an excerpt of the minutes from the 12 June meeting demonstrating that non-compliances were noted by the Board committee (D2025/11247).</li> <li>WaterNSW advised that to ensure full transparency of audit results, a separate paper is provided annually to the Audit and Risk Committee, noting the results of the Operational Licence Audits (D2025/003855, May 2024). WaterNSW advised that the audit compliance error in the summary dashboard was an unintentional transcription error and WaterNSW does not agree that there was a delay in notifying senior management and the Board of these compliance results.</li> </ul>

As outlined in Table 3-18, based on our analysis of the WQIP (2023 – 10 – 2.1.3 Water Quality Improvement Plan), only 27% of actions due in the audit period were completed (see Table 3-19). Furthermore, 23 actions had no due date, and 35 actions had no status.

**Table 3-19 Summary of WQIP (2023 – 10 – 2.1.3 Water Quality Improvement Plan) action status 2023-24**

WQIP action status	Value
WQIP actions with a due date within the audit period	55
WQIP actions with no due date	23
Status 'not started'	10
Status 'ongoing'	13
Status 'in progress'	4
Status 'deferred'	1
No status	35
Status 'complete' or 'completed'	14
Status 'closed'	1
Status 'N/A'	1

### Reporting to Regulators

We consider the non-compliances identified in reporting to Regulators (summarised in this sub-section, including in Table 3-20 and Table 3-21) are a high risk, potentially hindering regulatory oversight and responses required to protect public health.

An Annual Report of the WQMS is required under Section 2.1.1 of the WaterNSW Reporting Manual and is referenced by Modelpedia. The report is to be submitted to NSW Health and IPART by 1 September each year. In the WQMS Annual Report 2023-24 (D2024/68440) provided to IPART and NSW Health, key information reported by WaterNSW was inaccurate or inconsistent, including the performance of CCPs, and the status of assurance activities and implementation of the WQMS. Examples are provided in Table 3-20 and Table 3-21.

**Table 3-20 Examples of the material non-compliances we identified associated with reporting from WaterNSW to IPART and NSW Health in the WQMS Annual Report 2023-24 (D2024/68440)**

Aspect of material non-compliance	WQMS Annual Report 2023-24 annexure reference	Finding
<b>CCP performance reporting</b>	4	<ul style="list-style-type: none"> <li>The CCP performance data reported in the WQMS Annual Report 2023-24 was inaccurate and inconsistent.</li> <li>For example, the measuring location for the turbidity CCP performance data was taken as the inlet to the WFP, not the measuring location defined in the CCP protocols.</li> </ul>
<b>CCP review, documentation and reporting, internal audit and improvement actions</b>	4	<ul style="list-style-type: none"> <li>The status of the CCP protocol review reported in the WQMS Annual Report 2023-24 was inaccurate and inconsistent.</li> <li>For example, WaterNSW reported that it undertook a full review of the CCPs for the Greater Sydney Water Supply system during 2023-24. This is not correct - the Greater Sydney CCPs were overdue for review and WaterNSW did not review them in the audit period (see discussion in element 3 of clause 2.1.1).</li> </ul>

Aspect of material non-compliance	WQMS Annual Report 2023-24 annexure reference	Finding
<b>Internal audit and assurance</b>	2	<ul style="list-style-type: none"> <li>The status of internal audit and assurance activities reported in the WQMS Annual Report 2023-24 was inaccurate and inconsistent.</li> <li>For example, WaterNSW incorrectly reported that it met the target of completing six WQMS Health Checks in 2023-24. As discussed in element 11 of this clause, WaterNSW only undertook four Health Check assurance activities, and we consider that only one of those activities met the WQMS Health Check requirements outlined in Modelpedia.</li> </ul>
<b>WQIP and corrective actions</b>	2	<ul style="list-style-type: none"> <li>The status of the WQIP action completion reported in the WQMS Annual Report 2023-24 was inaccurate and inconsistent.</li> <li>WaterNSW reported to IPART and NSW Health in the WQMS Annual Report 2023-24 that it only delivered 52% of the improvement actions in 2023-24.</li> <li>Based on our analysis of the WQIP, only 27% of actions due in the audit period were completed (see Table 4 17). Furthermore, 23 actions had no due date, and 35 actions had no status.</li> </ul>
<b>Progress of water quality improvement actions</b>	1	<ul style="list-style-type: none"> <li>See Table 3-21</li> </ul>

In addition to the findings in Table 3-20, there were several inaccuracies and inconsistencies in the reporting to NSW Health and IPART on the status of the implementation of the WQMS in 2023-24. We sampled outcomes reported in Annexure 1 of the WQMS Annual Report 2023-24 (D2024/68440), and have provided examples of the non-compliances in Table 3-21.

**Table 3-21 Examples of the non-compliances we identified in reporting from WaterNSW to IPART and NSW Health in Annexure 1 of the WQMS Annual Report 2023-24 (D2024/68440)**

WQMS ID	ADWG element	2023-2024 result/outcome reported to NSW Health and IPART in Annexure 1	Finding
<b>WQMS0396</b>	1, 6	Water quality contact list was updated every six months	<ul style="list-style-type: none"> <li>This is inconsistent with actual progress and activities undertaken.</li> <li>As discussed in elements 1 and 6 of this clause, the contact list was overdue for review and WaterNSW did not review the list between January and June 2024.</li> </ul>
<b>WQMS0402</b>	10	From July 2023, as each document is due for review the last review date is added to the bottom of the document in addition to the review date	<ul style="list-style-type: none"> <li>This is inconsistent with actual progress and activities undertaken.</li> <li>As mentioned in element 10 (Management of documentation and reporting) of this clause, we observed that this approach had not been implemented for several documents updated in the audit period. For example, both the C2C risk assessment procedure (CD2021/92[v4]) and the SCADA change management standard (CD2024/2) only contain the due review date in the footer.</li> <li>At least 22% of WaterNSW's high-risk controlled documents were overdue for review at the end of the audit period (see element 10 (Management of documentation and reporting) of this clause).</li> </ul>

WQMS ID	ADWG element	2023-2024 result/outcome reported to NSW Health and IPART in Annexure 1	Finding
<b>WQMS0407</b>	11	WSAA quality self-assessment was independently moderated.	<ul style="list-style-type: none"> <li>This is inconsistent with the actual date of the activity undertaken.</li> <li>WaterNSW advised that this was activity was undertaken around 2021.</li> </ul>
<b>WQMS0410</b>	11	Two deep dives audits are included in the annual health check program as an ongoing activity	<ul style="list-style-type: none"> <li>This is inaccurate and inconsistent with actual activities undertaken.</li> <li>As discussed in element 11 of this clause, WaterNSW undertook no WQMS Health Check deep dives in the audit period.</li> </ul>
<b>WQMS0422</b>	3	Greater Sydney CCP tables were reviewed in June 2024	<ul style="list-style-type: none"> <li>This is inaccurate and inconsistent with actual activities undertaken.</li> <li>As discussed in element 3 of clause 2.1.1 and Table 3-20, the Greater Sydney CCPs were overdue for review (due for review in January 2024) and WaterNSW did not review them in the audit period.</li> </ul>

As discussed in Table 3-18 and Recommendation 2023-02, there are inconsistencies in reporting from WaterNSW to IPART on the expected duration of actions to address the water quality non-compliances identified in the 2022-23 Operational Audit:

- WaterNSW reported to IPART in the statement of compliance 2024 letter (dated 27 August 2024) that the actions would be completed by 30 June 2025.
- As outlined in our review of the previous recommendations, several of the recommendations are overdue, and we do not consider some of the recommendations to be on track for completion by 30 June 2025.
- WaterNSW have developed a project plan (D2024/52240) to address the non-compliances (as required Recommendation 2023-01). The project plan scheduled extends beyond 30 June 2025 (i.e. after the due date of Recommendation 2023-02). We have discussed this further in Table 3-18 and the review of previous recommendations section (Section 4, Recommendation 2023-02).

WaterNSW advised that the inconsistencies in reporting to IPART on the expected duration of actions to address previous non-compliances are because the reports are prepared to give a point in time snapshot and are based on expectations and forecasts at the time of writing the report. WaterNSW advised that as the action plans were developed and the actions were progressed and further understood, it became evident that the initial timeframes imposed were not achievable as first estimated.

## Element 11 Evaluation and audit

We identified that WaterNSW were non-compliant (material) in relation to the implementation of the WQMS requirements for this element.

### Long term evaluation of results

WaterNSW has provided evidence to demonstrate implementation of the WQMS requirements for this component.

*Findings and supporting information related to this component are provided below.*

WaterNSW has provided evidence to demonstrate it has implemented the Modelpedia requirements to collect and evaluate long-term data to assess performance, identify problems, and document and report results.

We were provided with the *Annual Water Quality Monitoring Report*, which meets the requirements of this component.



## Audit of drinking water quality management

We identified material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (material) for this component are provided below.*

WaterNSW has not fully implemented the requirements of its WQMS for internal audits and the documentation and communication of audit results. Non-compliances in the activities undertaken as part of the Health check program were previously identified in the 2022-23 Operational Licence Audit Report.

Modelpedia requires that Health Checks are 'second line of defence' activities that are systematic and comprehensive in providing oversight and assurance that the WQMS objectives are being met. Parts of the WQMS 2023-24 Health Check program (D2017/87415) consisted of 'first line of defence' activities to be undertaken by business owners.

The Proposed Assurance Program 2023-24 in the Water Quality Management System Audit Program (D2017/87415) identified eight scheduled activities, as well as four potential activities if resourcing allowed (see Table 3-22). WaterNSW established a target of implementing six process health checks and two deep dives in FY2023-24. In FY2022-23, the target was 12 Health Checks. As outlined in Table 3-22, WaterNSW provided evidence that they completed four of the scheduled Health Checks, and of those four, we consider that only one of those activities met the internal audit and assurance requirements.

The ADWG states that audits involve comprehensive and systematic evaluation of activities and processes to confirm that objectives are being met. Several of the Health Check activities scheduled in 2023-24 do not meet the Modelpedia requirements to be 'second line of defence' activities that are systematic and comprehensive in providing oversight and assurance.

The Water Quality Assurance Plan (D2017/87415) sets out the process, schedule and progress for health checks on aspects of the WQMS. WaterNSW advised that delays to audits/reviews occurred during the audit period which resulted in several not being completed by their scheduled date, this was due to interruptions by business restructuring and a period where a dedicated WQMS resource was unavailable. We consider that the absence of key water quality resources highlights the importance of knowledge management across the organisation. Key water quality activities should be able to be progressed in the absence of specific staff members. The implementation on WaterNSW's WQMS should not be reliant on the availability of a single dedicated resource.

**Table 3-22 Comparison of the proposed assurance program with completed assurance activities**

Proposed Assurance Program # (D2017/87415)	Topic	Status	Comments
24-01	Currency of relevant documents in Water Quality Management System.	Reported as completed, with changes uploaded to the online Water Quality Management System (D2023/68202, D2023/68252)	D2023/68252 is an email saying that elements 1 to 3 were updated. When we tracked changes listed in D2023/68202, the changes mostly related to fixing broken URLs. We do not consider this activity a 'second line of defence' assurance activity.
24-02	Contact list review (Aug 23)	Completed in August 2023, with D2023/78752 provided as evidence.	The contact list was not reviewed between January and June 2024 (i.e. six-monthly review was missed).  We consider updating the contact list a BAU activity, not a 'second line of defence' assurance activity.

Proposed Assurance Program # (D2017/87415)	Topic	Status	Comments
24-03	Reporting of water quality incidents. Consolidating prior recommendations for input to WQIP review and actions to WQIP.	No evidence of progress within the audit period.	We consider that there was insufficient evidence to confirm that WaterNSW progressed this item in the audit period. We do not consider this activity a 'second line of defence' assurance activity.
24-04	Review of CCP reporting in Greater Sydney – as per ADWG performance reporting. Deep dive.	No evidence of progress within the audit period.	We consider that there was insufficient evidence to confirm that WaterNSW appropriately progressed this item in the audit period.
24-05	Contact list review (6 monthly review) (Feb 24)	No evidence of progress within the audit period.	This activity was not undertaken. We consider updating the contact list a BAU activity, not a 'second line of defence' assurance activity.
24-06	Duckmaloi WFP – fluoridation review.	No evidence of progress within the audit period.	-
24-07	Fish River good practice guide - site visit elements. Yearly review.	Completed in June 2024, with D2024/78546 provided as evidence.	We consider that there was insufficient evidence to confirm that WaterNSW transferred actions to the WQIP (as required by Modelpedia) and tracked them for implementation.
24-08	Shoalhaven schematic field audit	No evidence of progress within the audit period.	This activity was not undertaken.
Potential if resourcing allows	Find a procedure to review or assess where we can improve operational efficiencies and effectiveness	No evidence of progress within the audit period.	We consider updates to procedures a BAU activity, not a 'second line of defence' assurance activity.
	Training exercise – incident response training internal or with SWC	No evidence of progress within the audit period. WaterNSW advised this would be undertaken once version 5 of the Water Quality Incident Response Protocol (CD2004/183) was finalised.	We consider incident training a BAU activity, not a 'second line of defence' assurance activity.
	Joint Communications Protocol and Guidelines	WaterNSW participated in an incident exercise in May 2024 with Sydney Water and NSW Health (Exercise "Happy Jacks" Report (D2024/99979)).	We consider incident training a BAU activity, not a 'second line of defence' assurance activity.
	Review of WQMS procedures and collate documents together		WaterNSW advised that this activity is ongoing and not complete. We consider updates to procedures a BAU activity, not a 'second line of defence' assurance activity.

We consider the inadequacies and deficiencies a high-risk, potentially hindering WaterNSW's ability to identify non-compliances in system implementation.

As discussed in element 10 of this clause, WaterNSW reported to the Board in June 2024 that the targets were on track, and incorrectly reported to the NSW Health and IPART (D2024/68440) that six Health Checks



and two deep dives were completed. WaterNSW did not complete six Health Checks and only undertook one deep dive.

The inaccurate reporting of the status of the assurance activities elevates the risk profile. If the Board and Regulators do not have accurate and comprehensive information reported to them in a timely manner, they cannot operate effectively, and there is the potential for insufficient resourcing, strategic decision-making, investment, delegations, intervention and effective oversight. This could lead to a high risk of WaterNSW not meeting the public health and water quality objectives of the licence for FRWSS, and similar risks being transferred to water utilities Supplied with bulk water from WaterNSW.

## **Element 12 Review and continual improvement**

We identified that WaterNSW were non-compliant (material) in relation to the implementation of the WQMS requirements for this element.

### **Review by senior executive**

We identified material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (material) for this component are provided below.*

Evidence of quarterly reports to the Board and Annual System Health Checks are discussed in element 10 of this clause. As discussed in element 10 of this clause, there were deficiencies in the reporting of the effectiveness of the management system, including CCP performance, assurance activities and progress of improvement actions. These non-compliances potentially hindered the senior executive review of the suitability and effectiveness of the WQMS to ensure that it met the business needs and the needs of consumers and regulators. The inaccuracies and inadequacies of the reporting potentially hindered the ability of WaterNSW to effectively evaluate the need for change, such as program capital, operational and procedural improvement. We consider that this leads to a high residual risk of WaterNSW not meeting the public health and water quality objectives of the licence for FRWSS, and similar risks being transferred to water utilities Supplied with bulk water from WaterNSW.

Modelpedia also records that *The full Board receives monthly Water Quality Dashboard reports and the Executive review all reports to be provided to the Board.* We did not see evidence that confirmed this reporting occurs monthly.

### **Drinking water quality management improvement plan**

We identified material non-compliances associated with the implementation of the Modelpedia requirements for this component.

*Findings related to the non-compliance (material) for this component are provided below.*

WaterNSW has a Water Quality Improvement Plan (WQIP), and report on progress of actions to the Board (see element 10 of this clause). WaterNSW do not consistently assign and track actions for implementation (for example, assigned to specific roles with timeframes) as required by the ADWG.

Modelpedia requires that the WQIP is updated based on risk assessment findings, water quality non-conformance, critical limit exceedance, incident and emergency reports and audit outcomes. This did not occur in the audit period (Table 3-23).

We were provided evidence that actions were held and tracked in multiple formats (e.g. JOG minutes and RACS). For these actions, it is unclear what happens to all identified actions and how they are tracked and reported to the Board.

We consider that there was insufficient evidence to confirm that WaterNSW monitored improvement items for effectiveness.

**Table 3-23 Sample of actions from the C2C risk assessments and incident debriefs**

Artefact	Comments
<b>Nepean C2C risk assessment (D2024/51686)</b>	<ul style="list-style-type: none"> <li>• Actions were not added to the WQIP as required by Modelpedia</li> <li>• We consider that there was insufficient evidence to confirm that WaterNSW assigned the C2C actions to specific roles, with timeframes which were tracked for implementation</li> </ul>
<b>Illawarra C2C risk assessment (D2024/49360)</b>	<ul style="list-style-type: none"> <li>• Actions were not added to the WQIP as required by Modelpedia</li> <li>• We consider that there was insufficient evidence to confirm that WaterNSW assigned the C2C actions to specific roles, with timeframes which were tracked for implementation</li> </ul>
<b>Nepean Water Quality Incident Debrief 8 May 2024 (D2024/32223)</b>	<ul style="list-style-type: none"> <li>• Actions were not added to the WQIP as required by Modelpedia</li> </ul>
<b>April 2024 Rainfall Event - Incident Debrief Report (D2024/82473)</b>	<ul style="list-style-type: none"> <li>• Actions were not added to the WQIP as required by Modelpedia</li> </ul>

We have provided further commentary on the tracking and reporting of improvement actions in element 10 of this clause.

Without effectively implementing a system for determining which improvement items are added to the improvement plan and progressed, there is a risk that actions needed for full implementation of the drinking water quality management system may not be taken, and data used for reporting to the senior executive and Board on improvement plan progress is misaligned with actual activities.

WaterNSW has not consistently demonstrated that actions scheduled to date have been completed on time. Several Recommendations from the 2022-23 Operational Licence Audit are outstanding and overdue (see Section 4).

*Other findings and supporting information related to this component are provided below.*

WaterNSW advised that the WQIP was updated 40 times during the audit period and provided excerpts of some updates as evidence (D2025/15393, D2025/14382, D2025/14383, D2025/14384).

## Recommendations

**Recommendation 2024/2.1.3 – 1:** By 30 June 2026, implement the updated WQMS reporting processes to the Board and Regulators as per Recommendation 2024/2.1.1 – 1.

**Recommendation 2024/2.1.3 – 2:** By 30 September 2025, develop a plan to review all overdue WQMS-related controlled documents. At a minimum, the plan should allocate review priority to the relevant documents, the date by which each document will be reviewed, and assign responsibility to the relevant persons.

**Recommendation 2024/2.1.3 – 3:** By 30 September 2025, complete a review of all high-priority controlled documents identified in Recommendation 2024/2.1.3 – 2, including a review of the Greater Sydney CCP protocols.

**Recommendation 2024/2.1.3 – 4:** By 30 June 2025, review the scheduled Process Health check activities for 2025-26 to ensure that the proposed Process Health checks are a comprehensive and systematic evaluation of activities and processes (aligned to the ADWG), rather than business as usual activities such as updating contact lists, reporting of water quality incidents, updating of procedures and general training activities.

**Recommendation 2024/2.1.3 – 5:** By 31 December 2025, ensure that any reporting to the Board and Regulator on the progress of WQMS improvement actions include, at least, the progress of actions identified from C2C risk assessments, internal and tripartite incident debriefs, Health Checks, operational risk assessments, and other actions in the WQIP.



### **Opportunities for improvement**

**OFI 2024/2.1.3 – 1:** Given the extent of inconsistencies, inadequacies and deficiencies, and the recurring nature of those deficiencies, WaterNSW should consider whether additional staff are required to maintain and implement the WQMS.

**OFI 2024/2.1.2 – 2:** Provide information on the Fish River Customer webpage that details the customer education program and promotes water quality awareness amongst customers.


**OFI 2024/2.1.3 – 3:** Enhance the current water quality awareness training to include a brief explanation of microbial health-based targets (HBTs) to help inform WaterNSW staff of the potential shortfalls in water treatment processes to manage water quality risks, and the need to optimise existing treatment processes, include additional barriers and ensure ongoing source water protection.

**OFI 2024/2.1.3 – 4:** Develop an appropriate quality assurance process to review the performance of water quality reporting compared to the stipulated program and procedure requirements (in terms of meeting reporting deadlines, required contents, and required parameters).

## Clause 2.6 – Water conservation

### Clause 2.6.1

Table 3-24 Clause 2.6.1 compliance grade

Subclause	Requirement	Compliance grade
2.6.1	Water NSW must maintain its Water Conservation Strategy.	Non-compliant (non-material) 
<b>Risk</b> If WaterNSW does not maintain an effective Water Conservation Strategy, there is a risk that WaterNSW is not adequately prepared to mitigate the impacts of water supply shortages during drought, or has not identified the most cost-effective measures for water conservation. In turn, this presents a risk that the critical needs of downstream water users are not met, that inconvenience is caused for downstream water users, or that inefficient bill impacts are created.		<b>Target for full compliance</b> Evidence that WaterNSW's Water Conservation Strategy has been periodically reviewed and, if required, updated to reflect and respond to changes in internal and external environments.

#### Summary of reasons for grade

WaterNSW has in place a Water Conservation Strategy. The document footer contains a date of 'October 2018' suggesting that, in the absence of other document control information, the document has not been updated since October 2018 (i.e., as at the end of the audit period, it had not been updated in more than five years). We consider that this is a deficiency against clause 2.6.1 of WaterNSW's operating licence, which requires WaterNSW to maintain its Water Conservation Strategy.

We consider that the maintenance of a strategy comprises the following activities:

- *Periodic review and, if required, update of the strategy to reflect and respond to changes in internal and external environments.* We would expect strategic-level documentation to be updated every three years at a minimum. This expectation aligns with WaterNSW's risk-based approach to document management, where the recommended update periods for 'low risk', 'medium risk' and 'high risk' documents are three years, two years and one year respectively.

We note that, between the time of preparation of the Water Conservation Strategy and the end of the audit period, several significant events occurred within WaterNSW's internal and external environments. These included, but were not limited to, the State undergoing substantial bulk water and non-urban metering reforms; new levels of service being published for water security, robustness and reliability; and WaterNSW commencing operations under a new Corporate Strategic Plan and operating licence.

- *Regular reporting of performance against the strategy.* While WaterNSW has prepared and submitted to IPART an Annual Water Conservation Program Report for 2023 – 2024 (i.e., the audit period), the Water Conservation Strategy does not set out objectives and measures against which performance can be reported. That is, the Water Conservation Strategy does not set out how successful implementation of the strategy is to be measured, monitored or evaluated.

We consider that this is a deficiency and not a shortcoming as it is a breach of WaterNSW's operating licence requirement to maintain its Water Conservation Strategy, leading to a risk that WaterNSW is not adequately prepared to mitigate the impacts of water supply shortages during drought, or has not identified the most cost-effective measures for water conservation. Rather than being driven by a strategy that is periodically reviewed and, if required, updated – with clear objectives and measures that are regularly reported against – the iteration and optimisation of WaterNSW's water conservation activities appear to be heavily reliant on the skills and tacit knowledge of its experienced staff. Reliance on tacit knowledge poses a risk if turnover of key staff is to occur.

However, we consider that the risk posed by this deficiency is minimal and, therefore, that the deficiency is non-material.



This clause is graded as non-compliant (non-material).

### Discussion and notes

This clause requires that WaterNSW maintains a Water Conservation Strategy. WaterNSW has in place a Water Conservation Strategy (D2018/110791), which:

- Sets out its definition of 'water conservation'
- Identifies and describes 10 themes under which its water conservation activities can be categorised, such as 'Minimise operational surpluses and reduction of end of system losses', 'Minimise losses due to evaporation', 'Drive technical innovation', and 'Improvements in informing the customer'
- Outlines broad guiding principles for identifying, evaluating and selecting options for water conservation activities.

The document footer for the strategy contains a date of 'October 2018'. This suggests that, in the absence of other document control information, the document has not been updated since October 2018. That is, as at the end of the audit period, it had not been updated in more than five years.

We consider that the maintenance of a strategy comprises the following activities:

- *Periodic review and, if required, update of the strategy to reflect and respond to changes in internal and external environments.* We would expect strategic-level documentation to be updated every three years at a minimum. This expectation aligns with WaterNSW's risk-based approach to document management, where the recommended update periods for 'low risk', 'medium risk' and 'high risk' documents are three years, two years and one year respectively.

We note that, between the time of preparation of the Water Conservation Strategy and the end of the audit period, the following significant events occurred within WaterNSW's internal and external environments. We note that this list is not exhaustive.

- The State underwent significant bulk water and non-urban metering reforms
  - New levels of service ('Design Criteria') were published in January 2023 for the Greater Sydney water supply system with respect to water security, robustness and reliability
  - WaterNSW commenced operations under a new Corporate Strategic Plan (2021-25) and operating licence (2022-2024)
  - WaterNSW undertook substantial customer and community engagement, through forums such as Customer Advisory Groups, to inform its 2025 – 2030 pricing proposals and understand the priorities and behaviours of its customers and communities. Based on WaterNSW's ['Phase 3 Customer Engagement Report – Price proposals and customer price structures' report](#) (July 2024), 'better drought planning, priorities for water restrictions and water conservation are clear' was one of the top 20 priorities raised by Customer Advisory Group members in 2023.
- *Regular reporting of performance against the strategy.* While WaterNSW has prepared and submitted to IPART an Annual Water Conservation Program Report for 2023 – 2024 (i.e., the audit period), the Water Conservation Strategy does not set out objectives and measures against which performance can be reported. That is, the Water Conservation Strategy does not set out how successful implementation of the strategy is to be measured, monitored or evaluated.

#### (Recommendation 2024/2.6.1 – 1)

We consider that this is a deficiency and not a shortcoming as it is a breach of WaterNSW's operating licence requirement to maintain its Water Conservation Strategy, leading to a risk that WaterNSW is not adequately prepared to mitigate the impacts of water supply shortages during drought, or has not identified the most cost-effective measures for water conservation. Rather than being driven by a strategy that is periodically reviewed and, if required, updated – with clear objectives and measures that are regularly reported against – the iteration and optimisation of WaterNSW's water conservation activities appear to be heavily reliant on the skills and tacit knowledge of its experienced staff. Reliance on tacit knowledge poses a risk if turnover of key staff is to occur.

However, we consider that the risk posed by this deficiency is minimal and, therefore, that the deficiency is non-material. Our assessment of the level of risk is made on the basis of:

- WaterNSW demonstrating that it had progressed the implementation of its water conservation program (i.e., the immediate output of the strategy) in the audit period
- The tacit knowledge demonstrated by WaterNSW staff, during the audit interview, in considering water conservation in their decision-making processes for water delivery planning and operations.

We note an area of good practice in that, in addition to the activities set out in its water conservation program, WaterNSW has proactively undertaken the following activities to improve the efficiency of water delivery:

- Development and periodic update of the following dashboards that are provided to the Board Committee on Sustainability & Service Delivery:
  - Water Planning and Delivery Dashboard Report
  - Water Resource Monitoring Dashboards for rural valleys
  - Drought Monitoring Dashboard for Greater Sydney.
- Development and roll-out of learning and development content such as eLearning courses, a video library, and quick reference guides
- Engagement with major customers, such as irrigation corporations, to understand customer behaviours in order to influence demand management and customer-side asset solutions (e.g., the construction of off-stream 'buffer' storages) to reduce order rejection
- Collaboration with the OneBasin Cooperative Research Centre which, among other matters, aims to improve the balancing of the risks of shortfall and surplus.

These initiatives demonstrate that WaterNSW's approach to water conservation is underpinned by a collaborative continual improvement mindset. This mindset extends beyond considering infrastructure-centric solutions only, to also considering how proactive communication and engagement with internal and external stakeholders can improve holistic water conservation outcomes at the valley or regional scale.

## Recommendations

**Recommendation 2024/2.6.1 – 1:** By 30 June 2025, WaterNSW should:

- Ensure that the controlled document for the Water Conservation Plan, required under the 2024-2028 Operating Licence, is correctly maintained in WaterNSW's document management system. The document management system should generate workflows to the appropriate persons, to ensure that appropriate resources are assigned to complete the review effectively and on time.
- Develop and document clear objectives to enable WaterNSW to evaluate its performance against the objectives and outcomes of the Water Conservation Plan. WaterNSW should measure, monitor and report its performance against these objectives annually.


This recommendation should be read in conjunction with **Recommendations 2024/2.6.2 – 1** and **2024/2.6.3 – 1**.

## Opportunities for improvement

No opportunities for improvement were identified.

## Clause 2.6.2

**Table 3-25 Clause 2.6.2 compliance grade**

Subclause	Requirement	Compliance grade
2.6.2	Water NSW must maintain and implement its Water Conservation Work Program in relation to its operations under this Licence.	Compliant (minor shortcomings) 
<b>Risk</b> If WaterNSW does not maintain and implement a Water Conservation Work Program, there is a risk that the measures WaterNSW implements are not efficient and effective in achieving its water conservation objective.		<b>Target for full compliance</b> Evidence that WaterNSW's Water Conservation Work Program has been periodically reviewed and, if required, updated. Evidence that WaterNSW has appropriately progressed the implementation of its Water Conservation Work Program in the audit period.

### Summary of reasons for grade

WaterNSW has in place a Water Conservation Work Program that was developed in February 2020. However, we note the following shortcomings in relation to the maintenance and implementation of the work program:

- In comparing the Water Conservation Work Program with the implementation progress reported in WaterNSW's Annual Water Conservation Program Report 2023 – 2024, we observed that the implementation of water conservation activities in 2023/24 (i.e., the audit period) had been delayed by around two to four years.  
  
While there are specific committees in place for particular initiatives within the work program (e.g., CARM Steering Committee, WAVE program review committee), there are no overarching governance arrangements for the overall program to provide oversight of implementation progress and risks and decisions made to reprioritise and reschedule activities.
- The Water Conservation Work Program does not contain document control information. Document control information, including the documentation of scheduled review periods, is one mechanism for recording evidence of document maintenance, planned and undertaken.

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained and implemented its Water Conservation Work Program (i.e., that it has not breached its operating licence requirement) by:

- Reviewing and updating the completion timeframes, via the Annual Water Conservation Program Report, for the water conservation activities listed in its Water Conservation Work Program
- Demonstrating that it had progressed the implementation of its water conservation program in the audit period, as reported in the Annual Water Conservation Program Report 2023 – 2024.

This clause is graded as compliant (minor shortcomings).

### Discussion and notes

This clause requires that WaterNSW maintains and implements a Water Conservation Work Program in relation to its operations under its operating licence. WaterNSW has in place a Water Conservation Work Program that sets out guiding principles for water conservation activities as well as its work program for the four-year period from 2020. The work program is structured into the following four stages:

- Establishing a baseline understanding of water flows through surface water and groundwater systems, including losses
- Developing information tools and reports for the Executive, Board, key external stakeholders and broader community

3. Generating tools and knowledge to enable improved operational flexibility and reduced losses in system operations
4. Identifying asset-based solutions to deliver improved water management and water conservation outcomes.

Each stage of the work program comprises several water conservation activities. For each activity, the work program describes the planned actions, planned completion timeframe, and post-completion implementation review timeframe. The work program was developed in February 2020.

By 1 September each year, WaterNSW is required to submit an Annual Report on the Water Conservation Program to IPART in accordance with the requirements of Section 2.16 of its reporting manual. To understand the level of implementation of the work program, we reviewed the Annual Water Conservation Program Report 2023 – 2024 (i.e., the report applicable to the audit period) and compared the updated completion timeframes documented in the report with the originally planned completion timeframes set out in the Water Conservation Work Program.

Based on our review of both documents, we note the following shortcomings in relation to the maintenance and implementation of the work program (**Recommendation 2024/2.6.2 – 1**):

- In comparing the Water Conservation Work Program with the implementation progress reported in the Annual Water Conservation Program Report 2023 – 2024, we observed that the implementation of water conservation activities in 2023/24 (i.e., the audit period) had been delayed by around two to four years. For the activities listed in the 'Implementation progress' section of the report, Table 3-26 compares the planned completion timeframes as per the work program with the updated timeframes in the report.

**Table 3-26 Planned versus updated completion timeframes for water conservation activities**

Action no.	Planned completion timeframe as per Water Conservation Work Program	Updated completion timeframe as per Annual Water Conservation Program Report 2023/24
1.3	December 2020	June 2024
1.4	December 2021	June 2023 / June 2024
2.1	June 2020	Completed in 2023/24
3.2	2021	June 2024
3.4	2021	June 2025

We note that, while there are specific governance committees in place for particular initiatives within the work program (e.g., CARM Steering Committee, WAVE program review committee), there are no overarching governance arrangements for the overall program to provide oversight of implementation progress and risks, including decisions made to reprioritise and reschedule activities.

- The Water Conservation Work Program document has not been updated since February 2020, and it does not contain document control information. Document control information, including the documentation of scheduled review periods, is one mechanism for recording evidence of formal document maintenance, planned and undertaken.

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained and implemented its Water Conservation Work Program (i.e., that it has not breached its operating licence requirement) by:

- Reviewing and updating the completion timeframes, via the Annual Water Conservation Program Report, for the water conservation activities listed in its Water Conservation Work Program
- Demonstrating that it had progressed the implementation of its water conservation program in the audit period, as reported in the Annual Water Conservation Program Report 2023 – 2024.

## Recommendations

**Recommendation 2024/2.6.2 – 1:** By 30 June 2025, WaterNSW should develop and document overarching governance arrangements for the water conservation program to:

- a. Identify the executive or senior leadership roles with accountability for the successful implementation of the water conservation program



- b. Provide those leadership roles with oversight of implementation progress and risks
- c. Identify the decision-making authorities and guiding criteria for reprioritising and rescheduling water conservation activities to respond to emergent risks and opportunities and changes in staff availability.


This recommendation should be read in conjunction with **Recommendations 2024/2.6.1 – 1** and **2024/2.6.3 – 1**.

#### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 2.6.3

**Table 3-27 Clause 2.6.3 compliance grade**

Subclause	Requirement	Compliance grade
2.6.3	Water NSW must review, update and report on its Water Conservation Work Program referred to in clause 2.6.2.	Compliant (minor shortcomings) 
<b>Risk</b> If WaterNSW does not review, update and report on the Water Conservation Work Program, there is a risk that WaterNSW's ongoing activities are not optimised in respect of achieving its water conservation objective and that the successful implementation of the work program is not evaluated.		<b>Target for full compliance</b> Evidence that WaterNSW's Water Conservation Work Program has been periodically reviewed and, if required, updated. Evidence that WaterNSW has reported on its Water Conservation Work Program in accordance with the requirements of its reporting manual.

### Summary of reasons for grade

WaterNSW has reviewed and updated its Water Conservation Work Program via preparing and submitting an Annual Water Conservation Program Report to IPART for the audit period. However, we note the following shortcomings in relation to reporting on the Water Conservation Work Program:

- The Water Conservation Strategy and Water Conservation Work Program outline broad guiding principles for identifying, evaluating and selecting options for water conservation activities. However, the Annual Water Conservation Program Report 2023 – 2024 does not clearly articulate the 'long list' of options identified for conserving water within system operating arrangements and the comparison of those options, as required by WaterNSW's reporting manual.
- The Annual Water Conservation Program Report 2023 – 2024 does not clearly describe the water conservation activities added to the work program after its original inception. The report also does not clearly articulate the changes made to the completion timeframes for the activities included in the original work program. That is, the report does not 'describe and explain any proposed changed to the water conservation activities', as required by WaterNSW's reporting manual.

This clause is graded as compliant (minor shortcomings).

### Discussion and notes

This clause requires that WaterNSW reviews, updates and reports on its Water Conservation Work Program. As mentioned for Clause 2.6.2, WaterNSW is required under Section 2.1.6 of its reporting manual to submit an Annual Water Conservation Program Report to IPART by 1 September each year. The reporting manual also sets out the required contents for the report. WaterNSW reviews and updates its Water Conservation Program via preparing and submitting to IPART its Annual Water Conservation Program Report.

That is, WaterNSW has demonstrated that it has reviewed and updated its Water Conservation Work Program by:

- Reviewing and updating the completion timeframes, via the Annual Water Conservation Program Report, for the water conservation activities listed in the work program
- Undertaking additional water conservation activities that were not explicitly described in its original work program, demonstrating evidence of review and update to include newly identified and selected activities.

We reviewed the contents of the Annual Water Conservation Program Report 2023 – 2024 against the requirements of Section 2.1.6 of WaterNSW's reporting manual. Based on our review, we note the following



shortcomings in relation to reporting on the Water Conservation Work Program (**Recommendation 2024/2.6.3 – 1**):

- The Water Conservation Strategy and Water Conservation Work Program outlines broad guiding principles for identifying, evaluating and selecting options for water conservation activities. However, the Annual Water Conservation Program Report 2023 – 2024 does not clearly articulate the ‘long list’ of options identified for conserving water within system operating arrangements and the comparison of those options, as required by WaterNSW’s reporting manual.
- The Annual Water Conservation Program Report 2023 – 2024 does not clearly describe the water conservation activities added to the work program after its original inception. The report also does not clearly articulate the changes made to the completion timeframes for the activities included in the original work program. That is, the report does not ‘describe and explain any proposed changes to the water conservation activities’, as required by WaterNSW’s reporting manual.

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated continual improvement of its Water Conservation Work Program through considering and implementing new initiatives. Examples of such initiatives include, but are not limited to, developing and rolling out learning and development content, and engaging with major customers to influence demand management and customer-side asset solutions.

### **Recommendations**

**Recommendation 2024/2.6.3 – 1:** By 30 June 2025, WaterNSW should:

- a. Clearly articulate the process including specific and actionable principles for identifying, evaluating and selecting options for water conservation activities, together with the process for assessing new options identified in any given year
- b. Clearly articulate the process including specific and actionable principles for assessing the outcomes and/or benefits of water conservation activities included in the water conservation program.

This recommendation should be read in conjunction with **Recommendations 2024/2.6.1 – 1** and **2024/2.6.2 – 1**.


### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 2.7 – Research on catchments

### Clause 2.7.1

Table 3-28 Clause 2.7.1 compliance grade

Subclause	Requirement	Compliance grade
2.7.1	<p>Water NSW must maintain a program of research for each Declared Catchment Area which:</p> <ul style="list-style-type: none"> <li>a. relates to catchments within that Declared Catchment Area generally and in particular their health;</li> <li>b. is consistent with its objectives under section 6 of the Act; and</li> <li>c. assists Water NSW to discharge its functions under sections 7(1)(g) and 7(1)(h) of the Act.</li> </ul>	<p>Compliant</p> 
<p><b>Risk</b></p> <p>Not fully understanding the hazards and risks to catchments, based on the specific context of each Declared Catchment Area, may mean that hazards and risks are not managed appropriately</p>		<p><b>Target for full compliance</b></p> <p>WaterNSW must show that it has identified appropriate programs of research, that are targeted to each Declared Catchment Area and are based on the section 6 objectives of the Water NSW Act 2014 (NSW) as well as section 7(1)(g) and 7(1)(h) requirements.</p>

#### Summary of reasons for grade

WaterNSW understands its obligations in relation to Declared Catchment Area generally and in particular in relation to catchment health. The water quality science program is targeted to the relevant obligations under the Act and helps to demonstrate implementation of its functions. Outcomes of the research program show sound demonstration of benefits and outcomes for the Declared Catchment Area. WaterNSW's consultative approach to prioritising themes for inclusion in the science program presents a sound evidence base for future research. There is an opportunity to further enhance the Science Program by developing and maintaining a centralized database/register of all projects (including both projects that were approved and not approved), such that WaterNSW can easily review and track decision making, but this is not considered a shortcoming.

Sufficient evidence is available to confirm that the requirements have been met.

This clause is graded Compliant.

One opportunity for improvement was identified.

#### Discussion and notes

Under Section 6 (1) (c) of the WaterNSW Act (2014), WaterNSW has an obligation *to ensure that declared catchment areas and water management works in such areas are managed and protected so as to promote water quality, the protection of public health and public safety, and the protection of the environment.* Furthermore, other obligations (under S7 (g) and (h)) are *to protect and enhance the quality and quantity of water in declared catchment areas, and to manage and protect declared catchment areas and water management works vested in or under the control of Water NSW that are used within or for the purposes of such areas.* These obligations are largely met via the delivery of the WaterNSW Science Program 2021 - 2025 (D2020/118316 2021-2025 Science program).

The Science Program includes consideration of catchment health, cyanobacteria management, customer needs and treatability, environment, community and reputation, but is currently limited to research applicable to the Greater Sydney Water Supply Catchment (i.e. there is currently only one research program as there is only one declared catchment).

WaterNSW advised that projects are proposed based on business needs drawn from audits, project recommendations, consultation with the business, and alignment to the research program goals which were approved by the Board under the 2021-2025 science program business case. The program includes fundamental research, applied research, and technology trials run by internal staff or through research partnerships. Activities are publicly reported in the Annual Catchment Management Report (e.g.



Annual Catchment Management Report 2022-2023 (D2023/68041) and Annual Catchment Management Report 2023-2024 (available at [https://www.watarnsw.com.au/\\_\\_data/assets/pdf\\_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf](https://www.watarnsw.com.au/__data/assets/pdf_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf))).

WaterNSW advised that projects are scoped using the programs scoping template to capture the need, background, costs, stakeholders, scope, milestones and deliverables. Examples of documents prepared to define a project's scope were presented as evidence (D2024/61163 and D2024/66572 Project Scope 2021-2025 Science Program Review). These documents outline basic details of the project and amongst other items requires project proponents to define the project purpose, project background, project objectives, project deliverables, project requirements, scope (included and excluded), assumptions, related or interdependent projects, key stakeholders, major risks, high level milestones and key dates.

WaterNSW advised that projects are then prioritised and approved for implementation. During the audit period, the 2021-2025 Science Program had 13 projects completed, 10 new projects commenced and at the end of the period there was a total of 27 active research projects.

Projects included investigating emerging risks around taste and odour, aluminium toxicity metrics, health of swamps impacted by undermining, and servicing data needs around water quality data in events for modelling and trend analysis purposes. Evidence of research project reporting was presented which confirmed the beneficial outcomes of the research on catchments, including:

- D2024/43418 Aluminium Catchment Audit Response Final Report. This report on evaluating aluminium toxicity was provided as evidence to respond to a particular catchment audit recommendation.
- D2024/64299 Cairns et al 2024 - Mining impacts peatland hydrology reducing discharge and water storage volumes
- D2024/66430 Stream flow impacts from mining – GAM Summary Fact Sheet
- D2023/57018 Operational use of chlorophyll a sensors in Lake Burragarang
- D2024/8301 Predicting raw water quality in catchments – final report (UTS)
- D2024/80325 High geosmin at DWA Winter-Spring 2023 - DNA analysis summary

An annual program review is undertaken and presented to the Sustainability & Service Delivery Board Committee (D2023/148168). The annual review informs the Board Committee of the progress and outcomes generated by the science program and includes feedback and discussion on new and completed projects, including project outcomes and benefits to WaterNSW. A review of the 2021-2025 Science Program commenced as part of a gap analysis to inform priorities for the final year of the current program (financial year 2025). Along with the core research themes of catchment resilience and integrated water management, WaterNSW has noted that the Science Program is responsive to emerging risks and business improvement opportunities. Emerging trends were reported to the Sustainability & Service Delivery Board (D2024/80350).

WaterNSW acknowledged that the research undertaken as part of the Science Program is only successful when it is adopted by the business or communicated properly to customers and stakeholders who need the knowledge generated by the research. Where appropriate, business case documents are prepared to take research forward, and various reports and publications are prepared to share and communicate knowledge.

The Annual Catchment Management Report 2023 (D2023/68041) notes WaterNSW related research publications, including 9 conference presentations, 4 publications, 1 paper and 2 posters, while the Annual Catchment Management Report 2024

([https://www.watarnsw.com.au/\\_\\_data/assets/pdf\\_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf](https://www.watarnsw.com.au/__data/assets/pdf_file/0008/256481/Annual-Catchment-Management-Report-2023-2024.pdf)) notes 4 journal articles and 2 conference presentations.

Research findings are implemented on an as needs basis as not all research leads to implementable findings. For the audit period, WaterNSW has noted implementation of findings via:

- Briefing the Board Committee (e.g. Catchment Futures) (D2024/40874, D2024/40808, D2023/148168, D2024/80350)
- Predicting raw water quality in catchments using data models (D2024/8301)
- Sensors implemented to routine monitoring program after trialing (fDOM and BGA sensors) (D2024/3513, D2024/80908, D2023/57018)



- Recommendations made to business owner about the suitability of utilising total aluminium as a metric of toxicity risk (D2024/43418).

For example, the objective of implementing in situ fluorescence (fDOM) sensors to characterise and monitor dissolved organic carbon changes in real-time was to help optimise water supply to Sydney (D2024/35130, D2024/80908).

Board oversight of the program is ongoing with an annual program update (D2023/148168), specific topic deep dives (e.g. Catchment Futures – developing scenarios to guide catchment strategic planning and risk assessment - D2024/40874, D2024/40808) and an annual emerging trend in water quality science presentation (which included discussion on regenerative practices (e.g. circular economy – wastewater as a product), climate adaptation (e.g. water banking for drought – managed aquifer recharge), water quality technology (e.g. using Earth observation satellites and ground-based water sensors to monitor and forecast harmful events such as toxic algal blooms, blackwater and runoff contamination (D2024/80350).

Evidence of commitment to assigning adequate resources to the research program was provided through including the Board Committee Annual Science Program Review and Science program progress report which included evidence of budget allocation and expenditure (D2023/148168 and D2024/68475).

Tracking research results occurs at several stages including monthly (Science program monthly report D2024/68475) and annually to the Board Committee on Sustainability and Service Delivery (D2023/148168) and IPART (D2023/68041). The evidence sighted confirmed that tracking occurs in practice and meets requirements.

Water NSW advised that the ongoing review of the rolling program ensures emerging risks and business needs can be included with planned projects deferred or brought forward based on priorities. This requires improved record keeping of scientific research and development activities and associated outcomes/decisions taken. Consequently, an opportunity exists to further improve the documentation and record keeping of the current decision-making process (e.g. project go/no-go register).

We observed that at the end of the auditing period (June 2024), WaterNSW had already commenced the development of the Science Program for 2025-2030.

We consider that WaterNSW has provided sufficient evidence to demonstrate compliance with the requirements of the research on catchments clause (2.7.1). We have identified one opportunity for improvement.

## Recommendations

No recommendations were identified.


## Opportunities for improvement

**OFI 2024/2.7.1 – 1:** Consider the development and maintenance of a centralised database/register of all projects (including both projects that were approved and not approved – i.e. both go and /no-go), such that WaterNSW can easily review and track decision making.

## Clause 3.2 – Water supply

### Clause 3.2.1

Table 3-29 Clause 3.2.1 compliance grade

Subclause	Requirement	Compliance grade
3.2.1	Water NSW must ensure that any water Supplied to Customers is Supplied in accordance with a relevant Water Quality Management System, any relevant Customer Supply Agreement, and any relevant arrangements with Sydney Water established under section 25 of the Act.	Non-compliant (non-material) 
<b>Risk</b> Failure to supply water in accordance with the relevant Water Quality Management System, Customer Supply Agreement and the agreed supply arrangements with Sydney Water, as appropriate, may compromise the quality of water supplied to end users resulting in a high risk to public health.		<b>Target for full compliance</b> WaterNSW must show that it has supplied water in accordance with the relevant WQMS, relevant customer supply agreements and arrangements with Sydney Water established under s 25 of the Act.

#### Summary of reasons for grade

We focused our sampling for this clause on supply of water to Sydney Water and Oberon Council. A non-compliance (non-material) has been identified against the requirement for WaterNSW to supply water to Sydney Water in accordance with the Customer Supply Agreement. We are satisfied that WaterNSW has supplied water in accordance with the relevant arrangements for Oberon Council.

Inconsistencies, inadequacies, and deficiencies of Supply to Sydney Water have been identified. We consider the residual risk to be low after considering the controls WaterNSW have implemented during the audit to minimise the risk. Gaps for Supply to Sydney Water include:

- WaterNSW did not provide Sydney Water with annual investment and project schedules, including the scope of any project, which will or may impact raw water supply availability and/or water quality by 1 April 2024, which is inconsistent with the requirements of Section 21.2 of the Water Supply Agreement with Sydney Water (D2013/101721). WaterNSW advised that in practice the information sharing has been focussed on maintenance work that can impact the other party, and that capital works interfaces are managed through the Long Term Capital Operating Plan (LTCOP). We consider that this mitigates the risk of the non-compliance. We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that an area for potential improvement was timely information sharing and input to facilitate capital works for both organisations, particularly with respect to works at critical interface areas.
- Schedule 2 of the *Raw Water Supply Agreement* (D2013/101721) sets out the raw water quality standards for each Sydney Water WFP. WaterNSW advised that any exceptions to the agreed targets are managed in accordance with the *Water Quality Incident Response Protocol* (CD2004/183, v4). There are inconsistencies in the water quality standards and notification requirements across the two instruments (e.g. turbidity standards for Illawarra WFP and Woronora WFP). We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that an area for potential improvement was decision making and prioritisation of supply configuration changes during modes of dam operation (in particular flood operations).
- We analysed a sample of monthly water quality reports that were provided as evidence. There was an inadequacy in monthly assessments, with 10 out of the 15 (67%) reports sampled not meeting the requirement of monthly assessment by the 12th business day of the month (as per the water supply agreement with Sydney Water (D2013/101721)).
- WaterNSW did not commence a review of the Raw Water Supply Agreement in the audit period, which is inconsistent with the requirements of Section 15(1) of the agreement (D2013/101721) which required a review to have commenced by 14 October 2023. WaterNSW advised that they planned to commence a review in FY24-25. We note that in stakeholder feedback provided to



IPART (letter dated 15 July 2024), Sydney Water noted that the existing Raw Water Supply Agreement was a decade old, and that a refresh of the agreement may benefit customers and improve the way the two organisations work together.

## Discussion and notes

WaterNSW advised that they ensure (where appropriate) that water is delivered in compliance with the WQMS through a range of processes including

- Schematics showing key processes for each supply node - CCPs/CCP instruments
- Catchment to Customer risk assessments that are conducted jointly with major customers and NSW Health
- Preventive measures such as proactive supply configurations and catchment management
- Incident planning and response
- Training and development of key staff
- Water quality data collection and water quality database exceedance reporting
- Reporting such as operational reports which provide current water quality, prognosis and recommendations for operational improvements
- Regular meetings including formal minutes of meeting discussions and decisions

The following water supply agreements and associated protocols were provided as evidence:

- Water Supply Agreement with Sydney Water (D2013/101721)
- Raw Water Supply Protocols – Sydney Water (CD2007/2, v3)
- Water Supply Agreement with Oberon (DOC12/32669)
- Lithgow City Council Water Supply Agreement (D2023/50517)
- WaterNSW/Lithgow CC Operating Protocols for the Fish River Water Supply (D2016/132993)

There were no new major agreements established during the audit period.

WaterNSW advised that the agreements and associated protocols may include communications, incident management, water quality monitoring and reporting, drought planning, and operational information.

Review of the water supply agreements and protocols has shown that the relevant performance standards are clearly described in the supply agreements, and that the raw water supply agreements include a schedule of agreed parameters. The protocols also establish communication requirements including formal meetings, planning, day to day operations and incident management.

## Sydney Water

Several NOCTSO were provided as evidence and demonstrating of adherence to water supply agreement protocols, including:

- NOCTSO to open Warragamba Outlet #3 11/4/24 (D2024/25115)
- NOCTSO to close Warragamba Outlet #3 9/4/24 (D2024/24452)
- NOCTSO for closing Nepean tunnel for rain event 2/4/2024 (D2024/2226324)
- NOCTSO for Nepean Tunnel RTS 9/4/24 (D2024/24081)
- NOCTSO for Nepean Screen Change 7/4/24 (D2024/23849)
- NOCTSO for switch of FRWS and Upper Cascades destrat fan 5/4/24 (D2024/23289)
- NOCTSO for Woronora outlet change 4/24 (D2024/23012)
- NOCTSO for Cataract outlet change 4/24 (D2024/22886)



- NOCTSO to turn Nepean and Avon aeration off due to rain forecast 4/24 (D2024/22869)
- NOCTSO for returning Nepean aeration to service June 24 (D2024/49021)
- NOCTSO to reconfigure pipeline to resume supply to Prospect WFP and open V40 18/6/24 (D2024/46854)
- NOCTSO to change of supply for Orchard Hills Filtration plant 14 June 2024 (D2024/47046)
- NOCTSO for reconfigure Pipelines to Orchard Hills Contingency June 24 (D2024/46639)
- NOCTSO to take Warragamba Pipelines #1 and #2 offline concurrently for planned dual pipeline outage from 31/05/2024 to 19/06/2024 as per 2024 Joint Annual Maintenance (JAM) program (D2024/42143)
- NOCTSO to close the Nepean Tunnel at Pheasants Nest on 01/06/2024 due to the forecast of significant rainfall over the Upper Nepean Supply System that may inversely affect water quality (D2024/43970)

The *Water Quality Incident Response Protocol* (CD2004/183, v4) includes notifications and responses for agreed triggers developed based on relevant water quality standards, including alert levels for preferred operational targets agreed with customers. WaterNSW advised that the protocol has alert level thresholds which will trigger notifications well before *Raw Water Supply Agreement* limits are reached.

In terms of water quality, the Water Monitoring Program (CD2011/179, v7) specifies the required monitoring of water supplied to Sydney Water. Operational reporting of water quality is as per the Data Review and Reporting Procedure (CD2012/130). Sydney Water is provided with information that includes the latest water quality data and recommendations for operational changes to improve raw water quality. A sample compliance report for Sydney Water for June 2024 (D2024/53493) was provided as evidence.

WaterNSW advised that additional information is provided to Sydney Water during events and incidents. We were provided with evidence of water quality non-conformances and of water quality reports and updates provided during incidents:

- Registry of non-conformance for Water Quality (D2024/78957)
- Evidence of Water Quality Report for Lake Nepean during incident (D2024/79750)
- Evidence of Lake Nepean Water Quality update during incident (D2024/79749)
- Evidence of Water Quality Report for Warragamba during incident (D2024/79748)
- Examples of Water Quality incidents in NOGGIN (D2024/79746)

In terms of reporting, monthly compliance reports are provided to customers as required under the *Raw Water Supply Agreements*, and water quality performance is discussed in appropriate meetings. Minutes of various meetings with customers and stakeholders were provided as evidence including:

- Meeting Minutes with Water NSW, Sydney Water and NSW Health: Situational reports for June 2024 event (D2024/77865), December 2023 (D2023/168081), November 2023 (D2023/159660), 9 November 2023 (D2023/156254), 4 April 2024 (D2024/23055), 19 April 2024 (D2024/27260), 30 May 2024 (D2024/43883), 23 May 2024 (D2024/40572), 12 May 2024 (D2024/32357), 6 May 2024 (D2024/31016), 3 May 2024 (D2024/30767).
- Fish River JOG meeting minutes: May 2024 (D2024/33555), February 2024 (D2024/9830), November 2023 (D2023/161181), September 2023 (D2023/78596)
- FRWS Ops Forum Minutes: June 2024 (D2024/47705), March 2024 (D2024/19170), December 2023 (D2023/165192)

We requested evidence of communications of water quality reports to all stakeholders for May 2024. We were provided with the Lake Oberon and Duckmaloi weir water quality report for May 2024 as evidence. This report was shared with WaterNSW customers and stakeholders including Sydney Water, Oberon, Energy Australia, Lithgow, and NSW Health.

We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that areas for potential improvement include:

- Improved decision making and prioritisation of supply configuration changes during modes of dam operation (in particular flood operations), and
- Improved transparency regarding asset condition and maintenance schedules on critical assets.

WaterNSW advised that water is supplied to Sydney Water in accordance with the arrangements established in the *Raw Water Supply Agreement* (D2013/101721). Section 3 of the *Raw Water Supply Agreement* establishes that Protocols supplement the agreement. WaterNSW advised that the *Raw Water Supply Protocol* (CD2007/2, v3) provides a framework for staff of Sydney Water and WaterNSW to adhere to the *Raw Water Supply Agreement* and work together to provide the best quality of water to consumers given constraints. The failure to fully comply with “preferred operational ranges” for water quality parameters is not considered to constitute a non-compliance or shortcoming for the purposes of this assessment.

WaterNSW advised that:

- They have a good working relationship with Sydney Water operations.
- The Joint Asset Management Program is developed every 5 years and reviewed regularly to ensure critical assets are maintained in a timely manner while water supply is not interrupted.
- Go/No go risk assessments are conducted jointly before any asset outage.

Meeting notes and an associated spreadsheet for a Go/No Go Dual pipeline risk assessment (D2024/80268, D2024/80267) was provided as evidence.

During the audit interviews, WaterNSW advised that WaterNSW and Sydney Water mutually agree and share outage plans on a regular basis, with fortnightly meetings generally held at officer level to keep all parties aware of upcoming outages. Several examples for April and May 2024 were provided as evidence (D2024/23055, D2024/27260, D2024/43883, D2024/40572, D2024/32357, D2024/31016, and D2024/30767).

WaterNSW advised that some assets are deliberately taken offline before floods to avoid damage by debris without interrupting supply. One such asset was the Nepean Tunnel. WaterNSW advised that during periods of reduced water quality in Warragamba Dam, supply from the pipelines is isolated for supply to Prospect WFP, while supply is sourced from the Upper Nepean Dams via the Upper Canal and Prospect Reservoir. Several NOCTSOs were provided as evidence (e.g. D2024/42143, D2024/43970, D2024/25115, D2024/24452, D2024/2226324, D2024/24081).

#### *Sharing of project information and maintenance with Sydney Water*

Section 21.2 of the WaterNSW Water Supply Agreement with Sydney Water requires that WaterNSW provide Sydney Water with details of all planned maintenance and outage works which would impact Sydney Water by 1 April 2024. WaterNSW sent a formal notification to Sydney Water, ahead of time (in February 2024). The correspondence and outage plan were provided as evidence (D2025/2408), and did not meet the requirements of the Water Supply Agreement as the evidence did not contain details on the scope of the projects which will or may impact raw water supply availability and/or water quality requirements. WaterNSW advised that in practice the information sharing has been focussed on maintenance work that can impact the other party, and that capital works interfaces are managed through the LTCOP. We consider that this mitigates the risk of the non-compliance. We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that an area for potential improvement was timely information sharing and input to facilitate capital works for both organisations, particularly with respect to works at critical interface areas.

#### *Sharing of plant and equipment failure with Sydney Water*

We have provided commentary on the failure of CCP monitoring equipment (Greater Sydney CCP2C) in clause 2.1.3.

We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that an area for potential improvement was transparency regarding asset condition and maintenance schedules on critical assets.

### Water quality standards for Sydney Water WFPs

Schedule 2 of the *Raw Water Supply Agreement* sets out the raw water quality standards for each Sydney Water WFP. Section 18.2 of the *Raw Water Supply Agreement* requires that if WaterNSW is unable to supply raw water to Sydney Water in accordance with the specifications set out in Schedule 2 because of a Water Quality Event, then as soon as reasonably practicable (and in any event no later than 12 hours) after the Water Quality Event arises, WaterNSW must notify Sydney Water of the extent to which it is unable to perform its obligation. WaterNSW advised that any exceptions to the agreed targets are managed in accordance with the *Water Quality Incident Response Protocol* (CD2004/183[v4]). We compared a sample of water quality parameters across the *Raw Water Supply Agreement* and *Water Quality Incident Response Protocol* for Cascade WFP, Illawarra WFP and Woronora WFP. We identified inconsistencies in parts of the water quality standards across the two instruments for two of the three sampled WFPs (see Table 3-30):

**Table 3-30 Sample of inconsistencies with water quality standards**

WFP	Parameter	Water quality standard set out in Schedule 2 of the <i>Raw Water Supply Agreement</i> – maximum value	Water quality levels set out in the <i>Water Quality Incident Response Protocol</i>		
			Alert level	Minor / significant incident level	Major or crisis incident level
Illawarra	Turbidity (NTU)	10	>3.5-11	>11-20	20
Woronora	Turbidity (NTU)	10	>3-11	>11-20	20

### Sharing of water quality results with Sydney Water

We also identified an inadequacy in WaterNSW's provision of monthly water quality reports. We analysed a sample of monthly water quality reports that were provided as evidence. 10 out of the 15 (67%) reports sampled did not meet the requirement of monthly assessment by the 12th business day of the month (as per the water supply agreement with Sydney Water) (see Table 3-31).

**Table 3-31 Sample of monthly water quality reporting meeting agreed upon date**

System monthly reporting	November 2023	December 2023	April 2024	May 2024	June 2024
<b>Upper Nepean</b>	<b>SD: 7 Nov</b> <b>RD: 15 Nov</b>	<b>SD: 7 Dec</b> <b>RD: 18 Dec</b>	SD: 17 Apr RD: 24 Apr	<i>SD: 7 May</i> <i>RD: 20 May</i>	SD: 18 Jun RD: 28 Jun
<b>Woronora</b>	SD: 20 Nov RD: 28 Nov	<i>SD: 13 Dec</i> <i>RD: 19 Dec</i>	SD: 17 Apr RD: 24 Apr	SD: 21 May RD: 4 Jun	SD: 26 Jun RD: 3 Jul
<b>Blue Mountains</b>	<i>SD: 7 Nov</i> <i>RD: 21 Nov</i>	<b>SD: 5 Dec</b> <b>RD: 15 Dec</b>	SD: 12 Mar RD: 29 Apr	<b>SD: 7 May</b> <b>RD: 14 May</b>	<b>SD: 4 Jun</b> <b>RD: 11 Jun</b>

Key:

- SD: Sample date
- RD: Report date
- **Bold** – meets requirement of monthly assessment by 12<sup>th</sup> business day
- *Italic* – potentially meets requirement of monthly assessment by 12<sup>th</sup> business day (interpretation dependent)

### Review of agreement with Sydney Water

We identified a shortcoming with the review of the water supply agreement with Sydney Water. WaterNSW did not commence a review of the Raw Water Supply Agreement with Sydney Water in the audit period. This is inconsistent with Section 15(1) of the agreement which required a review to have commenced by 14 October 2023. WaterNSW advised that they planned to commence a review in FY24-25. We note that in stakeholder feedback provided to IPART (letter dated 15 July 2024), Sydney Water noted that the existing Raw Water Supply Agreement was a decade old, and that a refresh of the agreement may benefit customers and improve the way the two organisations work together.



## **Oberon Council**

Oberon Council provided comment to IPART (email dated 7 October 2024) about the volume of water being supplied by WaterNSW to Oberon Council's system and the resulting detrimental effects on the membranes Oberon Council had constructed into the existing system.

WaterNSW advised that the issue had been brought to their attention by Oberon Council. During the site visit to Oberon Dam and the pump station, WaterNSW advised that the pumps pre-date Oberon Council's treatment plant and were originally designed to deliver water to a reservoir.

WaterNSW advised that when the refurbished pump was brought online it was pumping at a higher flowrate.

Section 11 of the *Water Supply Agreement with Oberon Council* (DOC1232669) requires WaterNSW to inform Oberon Council of its planned maintenance schedule and take into account any representations or concerns made by Oberon Council. WaterNSW provided evidence which showed that the pump refurbishment work was done in consultation with Oberon Council and was timed to be undertaken while Oberon Council were replacing membrane filters in their own water treatment plant (D2025/003860). WaterNSW provided evidence of the temporary pump and VSD that were installed while the pump was repaired. This included equipment and materials that Oberon Council supplied for that temporary installation to fit in with the planned work. The evidence shows that before the initial pump refurbishment took place, (i) Oberon Council were informed of the planned maintenance schedule, (ii) WaterNSW provided Oberon Council with the opportunity to make representations or raise concerns about the planned maintenance, and (iii) WaterNSW took into account any representations or concerns made by Oberon Council about the planned maintenance. This meets the requirements of Section 11 of the *Water Supply Agreement with Oberon Council*.

## **Other Customers**

WaterNSW provided evidence of:

- Operational Interface Meeting Minutes between WaterNSW, Wingecarribee Shire Council and Goulburn Mulwaree Council: March 2024 (D2024/13241), July 2023 (D2024/77880)
- WaterNSW and Shoalhaven City Council Meeting Minutes: 8 February 2024 (D2024/8333), 31 July 2023 (D2024/73820)

WaterNSW advised that a summary of all water quality monitoring is prepared each year and published on the WaterNSW website (<https://www.watnsw.com.au/about-us/our-business/corporate-governance/annual-reports>).

## **Recommendations**

**Recommendation 2024/3.2.1 – 1:** By 30 June 2025, Water NSW should, in consultation with Sydney Water and relevant stakeholders, commence a review of the Raw Water Supply Agreement with Sydney Water to better align with the operational practices and needs of both organisations.

**Recommendation 2024/3.2.1 – 2:** By 30 June 2027, Water NSW should, in consultation with Sydney Water and relevant stakeholders, either (i) update and implement the Raw Water Supply Agreement with Sydney Water to ensure the agreement better aligns with the operational practices and needs of both organisations; or (ii) update practices to ensure alignment with the requirements of the existing Raw Water Supply Agreement.

## **Opportunities for improvement**

**OFI 2024/3.2.1 – 1:** In reviewing the Raw Water Supply Agreement with Sydney Water, Water NSW should, in consultation with Sydney Water and relevant stakeholders, consider:

- a) Timely information sharing and input to facilitate capital works for both organisations, particularly with respect to works at critical interfaces
- b) Transparency regarding asset condition and maintenance schedules on critical assets




- c) Decision making and prioritisation of supply configuration changes during modes of dam operation (e.g. flood operations)

## Clause 5.1 – Asset management system

### Clause 5.1.2

**Table 3-32 Clause 5.1.2 compliance grade**

Subclause	Requirement	Compliance grade
5.1.2	Water NSW must fully implement the Asset Management System and carry out all relevant activities in accordance with the Asset Management System.	Compliant 
<b>Risk</b> Failure to implement the Asset Management System presents a high risk of reduced levels of service, higher operating risk, and costs not being minimised across their lifecycle. WaterNSW's assets include assets with a high consequence of failure such as dams and assets vital to water quality. Therefore, non-compliance with this clause presents a high risk.		<b>Target for full compliance</b> Evidence that WaterNSW carries out all relevant activities in accordance with the Asset Management System

#### Summary of reasons for grade

Based on observations during the field verification visits and the discussion presented in respect of this obligation, WaterNSW demonstrated that it had continued to implement and carry out its activities in accordance with its Asset Management System during the audit period.

We consider that the implementation of the asset management governance committee is a positive step to demonstrate senior management support for the ongoing implementation and continual improvement of the asset management system. This is supplemented by the availability of key performance indicator (KPI) reports and PowerBI dashboards to provide insights into the state and effectiveness of the asset management system.

The quality of the asset management plans (AMP) and asset class plans is appropriate for this portfolio of assets, and they provide sufficient direction to guide the implementation of the chosen strategies. The AMPs acknowledge there are still data gaps within the asset registers, particularly for condition data and criticality data. This should be a focus for WaterNSW to continue to improve over time (**OFI 2024/5.1.2-1**).

The implementation of the Field Services mobility application for the monitoring teams and maintenance crews provides the opportunity for improvements in data collection, particularly the collection of asset condition information. This opportunity should be leveraged to help improve the asset data available within the system to contribute towards asset management decision making.

This clause is graded as Compliant.

#### Discussion and notes

WaterNSW was most recently recertified against the international standard, ISO 55001:2014 Asset management – Management systems – Requirements, on 12 January 2023. The certification is valid until 9 January 2026. WaterNSW undertakes annual third-party surveillance audits to ensure compliance with the standard and that activities are being carried out in accordance with the Asset Management System.

WaterNSW's Strategic Asset Management Plan (SAMP) (CD2015/468) provides the alignment between the Asset Management Objectives, Corporate Objectives and the Asset Management Policy.

#### Leadership and governance

We were provided with the current asset management policy (CD2015/488), which is valid until 2026. Amongst other items, it notes the following actions that articulate the need to ensure the asset management system is implemented effectively:

- Apply the Asset Management System to all physical assets



- Ensure relevant data and information is captured and stored in a common systematic and efficient manner, for the purposes of informed and timely decision making
- Ensure asset investment is supported by traceable and transparent decision-making processes, including associated relevant asset criticality, capability and condition information and data analysis.

WaterNSW implemented a revised organisational structure early in the audit period. This structure now has the operational, asset planning and delivery, water planning and delivery, and major projects teams all reporting to the Executive Manager Operations. This operational change consolidates the asset management functions, providing an opportunity for these teams to work together to deliver a unified asset management approach.

In March 2024, WaterNSW introduced an asset management governance committee that meets monthly. The committee consists of a chair and up to 20 representatives, 13 of which are core members, and the rest being guests. The object of the committee is to discuss all aspects of asset management, including maintenance, planning and the Enterprise Asset Management System (EAMS). A summary is then provided to the leadership team. The governance committee has a terms of reference document (CD2024/185) articulating these requirements, and we consider that this is a positive step in the implementation of asset management governance and leadership. The governance committee now manages the asset management improvement register (D2023/159083), which was provided to us.

Separately, there is an asset advisory group which includes three external representatives. This group oversees the internal asset management works. Annual reporting on asset performance and system health is provided to the WaterNSW Board.

Relevant managers and supervisors at all levels are required to demonstrate active and visible leadership in the application of the Asset Management System. Each manager responsible for the asset management of specific classes of assets is required to observe the requirements of the Asset Management System and its implementation. Roles, responsibilities and authorities are defined in the SAMP.

WaterNSW provides services to, and is impacted by, a wide range of stakeholders. The SAMP outlines in broad terms the importance of stakeholder management to its asset management system. We were provided with a copy of WaterNSW: Internal and External Interested Stakeholders FY 2022-23 (D2018/15546). This spreadsheet is comprehensive and covers the following:

- Role in relation to WaterNSW
- Applicable compliance/stakeholder requirements
- Needs and expectations of stakeholders
- Communication strategy
- Risk if requirements have not been implemented
- Opportunities/existing risk controls
- Management system
- Responsible L3 manager.

WaterNSW has a schedule (D2019/112790) and a procedure (CD2011/163) for undertaking assurance audits of its management system. The schedule notes that an audit on disposal management was undertaken on 10 April 2024 with the outcomes captured in D2024/34980 (not provided). Undertaking of internal audits is a prudent step to monitor the implementation of the asset management system.

### **Asset planning**

A total of 11 asset management objectives have been defined in the SAMP to support the corporate objectives and to guide the asset management policy principles. Each of WaterNSW's asset management objectives has specific asset management measures that support achieving the objectives. Version 10 of the SAMP was in place during the audit period.

WaterNSW has completed the process of transforming the SAMP into the Modelpedia format to align with the other management systems. The work of implementing this change occurred during the audit period, with the system going live just after the audit period.

The asset class strategies provide strategic direction for each asset class for how the assets within a class should be managed throughout their lifecycle to optimise risk, performance and cost. Through the process of determining the risk, performance and cost trade-offs for each asset class, the asset class strategies then provide important input into WaterNSW's expenditure proposals.

For this year's audit, we were provided with a copy of the following Asset Class Strategies:

- CD2019/226 Major Water Supply Pipelines
- CD2019/228 HV Power Transformers
- CD2020/110 Valves and Pressure Regulators
- CD2020/50 Retaining Wall
- CD2020/51 Roads
- CD2020/53 Tunnels
- CD2020/58 Bridges
- CD2021/1 Gates, Stoplogs, Baulks and Bulkheads
- CD2021/44 HV Variable Speed Drives & Motors
- CD2021/8 Low Voltage Power Distribution
- CD2021/99 Weirs
- CD2022/70 Cranes and Lifting
- CD2023/29 Pumps

To facilitate consistency in document structure and content, WaterNSW has developed an Asset Class Procedure. This structure typically includes:

- Introduction
- Asset Class Level of Service and Functional Objectives
- Asset Class Performance Assessment
- Asset Class Profile and Condition
- Asset Risk
- Asset Criticality
- Whole of Life Asset Class Strategy
- Appendices with more detailed information where appropriate.

WaterNSW has now developed 28 asset class strategies; there were 20 asset class strategies at the time of the previous audit. The asset class strategies provide a basis for managing the asset class over its lifecycle, including optimising risk, performance and cost. The plans seek to align the levels of service with the asset management objectives and establish the necessary data to manage each class. WaterNSW approached the development of the documents on a prioritised basis, starting with the most critical classes and those for the predominant assets in the overall portfolio. During the audit we discussed how the improvement strategies were converted into actions. WaterNSW provided a flowchart based on Appendix B of the SAMP to show how this was achieved within the Asset Management System.

The most recent plan supplied (pumps – CD2023/29) was approved on 29 June 2023, just prior to the audit period. We consider the asset class strategies to be of a high standard, with this example providing appropriate information and data that encapsulates the pumping network maintained by WaterNSW. WaterNSW informed us that asset class strategies are reviewed by a third-party consultancy, led by the Asset Engineering team. This initiative further demonstrates WaterNSW's commitment to continual improvement.

The Fish River Long Term Strategy (D2024/125823) was provided; though dated as July 2024 (outside the audit period), the majority of the work to develop this strategy would have been undertaken within the audit period. The plan acknowledges the assets are in poor condition and investment will be needed over



the next 20 years to meet desired levels of service. However, there is uncertainty as to the future demand, as two major customers (Energy Australia and Lithgow City Council) potentially may exit the scheme in the future. The other major customers are Sydney Water and Oberon Council. There are very few minor customers on this scheme (circa 200) limiting available revenue to fund the required renewals. The plan outlines six potential scenarios that may emerge from customers entering or exiting the scheme. For each scenario the asset requirements were outlined, and costs were modelled. An adaptive approach is suggested, with regular reviews to accommodate whichever scenario occurs in the future. Overall, the preparation of this strategy demonstrates an application of the long-term capital planning process in accordance with the asset management system.

Three Asset Management Plans were provided for this audit:

- D2024/84037 AMP – Fish River
- D2024/84044 AMP – Lachlan Valley
- D2024/84046 AMP – Murray-Lower Darling Valley.

The structure and content of the AMPs are appropriate for these artefacts and present the direction required to manage the assets to achieve the asset objectives while meeting the customer requirements. The Fish River AMP reflects the asset concerns noted in the long-term strategy by outlining an increasing number of work orders and the poor condition of assets within the scheme, particularly pipelines. Pipe breaks are a noted issue, with 17 breaks in 2023/24. This is reflected in the forecast capital expenditure, with \$30 million allocated to pipeline renewals in the forward period of 2025/26 – 2029/30. WaterNSW still has the challenge of determining how to manage ageing infrastructure, particularly those listed as being of lower criticality. While run to failure can be an appropriate strategy at times, it should be determined that is the active strategy engaged for a cohort of assets and not the result of inaction.

Of note (as discussed below), there are still data gaps in condition data and criticality ratings which are acknowledged within the Fish River AMP. For example, Duckmaloi Weir is noted as having 80% of assets not assessed for criticality and 80% of assets not assessed for condition, and Oberon Dam has 35% of assets not assessed for criticality and 43% of assets not assessed for condition (at the time the AMP was published). WaterNSW should consider implementing a holistic data improvement plan that focuses on a step change in condition data for assets to better inform the planning process (**OFI 2024/5.1.2 – 1**).

WaterNSW's development of valley-based AMPs marks a step change in enabling it to better understand where specifically its data gaps lie and how those data gaps may impact on asset management decision making at the valley level. WaterNSW has recognised and identified actions to address these gaps through its AMS (Asset Management System) Improvement Action Register (D2023/159083), having noted specific improvement actions for the collection of condition and criticality data within the forward three-year period. As WaterNSW has progressed work in the audit period to improve its visibility of data gaps, identified actions to address these gaps, and is currently developing a broader asset planning framework into which condition and criticality data will form an input, we consider that these data gaps do not currently constitute a non-compliance or shortcoming. We suggest that, at the next audit, IPART review the progress of WaterNSW's asset data improvement actions (including actions relating to condition and criticality data) to ensure that WaterNSW is not only actively progressing towards closing this gap, but also utilising this data to inform asset planning and asset management decision making.

On audit, a discussion was held regarding the planning process and the triggers for projects to be entered into a long list. The available asset data is then used to assess and refine this to a short list with a five-year horizon. A detailed list is then created with a one–two-year horizon for an implementation plan. The draft 5 Yearly Plan (D2024/80698) and the major outage plan for 2022/23 (D2024/80693) were provided as example evidence of project tracking and the resulting schedule from the implementation plan.

As noted earlier in this section, WaterNSW is currently developing an updated asset planning framework that was due for release in October 2024 and that will consist of the agreed planning processes, systems, tools, data, and governance used to manage the planning function.

The asset performance and health reports shown in this year's audit are more advanced than those observed in the previous audit, showing continual improvement in the implementation of the Asset Management System.

## Risk management

WaterNSW applies a risk-based approach to its asset management decision making. An asset criticality rating is assigned to all new assets and recorded in EAMS. We were provided with a copy of the Asset Criticality Rating Procedure (CD2015/331 (v3)) which is aligned with the corporate risk framework and provides a consistent framework for applying a criticality rating to an asset. The calculation of asset criticality involves determining the maximum potential consequence of failure across different categories including safety, capability/service delivery, environment, compliance, financial impact, and reputation. WaterNSW acknowledges that there are data gaps and is working to improve the data set. Evidence was provided (D2024/125821) that 52% of functional locations within EAMS have at least one criticality rating assigned.

On audit, we discussed with WaterNSW the *Security of Critical Infrastructure Act 2018* (Cth) (SOCI Act) and how WaterNSW is managing the delivery of its compliance obligations with consideration of asset criticality. WaterNSW advised that it is currently updating its criticality framework to align with the SOCI Act. It is expecting to have an updated asset list in the coming year based on the new framework and is considering that each valley be viewed as a system to enable the criticality review to take place. WaterNSW undertook an assurance review to evaluate how they complied with the SOCI Act (D2024/127892). The review found that WaterNSW had adequately considered the SOCI Act and listed a number of recommendations, focussed on updating the critical infrastructure risk management plan.

## Operations and maintenance management

Services are delivered through North, South and Sydney (North/South) teams. Operations and maintenance practices are guided by a range of procedures, manuals and works instructions which sit under the Asset Management System policy framework within a hierarchy of controlled documents, as illustrated in Figure 9 of the SAMP. The site visit to Cascade Dams and Oberon Dam provided the audit team an opportunity to view implementation of these documents/processes in practice. Further details are provided in Section 2.

The deployment of the Field Services mobility application to EAMS has enabled real-time capture of data and is minimising staff administration workload. Field Services has been implemented for all asset maintenance and services sites and water monitoring teams. Further details are provided in Section 2.

Maintenance planning is undertaken with a 12-week forward view. The maintenance planning team uses a graphical planning board to review and schedule the work orders. Once they are approved for execution, they are sent to the Field Services mobility app. The completion rates of work orders and the type of maintenance work (preventative, breakdown, etc.) are tracked, but cost data and hours worked on each job are not tracked. Operating expenditure is monitored at a higher level, but currently costs are not assigned to individual work orders. This would allow expenditure on a per asset basis to be assessed and analysed, providing further insight into potential improvement in the approach to maintenance and problematic assets. WaterNSW should consider implementing costs at the work order level to better track the expenditure on each asset (**OFI 2024/5.1.2 – 2**).

A key performance indicator report on EAMS (D2024/125838) was provided showing data from November 2023 to October 2024. The report graphically illustrates completion rates for preventative and corrective maintenance work orders, both of which were above (i.e., met) the listed target. The only metric to noticeably dip below the target was 'schedule completion' of work orders, though this was in September 2024 and October 2024, outside the audit period. In general, this report indicates work orders are being monitored and allows transparency for leadership teams to take action as required.

Work order WO00261536 (D2024/129361) was provided showing an example of breakdown maintenance and included relevant photographs.

## Asset condition assessment

WaterNSW's maintenance staff record asset condition as they undertake maintenance tasks as part of the preventative maintenance program. Where appropriate, this assessment is supplemented by more detailed risk-based engineering/reliability assessments. The approach is guided by WaterNSW's Condition Assessment Manual (CD2015-335[v2]) where methodologies documented in industry-based manuals are applied at an appropriate level. The overall asset condition grading is based on rating six individual condition attributes.

As evidence, we were provided with screenshots showing the condition assessment of a butterfly valve on the Warragamba pipeline (D2024/125843). We observed that this asset was listed as critical and had a condition rating assigned. Other examples of work orders with condition assessments were discussed in Section 2. As previously noted, data presented in the asset management plans demonstrates there



are still large gaps in the condition data set throughout the asset register. This is noted as an area of focus for WaterNSW.

A comprehensive dam safety surveillance program is in place to meet the dam safety regulations applicable to WaterNSW's declared dam assets. We were provided with the following dam surveillance reports as evidence of the implementation of the dam safety program:

- D2024/17967 Upper Cascade Dam Intermediate Surveillance Report – November 2023
- D2024/19925 Oberon Dam Intermediate Report – August 2023
- D2024/617 Middle Cascade Dam Intermediate Surveillance Report – July 2023.

### **Information management**

WaterNSW utilises a range of systems to manage its assets with the primary system being EAMS, which is the repository of the asset register and the work management system. WaterNSW is fully aware of the critical nature of reliable data to facilitate evidence-based asset management decision making. The immediate focus is to improve the asset hierarchy, assess criticality, and address data gaps and reliability, with the aim of EAMS becoming the single source of truth. Data improvement will support investment decisions/optimisation in the capital planning process. During the audit we viewed and were provided with screenshots of various assets and work orders in EAMS, and we were able to view its application during the field inspection (refer to Section 2).

On audit, there was discussion regarding EAMS and various influencing factors, such as the development of an asset information standard, governance processes for data, and improvements in reporting. This discussion indicated to us that WaterNSW is actively seeking to improve its information management to support the decision-making processes within the asset management system.

Another avenue of improving asset data is through the collection of information at the end of a project. A new process document for the handover of assets and their data from project to operations has been developed (CD2024/281). While issued outside the audit period (October 2024), it demonstrates continual improvement to identify and close gaps as WaterNSW seeks to improve its asset data.

### **Asset management awareness and competence**

All eligible staff are required to undertake a mandatory eLearning Asset Management System Awareness module. Training is tied to positions/roles within the asset management system. We were provided with a copy of the eLearning Module content (D2024/125820). We were advised that 1,250 staff had completed the awareness training. We were informed that nine staff had completed the Asset Management Council's Asset Management System training course.

WaterNSW has a dam safety surveillance accreditation program in place, with all new site staff that undertake dam safety inspections required to be accredited. WaterNSW stated it is now developing an asset management system accreditation program.

### **Recommendations**

No recommendations were identified.

### **Opportunities for improvement**


**OFI 2024/5.1.2 – 1:** WaterNSW should consider implementing a holistic data improvement plan that focuses on a step change in condition data for assets to better inform the planning process.

**OFI 2024/5.1.2 – 2:** WaterNSW should consider implementing costs at the work order level to better track expenditure on each asset.

## Clause 6.4 - Advance notification of changes to flow release patterns

### Clause 6.4.1

Table 3-33 Clause 6.4.1 compliance grade

Subclause	Requirement	Compliance grade
6.4.1	Water NSW must maintain an effective system to provide advance notification of any significant changes to flow release patterns from its Water Management Works to Customers and other stakeholders that have registered to be notified of such changes.	<b>Non-compliant (non-material)</b> 
<b>Risk</b> Failure to maintain an effective system to notify Customers and other stakeholders that have registered to receive notification of relevant changes to flow release patterns poses a risk of adverse impacts to public safety and property.	<b>Target for full compliance</b> All significant changes to flow release patterns at Wingecarribee Reservoir have been notified as required. Notifications without a significant change in flow release patterns are avoided. Registration is easy and the system operates effectively.	

#### Notes relevant to the audit of clause 6.4.1

IPART directed that the audit scope of this clause was to be limited to a review of advance notification for Wingecarribee Reservoir only.

The audit grade should not be interpreted as providing an indication of the level of compliance or risk at other Water Management Works during the audit period.

#### Summary of reasons for grade

WaterNSW uses the Early Warning Network (EWN) System to notify customers and stakeholder of changes to flow release patterns.

Non-compliances for this clause include that WaterNSW did not provide registered Customers and stakeholders with any of the advance notifications for Wingecarribee Reservoir that should have been provided (as per the Wingecarribee Reservoir EWN instructions D2024/125613 and D2024/125610). The following events should have been notified:

- High regulated releases (increased flow) for flows to the Nepean via Glenquarry Cut increasing on 11/05/2024.
- High regulated releases (decreased flows) for flows to the Nepean via Glenquarry Cut decreasing on 15/05/2024.
- High regulated releases (increased flow) for flows to the Nepean via Glenquarry Cut increasing on 23/05/2024.
- High regulated releases (decreased flows) for flows to the Nepean via Glenquarry Cut decreasing on 18/06/2024.
- High regulated releases (increased flow) for flows to Warragamba via Wingecarribee River increasing on 31/05/2024.
- High regulated releases (decreased flows) for flows to Warragamba via Wingecarribee River decreasing on 24/06/2024.

WaterNSW have defined a high-regulated release for Wingecarribee Reservoir as when their operations impact landholders downstream. We consider not providing advance notification of significant



changes to flow release patterns a risk as the potential impacts to downstream landholders may include impacts to public safety and property.

We consider that WaterNSW has not maintained an effective system for Wingecarribee Reservoir, as WaterNSW advised that the notification thresholds are not aligned with risk thresholds and need to be reviewed.

We consider that WaterNSW has provided evidence to demonstrate, that for Wingecarribee Reservoir specifically, the flow rate, depth and velocity associated with these missed notifications, results in a low residual risk to public safety and property.

## Discussions and notes

WaterNSW uses the EWN Notification System (<https://www.waternsw.com.au/supply/ewn>) to meet the requirements of this clause.

There are two methods for how to register for notifications listed on the WaterNSW EWN webpage:

- If you have an email address – preferred method, this will give you a password and allow you to change your details and registrations at [www.ewn.com.au](http://www.ewn.com.au).
- If you do not have an email address – this method does not give you a password and you need to contact 1300 662 077 and customer service can update your details for you. You will receive a call verifying your identity.

The EWN Notification System provides automated notifications of flow releases from the Water Management Works (defined in clause 3.1 of the licence) through:

- an SMS message to a mobile phone
- a landline text to voice message
- an email.

EWN allows the same clear concise message to be sent to all subscribers that have registered for the service. WaterNSW has EWN instructions for their dams at a regional level. During the audit interview, WaterNSW described that the EWN process has several manual inputs.

## Advance notification for Wingecarribee Reservoir

WaterNSW have defined advanced notification requirements for significant changes to flow release patterns for Wingecarribee Reservoir in EWN – Instructions – Wingecarribee Reservoir (D2024/125613 and D2024/125610).

An example of the notification wording in the EWN instructions is:

- **Email:** This is a Wingecarribee Reservoir flow increase notification.
- Releases via Wingecarribee River and/or Glenquarry Cut are planned to increase from **YY YYY** ML/day to **ZZ ZZZ** ML/day by 00:00 AM/PM on **day date month YYYY in increments of 50 ML/d**.
- **SMS:** Wingecarribee Reservoir releases are planned to increase via Wingecarribee River and/or Glenquarry Cut from **YY YYY ML/d to ZZ ZZZ ML/s** on **DD/MM/YY in increments of 50 ML/d**.
- **Voice to Text:** This is an operational alert. Water, New South Wales Wingecarribee Reservoir is **increasing** flows via Wingecarribee River and/or Glenquarry Cut. Releases are planned to **increase** from, **XX XXX** Mega litres per day, up to, **YY YYY** Mega litres per day, by, **00, a. m/p m day, date, month, year**. For more information, go, to, w w w dot water N S W dot. Com. dot . A. U. This is an operational alert. Water, New South Wales, Wingecarribee Reservoir is **increasing** flows. Releases are planned to **increase** from, **XX XXX** Mega litres per day, up to, **YY YYY** Mega litres per day, by, **00, a. m/p m day, date, month, year**. For more information, go, to, w w w dot water N S W dot. Com. dot . A. U.

The Wingecarribee EWN instructions document notification triggers for flow release patterns as outlined in Table 3-34.



**Table 3-34 Notification categories outlined in the Wingecarribee Reservoir EWN instructions (D2024/125613 and D2024/125610)**

Notification category	Trigger (ML/d)
High regulated releases (increased flows)	50-600
High regulated releases (decreased flows)	<50
Flood release (commencement of spill)	spill
Flood release (at the end of flood operations)	cease

WaterNSW have defined a high-regulated release for Wingecarribee Reservoir as when their operations impact landholders downstream.

We were provided with flow data for Wingecarribee Reservoir (D2024/125608 035 and D2024/125609) and cross-checked to see if notifications were provided in accordance with the EWN instructions for Wingecarribee Reservoir for the audit period.

Inconsistencies for this clause include that WaterNSW did not provide registered Customers and stakeholders with any of the advanced notifications for Wingecarribee Reservoir that should have been provided in the audit period. The following events should have been notified according to the Wingecarribee Reservoir EWN instructions (D2024/125613 and D2024/125610):

- High regulated releases (increased flow) for flows to the Nepean via Glenquarry Cut increasing on 11/05/2024.
- High regulated releases (decreased flows) for flows to the Nepean via Glenquarry Cut decreasing on 15/05/2024.
- High regulated releases (increased flow) for flows to the Nepean via Glenquarry Cut increasing on 23/05/2024.
- High regulated releases (decreased flows) for flows to the Nepean via Glenquarry Cut decreasing on 18/06/2024.
- High regulated releases (increased flow) for flows to Warragamba via Wingecarribee River increasing on 31/05/2024.
- High regulated releases (decreased flows) for flows to Warragamba via Wingecarribee River decreasing on 24/06/2024.

We consider not providing advance notification of significant changes (as defined in WaterNSW's relevant EWN procedure) to flow release patterns a risk, as the potential impacts to downstream landholders may include impacts to public safety and property.

During some of the events that should have been notified, discharges to both the Nepean via Glenquarry Cut (on 08/06/2024) and Warragamba via Wingecarribee River (on 13/06/2024 and 14/06/2024) were ten times higher than the advanced notification threshold defined by WaterNSW.

WaterNSW advised that there are gauging stations on each stream downstream of Wingecarribee Dam, and that WaterNSW believe that the actual risk associated with the high regulated release thresholds for Wingecarribee Reservoir is not high. WaterNSW advised that:

- on the Glenquarry Cut, gauge 2122341 provides an accurate record of flows since 1992. The cease to flow level is 0.584 m and a flow of 50 ML/d equates to a level of 0.81 m. In other words, a flow of 50 ML/d would see the water level rise by 22.6 cm. A flow of 600 ML/d equates to a level of 1.34 m, meaning a further rise of 53 cm in water level compared to 50 ML/d. By way of comparison, flows in the Glenquarry Cut peaked at 2.324 m in June 2016 at a flow of 1,893 ML/d.
- on the Wingecarribee River at Sheepwash Bridge, gauge 212275 has been in operation since 1972. The cease to flow level is 0.234 m and a flow of 50 ML/d equates to a level of 0.73 m. In other words, a flow of 50 ML/d would see the water level rise by 49.6 cm. A flow of 600 ML/d equates to a level of 1.08 m, meaning a further rise of 35 cm in water level compared to 50 ML/d. By way of comparison, flows in the Wingecarribee River at Sheepwash Bridge peaked at 2.525 m in March 2022 at a flow of 14,093 ML/d.



- all data from these gauges is publicly available via WaterNSW WaterInsights and Realtime data websites.
- across the state WaterNSW issues between 200 and 300 EWN messages each year, and that these are usually for much larger releases from rural storages where WaterNSW consider that there is a greater threat to rural properties and public safety.

WaterNSW have defined the high-regulated release notification thresholds for Wingecarribee Reservoir as when their operations impact landholders downstream (D2024/125613 and D2024/125610). WaterNSW have advised that they do not consider that their operations impact landholders downstream during high-regulated releases from Wingecarribee Reservoir, and that the high-regulated release thresholds are therefore incorrectly defined. This supports our finding that WaterNSW has not maintained an effective system for Wingecarribee Reservoir, as required by this clause.

WaterNSW provided evidence to contextualise the risk of missing all high-regulated release EWN's for Wingecarribee Reservoir in the audit period (D2025/19712):

- WaterNSW define swift water as water flowing faster than 1 m/sec and greater than 500 mm in depth (CD2015/476[v8]).
- Flows of 500 ML/d are within the channel banks at both the Wingecarribee River (Sheepwash bridge) and Glenquarry Creek (Alcorns) sites.
  - Based on a flow of 500 ML/d in the Wingecarribee River at Sheepwash Bridge, the hydraulic radius is ~0.29 m, while the flow velocity corresponds to ~0.7 m/sec.
  - Based on a flow of 500 ML/d in the Glenquarry Creek at Alcorns, the hydraulic radius is ~0.50 m, while the flow velocity corresponds to ~1.0 m/s.
- While there are several stakeholders/landholders along the Wingecarribee arm, there are very few along the Glenquarry Creek arm where water is delivered via the enclosed Glenquarry Creek into the Nepean River which has a short run into the catchment area.
- WaterNSW considers that there was low/minimal risk to life or property given:
  - The analysis of flows, depths and velocities for the missed notifications during the audit period,
  - Consideration of the small number of customers/stakeholders between Glenquarry Creek and the Nepean River (where there was one missed notification at the swift water threshold), and
  - The flows were within the channel banks.

We consider that based on the evidence provided and contextualisation of the risk, not providing advance notification of significant changes to flow release patterns at Wingecarribee Reservoir had a low residual risk in the audit period in terms of potential impacts to public safety and property.

*Other findings from outside the audit period are provided below as an observation.*

IPART also requested that we consider flow release patterns at Wingecarribee Dam in 2022. We sought to understand if there was a likely licence breach or systemic issue related to Wingecarribee Reservoir.

We note that WaterNSW missed multiple advance notifications that should have been provided for significant changes to flow release patterns at Wingecarribee Reservoir in 2022, including:

- High regulated releases (increased flow) for flows to the Nepean via Glenquarry Cut increasing on 04/01/2022, 25/01/2022, 25/02/2022, 05/05/2022, 10/05/2022, 29/06/2022, 05/10/2022, and 27/10/2022.
- High regulated releases (decreased flows) for flows to the Nepean via Glenquarry Cut decreasing on 2/01/2022, 24/01/2022, 08/02/2022, 04/05/2022, 07/05/2022, 14/06/2022, 22/07/2022, 22/10/2022, and 24/11/2022.
- High regulated releases (increased flow) for flows to Warragamba via Wingecarribee River increasing on 30/06/2022, and 29/09/2022.
- High regulated releases (decreased flows) for flows to Warragamba via Wingecarribee River decreasing on 16/04/2022, 21/09/2022, and 25/10/2022.



- Flood releases (at the end of flood operations) for spills at Wingecarribee Dam ceasing on 10/03/2022 and 06/07/2022.

As these are outside the audit scope, they do not contribute to the grade for this clause.

*Additional observations are provided below.*

We note that WaterNSW advised that WaterNSW commenced implementing corrective actions after the events in March and July 2022 to improve the advance notification system. We do not have detailed evidence of the actions taken and progress made. WaterNSW provided example notifications for Wingecarribee Reservoir issued on 26/07/2024 and 12/08/2024 as evidence of the corrective actions (D2024/125612). WaterNSW did not provide us with the full dataset of flow releases for this period to allow us to confirm that all the required notifications had been issued.

We observe that WaterNSW provided a screenshot of the advance notification alert system (D2025/13655), which shows that across Water Management Works other than Wingecarribee Reservoir, 464 alerts were issued between 1 July 2023 and 30 June 2024.

## Recommendations

**Recommendation 2024/6.4.1 - 1:** By 30 June 2026, WaterNSW should develop and implement an appropriate governance framework which at least identifies the risk-basis for notification thresholds, and accountabilities for the provision of notifications related to the Early Warning Network System.

**Recommendation 2024/6.4.1 - 2:** By 30 September 2025, Water NSW should review the notification thresholds for water releases from Wingecarribee Reservoir and update and implement the notification procedures for Wingecarribee Reservoir.

## Opportunities for improvement


**OFI 2024/6.4.1 – 1:** Water NSW should consider a review of the notification thresholds for water releases from each Water Management Works and update and implement the notification procedures for each Water Management Works (on a risk basis, as required).

**OFI 2024/6.4.1 – 2:** WaterNSW should consider opportunities to streamline the water release notification process by increasing the level of technology and automation in the flow detection, prediction and notification processes to reduce the resource intensiveness of the notification process, and minimise possible errors and delays associated with such notifications.

## Clause 6.5 – Customer advisory groups

### Clause 6.5.1

Table 3-35 Clause 6.5.1 compliance grade

Subclause	Requirement	Compliance grade
6.5.1	Water NSW must establish and maintain advisory groups for Customers in different regions of its Area of Operations that include representation from a broad cross-section of its Customers for each region (Customer Advisory Groups). Water NSW has discretion to determine those regions, provided collectively the regions encompass all of its Area of Operations.	Compliant 
<b>Risk</b> Not involving customers from a broad cross-section of customer categories may mean that WaterNSW could miss customer insights and requirements for delivery of its products and services.	<b>Target for full compliance</b> Evidence that WaterNSW has established and maintained Customer Advisory Groups in accordance with the requirements of this clause and the Customer Advisory Groups Charter.	

#### Summary of reasons for grade

We consider that WaterNSW has established and maintained Customer Advisory Groups in accordance with the requirements of this clause. Our conclusion is made based on:

- WaterNSW having defined 10 Customer Advisory Group areas, which collectively encompass its area of operations. Each area is represented by a separate Customer Advisory Group.
- Each Customer Advisory Group including representation from a broad cross-section of customers
- The term of the Customer Advisory Groups being consistent with the Customer Advisory Group Charter
- Each Customer Advisory Group meeting on three occasions in the audit period, achieving the requirement of the Customer Advisory Group Charter to meet at least twice per year
- As advised by WaterNSW, all Customer Advisory Group Chairs meeting twice per year, achieving the minimum frequency required by the Customer Advisory Group Charter.

This clause is graded as compliant.

#### Discussion and notes

This clause requires that WaterNSW establishes and maintains Customer Advisory Groups for all regions in its area of operations. This clause further requires that each group includes representation from a broad cross-section of customers for that region.

WaterNSW has defined 10 Customer Advisory Group areas, with each area being represented by one Customer Advisory Group and comprising one or more catchments. The areas collectively encompass WaterNSW's area of operations.

The activities and membership of the Customer Advisory Groups are governed by a single Customer Advisory Groups Charter (CD2015/281). The charter requires WaterNSW to call for nominations for, determine and appoint the membership of the Customer Advisory Groups. Under the charter, WaterNSW has the objective of including in each group at least one customer representative from each of the 10 customer categories that it has identified, provided that there are customers from those categories for the Customer Advisory Group area. A single member may represent more than one customer category. Membership is by nomination from a recognised water user organisation/customer representative group or water industry group. The current term for all Customer Advisory Groups is from 1 July 2022 to 30 June 2025 (i.e., the current term is inclusive of the audit period), which is consistent with the term defined in the charter.

WaterNSW provided to us the nominations register ('6.5.1 D202216072 Customer Advisory Groups - 2022-25 - Nominations Register.XLSX') and membership register ('6.5.1 D202216073 Customer Advisory Groups



- 2022-25 - Membership Lists.XLSX') for all Customer Advisory Groups for the current term. We reviewed the customer categories represented in each Customer Advisory Group and confirmed that they were representative of a broad cross-section of customers. We were also provided with a register of replacement nominations made in the current term ('6.5.3 D201958059 Customer Advisory Groups mid term vacancies changes.XLSX'), where all nominations were accepted by WaterNSW.

As evidence of the Customer Advisory Groups being maintained, WaterNSW advised that each group met on three occasions in the audit period. This meets the requirement of the Customer Advisory Group Charter for Customer Advisory Groups to meet at least twice per year. WaterNSW provided to us the dates on which these meetings were held, as well as example minutes for the March 2024 meetings of the Greater Sydney, Gwydir, Lachlan, Murray-Lower Darling, Murrumbidgee and Namoi-Peel groups. Additionally, WaterNSW advised that a joint meeting of all Customer Advisory Group Chairs is held twice per year.

### **Recommendations**


No recommendations were identified.

### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.5.2

Table 3-36 Clause 6.5.2 compliance grade

Subclause	Requirement	Compliance grade
6.5.2	Water NSW must regularly consult with the region-based Customer Advisory Groups to enable Customer involvement in issues relevant to the performance of Water NSW's obligations to Customers under this Licence or the Customer Service Charter, obtain advice on the interests of Water NSW's Customers and such other key issues relating to Water NSW's planning and operations as Water NSW may determine consistent with the Customer Advisory Group Charter(s).	Compliant 
<b>Risk</b> Not consulting on issues relevant to the performance of WaterNSW's obligations or planning and operations may mean that customer representatives (and by extension their constituents) are not adequately informed of issues impacting on them, and that WaterNSW is not able to make efficient and effective decisions regarding the balance between the cost (customer affordability), risk and performance of its services.		<b>Target for full compliance</b> Evidence that WaterNSW has met with Customer Advisory Groups and their Chairs in accordance with the requirements of the Customer Advisory Group Charter, and that those meetings are effective in enabling customer involvement and obtaining advice on the interests of customers. Evidence that WaterNSW has identified and consulted customers on the issues identified in the Customer Advisory Group Charter, and that those issues are relevant to the performance of WaterNSW's obligations.

### Summary of reasons for grade

We consider that WaterNSW has met the requirements of this clause by:

- Regularly consulting with the Customer Advisory Groups through, as advised by WaterNSW:
  - Meeting with each Customer Advisory Group on three occasions in the audit period. WaterNSW provided to us a list of meeting dates and sample meeting minutes as evidence.
  - Pre-meeting with each Customer Advisory Group Chair ahead of each Customer Advisory Group meeting
  - Holding a joint meeting with all Customer Advisory Group Chairs twice per year. WaterNSW provided to us sample presentation packs for the 6 February 2024 meeting as evidence.
- Identifying – and tabling for discussion at Customer Advisory Group meetings – issues relevant to its planning, operations and the performance of its obligations to customers through, as advised by WaterNSW:
  - Discussing all topics identified in the Customer Advisory Group Charter at all Customer Advisory Group meetings. WaterNSW provided to us sample meeting minutes as evidence.
  - Iterating proposed agendas with each Customer Advisory Group Chair and Customer Advisory Group members ahead of Customer Advisory Group meetings.
- Evaluating the value provided by Customer Advisory Groups to their membership – and by extension the constituencies they represent – through:
  - Conducting a survey of Customer Advisory Group members in December 2023. WaterNSW provided to us a summary presentation on the survey results as well as the complete dataset of responses.
  - Communicating a summary of the survey results to Customer Advisory Groups
  - Providing to us written examples of how perspectives or advice from each Customer Advisory Group in the audit period informed or validated WaterNSW's approach to planning and operations.

This clause is graded as compliant.



## Discussion and notes

This clause requires that WaterNSW regularly consults with its Customer Advisory Groups to:

- Enable customer involvement in issues relevant to the performance of WaterNSW's obligations to customers under its operating licence and Customer Service Charter
- Obtain advice on the interests of WaterNSW's customers and other key issues relating to its planning and operations, as WaterNSW may determine consistent with its Customer Advisory Group Charter.

As mentioned for Clause 6.5.1, WaterNSW met with each Customer Advisory Group on three occasions in the audit period. WaterNSW advised that, prior to each meeting, it:

- Prepared a draft agenda that reflected relevant topics and incorporated feedback received at the prior meeting
- Conducted a pre-meeting with the Customer Advisory Group Chair to seek additional agenda items, better understand customer perspectives on the priorities for their valley, and identify whether attendance from an external agency was desired (e.g., attendance from the Natural Resources Access Regulator or the Murray-Darling Basin Authority)
- Called for additional agenda items from all Customer Advisory Group members as part of issuing meeting notifications.

WaterNSW also advised that, during the audit period, it discussed all topics identified in the Customer Advisory Group Charter (CD2015/281) at all Customer Advisory Group meetings. These topics are system operations, pricing, asset operations and maintenance, involvement in government programs, customer and stakeholder engagement, and other issues relevant to the performance and delivery of its services. We reviewed the sample meeting minutes provided by WaterNSW for the audit period and confirmed that each meeting involved discussion on each of the topics identified in the charter.

To understand the extent to which the Customer Advisory Group Charter enables discussion with Customer Advisory Groups regarding 'issues relevant to the performance of Water NSW's obligations to Customers under [the Operating] Licence or the Customer Service Charter', we compared the topics in the charter with the listed functions in WaterNSW's operating licence and the obligations in its Customer Service Charter. We confirmed that the topics in the Customer Advisory Group Charter encompass, at a high level, WaterNSW's obligations to customers under its operating licence and Customer Service Charter.

In November 2023, WaterNSW conducted a survey of Customer Advisory Groups to understand overall satisfaction with Customer Advisory Group meetings, obtain feedback on the meeting duration and frequency, and obtain high-level feedback on the value of the meetings. Supplementary responses were collected in March 2024. As evidence, WaterNSW provided to us a summary presentation on the survey results that was delivered to Customer Advisory Group Chairs at a joint meeting on 6 February 2024 ('6.5.2 D202481092 CAG Representatives Meeting 6 February 2024 CAG Survey results presentation.PPTX'), as well as the complete dataset of responses ('6.5.2 D202481083 November 23 March 24 Combined Survey Responses by Valley.XLSX').

We reviewed the response dataset and observed that just over 70% of respondents indicated that 'all meetings attended over the past 12 months provided value'. Additionally, we observed that just under 60% selected a satisfaction rating of either '4' or '5' out of 5, and just over 85% selected a satisfaction rating of between '3' and '5', with '5' representing a rating of 'very satisfied'.

In our audit questionnaire, we requested that WaterNSW provide an example from each Customer Advisory Group where perspectives or advice received from the group in the audit period had informed or validated WaterNSW's approach to planning and operations. In response, WaterNSW provided a table listing, for each group, at least one example of feedback received from the group in the audit period, and how WaterNSW had addressed, or planned to address, that feedback ('Clause 6.5.2 CAG outcomes.PDF').

## Recommendations

No recommendations were identified.


## Opportunities for improvement

No opportunities for improvement were identified.



## Clause 6.5.3

**Table 3-37 Clause 6.5.3 compliance grade**

Subclause	Requirement	Compliance grade
6.5.3	For each Customer Advisory Group, Water NSW must ensure that, at all times, the membership of the Customer Advisory Group is appointed and determined by Water NSW in accordance with the Customer Advisory Group Charter.	Compliant 
<b>Risk</b> Not appointing and determining membership in accordance with the Customer Advisory Groups Charter may mean that WaterNSW could miss customer categories and that the broader customer base and the community may lose trust in the openness, transparency and consistency of WaterNSW's approach to customer engagement.		<b>Target for full compliance</b> Evidence that WaterNSW has called for members in accordance with the requirements of the Customer Advisory Groups Charter.  Evidence that the membership of the Customer Advisory Groups, as appointed and determined by WaterNSW, meets the requirements of the Customer Advisory Groups Charter.

### Summary of reasons for grade

Under the Customer Advisory Group Charter, WaterNSW has the objective of including in each Customer Advisory Group at least one customer representative from each of the 10 customer categories that it has identified, provided that there are customers from those categories for the Customer Advisory Group area. A single member may represent more than one customer category.

Based on our review of the nominations and membership registers for the current term of Customer Advisory Groups, we consider that WaterNSW has met the requirements of this clause.

This clause is graded as compliant.

### Discussion and notes

This clause requires that, for each Customer Advisory Group, WaterNSW appoints and determines the membership of the group in accordance with the Customer Advisory Group Charter.

The current term for the Customer Advisory Groups is from 1 July 2022 to 30 June 2025, which is consistent with the term defined in the Customer Advisory Group Charter (CD2015/281). As such, nominations were originally called in 2022, which was prior to the audit period. WaterNSW called for nominations via methods such as publishing a media release (28 February 2022), issuing a letter to all current members (28 February 2022), including an article in its February e-newsletter, posting a tile on social media, and arranging for an advertisement to be published in *The Land* (an agricultural and rural farm news website). WaterNSW provided examples of each of these communications as evidence<sup>2</sup>.

As mentioned for Clause 6.5.1, WaterNSW has the objective, under the Customer Advisory Group Charter, of including in each group at least one customer representative from each of the 10 customer categories that it has identified, provided that there are customers from those categories for the Customer Advisory Group area. A single member may represent more than one customer category.

<sup>2</sup> 6.5.1 D202216076 CAG Recruitment - Advertisement - The Land.PNG, 6.5.1 D202216083 Media Release - Call for Nominations to CAGs - 28 February 2022.DOC, 6.5.1 D202216091 CAG Recruitment - Image 2 - Social Media - 2022.PNG, 6.5.1 D202216092 CAG Recruitment - Customer E-Newsletter - February 2022.DOCX, and 6.5.1 D202216095 CAG Recruitment - Letters to Current Members - 2022-25.PDF

WaterNSW provided to us the nominations register ('6.5.1 D202216072 Customer Advisory Groups - 2022-25 - Nominations Register.XLSX') and membership register ('6.5.1 D202216073 Customer Advisory Groups - 2022-25 - Membership Lists.XLSX') for all Customer Advisory Groups for the current term. We reviewed the customer categories represented in each Customer Advisory Group and confirmed that they were representative of a broad cross-section of customers, as required by the Customer Advisory Group Charter.

### **Recommendations**


No recommendations were identified.

### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.5.4

Table 3-38 Clause 6.5.4 compliance grade

Subclause	Requirement	Compliance grade
6.5.4	<p>For each Customer Advisory Group, Water NSW must use its best endeavours to ensure that membership is representative of the Customers in that region and include at least one Customer representing each of the following categories (where there are Customers in this category for the region associated with the Customer Advisory Group):</p> <ol style="list-style-type: none"> <li>stock and domestic water users;</li> <li>Regulated River water users;</li> <li>Unregulated River water users;</li> <li>groundwater users;</li> <li>environmental water users;</li> <li>industrial and commercial water users;</li> <li>Local Water Utilities;</li> <li>Major Utilities;</li> <li>small water users based on their Water Licence volume;</li> <li>medium water users based on their Water Licence volume;</li> <li>large water users based on their Water Licence volume; and</li> <li>Aboriginal cultural heritage water users.</li> </ol>	<p>Compliant</p> 
<p><b>Risk</b></p> <p>Not involving customers from the customer categories identified in this clause may mean that WaterNSW could miss customer insights and requirements for delivery of its products and services.</p>		<p><b>Target for full compliance</b></p> <p>Evidence that WaterNSW has made its best endeavours to appoint members that reflect the customer categories identified in this clause.</p>

### Summary of reasons for grade

We note that the appointment and selection criteria requirements set out in the Customer Advisory Group Charter reflect the customer categories identified in this clause. In our audit of Clause 6.5.3, we concluded that WaterNSW had met the requirements of that clause to appoint and determine membership in accordance with the charter. As such, we consider that WaterNSW has met the requirements of this clause.

This clause is graded as compliant.

### Discussion and notes

This clause requires that, for each Customer Advisory Group, WaterNSW uses its best endeavours to:

- Ensure that membership is representative of the customers in that region
- Include at least one customer representing each of the categories identified in the clause.

We note that the appointment and selection criteria requirements set out in the Customer Advisory Group Charter reflect the customer categories identified in this clause. In our audit of Clause 6.5.3, we concluded that WaterNSW had met the requirements of that clause to appoint and determine membership in accordance with the charter.

### Recommendations


No recommendations were identified.

### Opportunities for improvement

No opportunities for improvement were identified.

## Clause 6.5.5

Table 3-39 Clause 6.5.5 compliance grade

Subclause	Requirement	Compliance grade
6.5.5	Water NSW must provide the Customer Advisory Groups with adequate information within its possession or under its control necessary to enable the Customer Advisory Groups to discharge the tasks assigned to them other than information or documents that are confidential.	Compliant 
<b>Risk</b> Not providing the Customer Advisory Groups with adequate information may mean that members are unable to provide meaningful inputs and advice.		<b>Target for full compliance</b> Evidence that WaterNSW provides adequate information to Customer Advisory Group members ahead of or following Customer Advisory Group meetings.

### Summary of reasons for grade

WaterNSW advised that business papers are provided to each Customer Advisory Group two weeks prior to each meeting, and that presentations are provided following the meetings. WaterNSW provided to us example business papers and presentations as evidence.

Additionally, as part of a broader survey of Customer Advisory Groups, WaterNSW sought to understand the value of presentation material provided to Customer Advisory Group members. We reviewed the response dataset and observed that members were generally appreciative of the documented information received.

Based on the above, we consider that WaterNSW has met the requirements of this clause.

This clause is graded as compliant.

### Discussion and notes

This clause requires that WaterNSW provides the Customer Advisory Groups with adequate information within its possession or under its control, other than information that is confidential, necessary to enable the groups to discharge their assigned tasks.

WaterNSW advised that business papers are provided to each Customer Advisory Group two weeks prior to each meeting, and that presentations are provided following the meetings. As evidence, WaterNSW provided to us the business papers and presentations for the 21 March 2024 meeting of the Namoi-Peel Customer Advisory Group.

In November 2023, WaterNSW conducted a survey of Customer Advisory Groups to understand overall satisfaction with Customer Advisory Group meetings, obtain feedback on the meeting duration and frequency, and obtain high-level feedback on the value of the meetings including the value of presentation material received. Supplementary responses were collected in March 2024.

WaterNSW provided to us a summary presentation on the survey results ('6.5.2 D202481092 CAG Representatives Meeting 6 February 2024 CAG Survey results presentation.PPTX'), as well as the complete dataset of responses ('6.5.2 D202481083 November 23 March 24 Combined Survey Responses by Valley.XLSX'). We reviewed the response dataset and observed that members were generally appreciative of the documented information received. However, a small number of members also identified specific improvement opportunities, with post-meeting presentation packs occasionally considered to be 'effectively a record of the meeting' and potentially benefiting from greater detail (**OFI 2024/6.5.5 – 1**).

### Recommendations

No recommendations were identified.

### Opportunities for improvement

**OFI 2024/6.5.5 – 1:** In implementing the customer and community engagement requirements of its new (2024 – 2028) Operating Licence, WaterNSW should consider how it can incorporate the feedback received from Customer Advisory Group members regarding the types and level of detail of documented information that it provides to customers and the community. This should include consideration of the type of




documented information provided ahead of engagement activities, to provide the target audience with sufficient time to review and deliberate the information received.

## Clause 6.6 – Customer advisory group charter

### Clause 6.6.2

Table 3-40 Clause 6.6.2 compliance grade

Subclause	Requirement	Compliance grade
6.6.2	<p>The Customer Advisory Group Charter must address all of the following issues:</p> <ul style="list-style-type: none"> <li>a. the role of the Customer Advisory Group;</li> <li>b. how members and the chair of the Customer Advisory Group will be appointed;</li> <li>c. the term for which members are appointed;</li> <li>d. information on how the Customer Advisory Group will operate;</li> <li>e. a description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred;</li> <li>f. procedures for communicating the outcomes of the Customer Advisory Groups' work to the public;</li> <li>g. procedures for monitoring issues raised at meetings of the Customer Advisory Groups and ensuring appropriate follow-up of those issues;</li> <li>h. procedures for amending the charter; and</li> <li>i. funding and resourcing of the Customer Advisory Groups by Water NSW.</li> </ul>	<p>Compliant</p> 
<p><b>Risk</b></p> <p>Not addressing the requirements of this clause would mean WaterNSW not setting out the requirements for the Customer Advisory Groups to be effective.</p>		<p><b>Target for full compliance</b></p> <p>Evidence that the Customer Advisory Groups Charter addresses each of the issues identified in this clause.</p>

#### Summary of reasons for grade

Through mapping the issues identified in this clause to the relevant sections of the Customer Advisory Group Charter, we consider that WaterNSW has met the requirements of this clause.

This clause is graded as compliant.

#### Discussion and notes

This clause requires WaterNSW to ensure that the Customer Advisory Group Charter addresses all issues identified in the clause.

WaterNSW has in place a Customer Advisory Groups Charter (CD2015/281) that governs the activities and membership of the Customer Advisory Groups. Table 3-41 maps each of the issues identified in this clause to the relevant section of the Customer Advisory Groups Charter. Where one section of the charter addresses multiple clause requirements, we have quoted the specific text relevant to each requirement.

**Table 3-41 Mapping of licence requirements to the Customer Advisory Group Charter**

<b>Sub-clause</b>	<b>Licence requirement</b>	<b>Section where this is addressed in the charter (including the specific relevant quote where one section in the charter addresses multiple clause requirements)</b>
<b>a</b>	The role of the Customer Advisory Group	<i>Purpose</i> ('The Customer Advisory Groups provide a forum to provide advice from a customer point of view to WaterNSW, on an area basis.')
<b>b</b>	How members and the chair of the Customer Advisory Group will be appointed	<ul style="list-style-type: none"> <li>• <i>Appointment and selection criteria</i></li> <li>• <i>Chairperson</i> – section i (<i>Election</i>)</li> </ul>
<b>c</b>	The term for which members are appointed	<i>Term</i>
<b>d</b>	Information on how the Customer Advisory Group will operate	<i>Meetings</i>
<b>e</b>	A description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred	<ul style="list-style-type: none"> <li>• <i>Purpose</i> ('WaterNSW holds Customer Advisory Group meetings with a broad cross-section of our customers on issues, including but not limited to: system operations; pricing; asset operations and maintenance; WaterNSW involvement in Government programs; customers and stakeholder engagement; and other issues relevant to our performance and delivery of services to customers.')</li> <li>• <i>Meetings</i> ('WaterNSW determines meeting schedules and agendas based upon key issues relating to WaterNSW's planning and operations and advice received in the interest of customers... Members may suggest topics for inclusion on agendas on issues relevant to our performance and delivery of services to customers by emailing at least 3 weeks prior to a meeting in order to allow sufficient time on the agenda.')</li> </ul>
<b>f</b>	Procedures for communicating the outcomes of the Customer Advisory Groups' work to the public	<i>Communication of outcomes of the Customer Advisory Groups</i>
<b>g</b>	Procedures for monitoring issues raised at meetings of the Customer Advisory Groups and ensuring appropriate follow-up of those issues	<i>Meetings</i> ('Issues monitoring and follow up is affected via standard meeting minuting and action procedures.')
<b>h</b>	Procedures for amending the charter	<i>Charter</i>
<b>i</b>	Funding and resourcing of the Customer Advisory Groups by Water NSW	<i>Funding and resourcing</i>

## Recommendations

No recommendations were identified.


## Opportunities for improvement

No opportunities for improvement were identified.

## Clause 6.8 – Code of practice on payment difficulties

### Clause 6.8.1

**Table 3-42** Clause 6.8.1 compliance grade

Subclause	Requirement	Compliance grade
6.8.1	Water NSW must maintain and fully implement a code of practice that assists Customers experiencing financial hardship to better manage their current and future Bills (Code of Practice on Payment Difficulties) in accordance with this clause 6.8.	Compliant (minor shortcomings) 
<b>Risk</b> Without maintaining and fully implementing a code of practice, customers experiencing hardship may not receive the payment assistance they require.		<b>Target for full compliance</b> Evidence that WaterNSW has periodically reviewed and, if required, updated the code of practice in accordance with its document management procedures. Evidence that interviewed staff understand their responsibilities under the code of practice. Evidence that WaterNSW has implemented the code of practice for sample customers trailed in the audit interview.

#### Summary of reasons for grade

WaterNSW has in place a Debt Management Code of Practice that assists customers experiencing financial hardship to better manage their current and future bills. It is operationalised through several internal controlled procedures and documented processes. However, we note several document management shortcomings across these procedures.

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained and fully implemented its Debt Management Code of Practice (i.e., that it has not breached its operating licence requirement), as evidenced by:

- WaterNSW reviewing and approving the Debt Management Code of Practice during the audit period
- A live demonstration of Dynamics 365 during the audit interview to trail a sample of customers on payment plans and confirm the implementation of the code of practice.

This clause is graded as compliant (minor shortcomings).

#### Discussion and notes

This clause requires that WaterNSW maintains and fully implements a Code of Practice on Payment Difficulties that assists customers experiencing financial hardship to better manage their current and future bills.

WaterNSW has in place a [Debt Management Code of Practice](#) (CD2017/70) that assists customers experiencing financial hardship to better manage their current and future bills. The code of practice sets out WaterNSW's definition of 'hardship' and identifies four methods through which a customer may be identified as experiencing hardship. These methods are self-identification, identification by WaterNSW staff through conversations with the customer, identification by WaterNSW staff through a lack of payments made by the customer, and identification by registered welfare organisations and community groups.

The code of practice also identifies three payment arrangements available to customers – an extension of up to three months, a payment arrangement to pay the account in regular instalments over a period of three months, and a payment plan of longer than three months. Additionally, the document provides an overview of the circumstances required for restriction or licence suspension to occur. The code of practice was last reviewed and approved in June 2024.

It is operationalised through the internal controlled procedures and documented processes listed below. We note the following document management shortcomings for each procedure:



- An Internal Customer Hardship Procedure (CD2019/62) that provides guidance to WaterNSW staff on the implementation of the Debt Management Code of Practice. For example, the procedure identifies the conditions that must be met for a customer to be eligible for a payment plan of longer than three months. The procedure also provides examples of indicators of customer hardship (e.g., repeated contact attempts from the customer to submit a query regarding their invoice, the customer mentioning family issues or drought).

This procedure was scheduled for review in April 2023. WaterNSW confirmed following the audit interview that the review of this procedure was outstanding and overdue during the audit period. However, WaterNSW advised that the procedure was subsequently reviewed in October 2024 (i.e., after the audit period), with no material changes identified.

- A Debtor Management, Compliance and Licence Suspension/Cancellation Procedure (CD2015/311) that describes the process for debtor management, including responsibilities and the time spent in each step of the process (e.g., the time before an 'Overdue Notice' is issued to the customer). This procedure references the former State Water on page 7 and was scheduled for review in April 2022. WaterNSW confirmed following the audit interview that the review of this procedure was outstanding and overdue during the audit period. However, WaterNSW advised that the procedure was subsequently reviewed in August 2024 (i.e., after the audit period), with no material changes identified.
- A Debt Management – Process document (D2024/79872) that captures similar information to the Debtor Management, Compliance and Licence Suspension/Cancellation Procedure but specifies a \$100, rather than \$50, threshold for referrals to Revenue NSW. WaterNSW confirmed following the audit interview that \$100 is the correct and up-to-date referral threshold and that its systems are hardcoded to reflect that threshold.

#### **(Recommendation 2024/6.8.1 – 1)**

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained and fully implemented its Debt Management Code of Practice (i.e., that it has not breached its operating licence requirement), as evidenced by:

- WaterNSW reviewing and approving the Debt Management Code of Practice during the audit period
- A live demonstration of Dynamics 365 during the audit interview to trail a sample of customers on payment plans and confirm the implementation of the code of practice. We trailed the following customers during the audit interview:
  - We trailed a customer who was initially issued an invoice on 7 December 2023. We observed that the customer contacted WaterNSW on 19 February 2024, which was before WaterNSW had issued a debt notice to customers whose invoices were due in the prior month, to self-identify as being in hardship. We observed that the customer was placed on a payment plan, with the confirmation e-mail specifying the payment amount and frequency. Due to the customer entering into a payment plan, we observed that the due date for their total invoice amount was subsequently updated to 19 December 2024. We sighted the transaction history in Dynamics 365 showing that the customer had been making payments as scheduled.
  - We trailed a customer who was initially issued an invoice on 27 November 2023. We observed that a debt notice was issued to the customer on 8 July 2024, with final payment due on 29 July 2024. We note that the Debt Management – Process document requires debt notices to be issued at the beginning of each month for invoices that were due in the month prior. We queried WaterNSW as to why a six-month period had elapsed between the invoice due date and the issue of the debt notice. In response, WaterNSW advised that its Executive had endorsed a decision to pause collection of overdue amounts for customers located in areas impacted by flooding. We consider that this is a demonstration of a customer-focussed mindset and that flexibility should be incorporated into WaterNSW's procedures to enable similar endorsed decisions to be carried out in the future in a way that does not diminish the extent to which WaterNSW has implemented its procedures (**OFI 2024/6.8.1 – 1**).

We note an area of good practice in that the interviewees for Clauses 6.8, 6.9 and 6.10 represented a broad range of roles, ranging from an Executive Manager to customer-facing staff at the coalface of implementation. All interviewees, regardless of role, demonstrated sound knowledge of the procedures and documented processes guiding their work, as well as personal accountability for their successful implementation.



## Recommendations

**Recommendation 2024/6.8.1 – 1:** By 30 June 2025, examine document review processes for debtor management and payment assistance procedures to identify the root cause(s) of documents not being reviewed as scheduled and identify corrective actions. WaterNSW should implement the identified corrective actions by 30 September 2025.

**Recommendation 2024/6.8.1 – 2:** By 30 September 2025, implement the corrective actions identified under **Recommendation 2024/6.8.1 – 1**.


This recommendation should be read in conjunction with **Recommendation 2024/6.9.1 – 1**.

## Opportunities for improvement

**OFI 2024/6.8.1 – 1:** WaterNSW should consider updating its debtor management procedures to provide, where appropriate and in extenuating circumstances, flexibility for decisions endorsed by its Executive to be implemented as a variation to its business-as-usual practices. As an example, WaterNSW should consider introducing flexibility into its procedures to enable debt collection to be temporarily paused during natural disasters.

## Clause 6.8.2

Table 3-43 Clause 6.8.2 compliance grade

Subclause	Requirement	Compliance grade
6.8.2	<p>The Code of Practice on Payment Difficulties must:</p> <ul style="list-style-type: none"> <li>a. provide for a payment plan for Customers who are responsible for paying their Bills and who are, in Water NSW's reasonable opinion, experiencing financial hardship;</li> <li>b. include procedures for identifying the circumstances under which Water NSW may restrict the provision of services to a customer (including in respect of CSR Water and Supply water);</li> <li>c. include procedures for identifying the circumstances under which Water NSW may suspend water access licences when a Customer has not paid its Bill and an overview of the process that must be followed prior to suspension; and</li> <li>d. include procedures for self-identification, identification by community welfare organisations and identification by Water NSW of Customers experiencing financial hardship.</li> </ul>	<p>Compliant</p> 
<p><b>Risk</b></p> <p>If the Code of Practice on Payment Difficulties does not address the matters set out in this clause, there is a risk that WaterNSW's vulnerable customers are not provided with adequate mechanisms for assisting them to pay their bills, leading to financial losses and distress for these customers.</p>		<p><b>Target for full compliance</b></p> <p>A WaterNSW customer-specific Code of Practice, which was current for the audit period and which includes the requirements of clause 6.8.2.</p> <p>Specifically defined criteria for financial hardship.</p> <p>Procedures or other for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer (including in respect of CSR Water and Supply water).</p> <p>Procedures or other for identifying the circumstances under which WaterNSW suspends water access licences when a Customer has not paid its Bill and an overview of the process that must be followed prior to suspension.</p> <p>Procedures for self-identification, identification by community welfare organisations and identification by WaterNSW of Customers experiencing financial hardship.</p>

### Summary of reasons for grade

Through mapping the matters specified in this clause to the relevant sections of the Code of Practice on Payment Difficulties, we consider that WaterNSW has met the requirements of this clause.

This clause is graded as compliant.

### Discussion and notes

This clause requires WaterNSW to ensure that the Code of Practice on Payment Difficulties provides for and includes the matters specified in the clause. Table 3-46 describes how each of the matters specified in this clause is addressed in the code of practice.

**Table 3-44 Mapping of licence requirements to the Code of Practice on Payment Difficulties**

<b>Sub-clause</b>	<b>Licence requirement</b>	<b>How this is addressed in the code of practice</b>
<b>a</b>	Provide for a payment plan for Customers who are responsible for paying their Bills and who are, in Water NSW's reasonable opinion, experiencing financial hardship	The code of practice sets out WaterNSW's definition of 'hardship' and identifies three payment arrangements available to customers experiencing hardship – an extension of up to three months, a payment arrangement to pay the account in regular instalments over a period of three months, and a payment plan of longer than three months.
<b>b</b>	Include procedures for identifying the circumstances under which Water NSW may restrict the provision of services to a customer (including in respect of CSR Water and Supply water)	The code of practice provides an overview of the circumstances required for disconnection to occur.
<b>c</b>	Include procedures for identifying the circumstances under which Water NSW may suspend water access licences when a Customer has not paid its Bill and an overview of the process that must be followed prior to suspension	The code of practice provides an overview of the circumstances required for licence suspension to occur.
<b>d</b>	Include procedures for self-identification, identification by community welfare organisations and identification by Water NSW of Customers experiencing financial hardship	The code of practice identifies four methods through which a customer may be identified as experiencing hardship. These methods are self-identification, identification by WaterNSW staff through conversations with the customer, identification by WaterNSW staff through a lack of payments made by the customer, and identification by registered welfare organisations and community groups.

### **Recommendations**


No recommendations were identified.

### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.8.4

Table 3-45 Clause 6.8.4 compliance grade

Subclause	Requirement	Compliance grade
6.8.4	<p>Water NSW must provide, free of charge, information on the Code of Practice on Payment Difficulties:</p> <ol style="list-style-type: none"> <li>to Customers, except Sydney Water, at least once annually with their Bills; and</li> <li>to Customers whom Water NSW identifies as experiencing financial hardship on the date that Water NSW first identifies that the Customer is experiencing financial hardship; and</li> <li>on its website.</li> </ol>	<p>Compliant</p> 
<p><b>Risk</b></p> <p>If WaterNSW does not communicate the information required by this clause, there is a risk that WaterNSW's vulnerable customers are not aware of their rights and obligations. This could result in vulnerable customers missing out on payment assistance, leading to financial losses and distress for these customers.</p>		<p><b>Target for full compliance</b></p> <p>Evidence that information on the code of practice is provided to customers at least once annually with their bills.</p> <p>Evidence that customers identified as experiencing financial hardship are provided with information on the code of practice.</p> <p>Evidence that information on the code of practice is available on WaterNSW's website.</p>

### Summary of reasons for grade

We consider that WaterNSW has met the requirements of this clause through, as advised by WaterNSW:

- Including information on payment assistance in each invoice that it issues to a customer. WaterNSW provided to us sample invoices issued in the audit period as evidence.
- Offering a 'no questions asked' payment extension of up to three months, in accordance with its Code of Practice on Payment Difficulties, to each customer who contacts its customer service help desk to self-identify as experiencing hardship, and directing the customer to its Code of Practice on Payment Difficulties for further information
- Making the Code of Practice on Payment Difficulties available on its website. We confirmed that the Code of Practice on Payment Difficulties was available on WaterNSW's website at the time of the audit.

This clause is graded as compliant.

### Discussion and notes

This clause requires that WaterNSW provide, free of charge, information on the Code of Practice on Payment Difficulties:

- To customers except Sydney Water at least once annually with their bills
- To customers whom it identifies as experiencing financial hardship on the date that it first identifies the customer to be experiencing financial hardship
- On its website.

WaterNSW advised that it has developed standard invoice templates for groundwater, unregulated river, and regulated river customers. WaterNSW provided to us sample invoices issued in the audit period for a groundwater customer (issued on 27 November 2023), unregulated river customer (issued on 7 December 2023), and regulated river customer (issued on 20 December 2023). We reviewed the sample invoices and confirmed that each invoice set out WaterNSW's commitment to payment assistance, invited the customer to contact WaterNSW if they considered that they required payment assistance, and provided a hyperlink to WaterNSW's website for further information.

WaterNSW advised that customers who self-identify as experiencing hardship via WaterNSW's customer service help desk are offered a 'no questions asked' payment extension of up to three months, in



accordance with its Code of Practice on Payment Difficulties. WaterNSW further advised that its staff direct the customer to its Code of Practice on Payment Difficulties for further information.

We confirmed that the Code of Practice on Payment Difficulties ([Debt Management Code of Practice \(CD2017/70\)](#)) was available on WaterNSW's website at the time of the audit.

### **Recommendations**

No recommendations were identified.


### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.9 – Internal complaints handling procedure

### Clause 6.9.1

Table 3-46 Clause 6.9.1 compliance grade

Subclause	Requirement	Compliance grade
6.9.1	Water NSW must maintain a procedure for receiving, responding to and resolving Complaints, which is consistent with the Australian Standard AS/NZS 10002:2014 <i>Guidelines for complaints management in organizations</i> or other standard approved by IPART (Internal Complaints Handling Procedure).	Compliant (minor shortcomings) 
<b>Risk</b> If WaterNSW does not maintain an adequate Internal Complaints Handling Procedure, there is a risk that customers will not have an opportunity to make complaints about WaterNSW's services not meeting their expectations or to generally provide feedback. In turn, WaterNSW will not be aware of their customers' views, priorities and needs, and it will not consider these in its decision making. This could lead to WaterNSW providing services that do not meet customers' expectations, such as excessive supply interruptions, excessive application processing times, or inadequate customer protections.		<b>Target for full compliance</b> Evidence that WaterNSW maintains a procedure for receiving, responding to and resolving Complaints, which is consistent with the Australian Standard AS/NZS 10002:2014: <i>Guidelines for complaints management in organizations</i> (AS/NZS 10002:2014) or other standard approved by IPART.  Evidence to confirm that if another standard is being used, that it has been approved by IPART.

#### Summary of reasons for grade

WaterNSW has in place a Feedback, Compliments and Complaints Policy that sets out its commitment to fair, efficient and effective complaint handling; establishes relevant terms and definitions; and describes its system and guiding principles for receiving, responding to and resolving complaints in a manner consistent with AS/NZS 10002:2014 *Guidelines for complaints management in organisations*. The implementation of the policy is supported by a Feedback Compliments and Complaints Handling Procedure, which describes WaterNSW's requirements and processes for complaints handling and establishes key performance indicators. However, we note several document management shortcomings across the policy and procedure.

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained its Feedback Compliments and Complaints Handling Procedure by progressing the review of the procedure during the audit period.

This clause is graded as compliant (minor shortcomings).

#### Discussion and notes

This clause requires that WaterNSW maintain an Internal Complaints Handling Procedure for receiving, responding to and resolving complaints. This clause further requires that the procedure is consistent with the Australian Standard AS/NZS 10002:2014 *Guidelines for complaints management in organisations* or another standard approved by IPART.

WaterNSW has in place a Feedback, Compliments and Complaints Policy (CD2020/119) that sets out its commitment to fair, efficient and effective complaint handling; establishes relevant terms and definitions; and describes its system and guiding principles for receiving, responding to and resolving complaints in a manner consistent with AS/NZS 10002:2014 *Guidelines for complaints management in organisations*. The implementation of the policy is supported by a Feedback Compliments and Complaints Handling Procedure (CD2007/13), which describes WaterNSW's requirements and processes for complaint handling and establishes key performance indicators.

We note the following document management shortcomings in relation to the Feedback, Compliments and Complaints Policy and the Feedback Compliments and Complaints Handling Procedure:



- The Feedback, Compliments and Complaints Policy was scheduled for review in June 2022 and references an obsolete version of WaterNSW's operating licence (Operating Licence 2017 – 2022). By using the Internet Archive/Wayback Machine, we confirmed that WaterNSW's website included a hyperlink to this version of the policy as at 1 June 2024 (i.e., near the end of the audit period). WaterNSW confirmed following the audit interview that the review of this policy was outstanding and overdue during the audit period. However, WaterNSW advised that the policy was subsequently reviewed in August 2024 (i.e., after the audit period). We confirmed that WaterNSW's website, as at the time of writing this audit report, includes a hyperlink to the current (August 2024) version of the policy.
- The document footer of the Feedback Compliments and Complaints Handling Procedure contains a 'Date Approved' of 'xx May 24', and there are multiple unresolved comments throughout the document. Additionally, the procedure contains a broken hyperlink ([Customer Feedback and Complaints Form](#)). WaterNSW confirmed following the audit interview that the review of this procedure was outstanding and overdue during the audit period. However, WaterNSW advised that the reviewed procedure was pending approval as of November 2024 (i.e., after the audit period).

**(Recommendation 2024/6.9.1 – 1)**

We consider that these are shortcomings and not deficiencies as WaterNSW has demonstrated that it has maintained its Feedback Compliments and Complaints Handling Procedure by progressing the review of the procedure during the audit period.

We direct the reader to our discussion for Clause 6.8.1 for an identified area of good practice in WaterNSW's customer service teams.

**Recommendations**

**Recommendation 2024/6.9.1 – 1:** By 30 June 2025, WaterNSW is to review its document review processes for internal complaints handling policy and procedure to identify the root cause(s) of documents not being reviewed as scheduled and identify corrective actions.

**Recommendation 2024/6.9.1 – 2:** By 30 September 2025, implement the corrective actions identified under **Recommendation 2024/6.9.1 – 1**.


This recommendation should be read in conjunction with **Recommendation 2024/6.8.1 – 1**.

**Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.9.2

Table 3-47 Clause 6.9.2 compliance grade

Subclause	Requirement	Compliance grade
6.9.2	Water NSW must ensure that the Internal Complaints Handling Procedure is fully implemented and that all relevant activities are carried out in accordance with the Internal Complaints Handling Procedure.	Compliant 
<b>Risk</b> Not implementing the procedure for receiving, responding to and resolving complaints means that customers may be disadvantaged and not have their complaints managed appropriately.		<b>Target for full compliance</b> Evidence that staff are trained in the implementation of the procedure. Evidence that the effectiveness of the procedure is monitored. Evidence that WaterNSW has implemented the procedure for sample complaints trailed in the audit interview.

### Summary of reasons for grade

We consider that WaterNSW has fully implemented and carried out all relevant activities in accordance with the Internal Complaint Handling Procedure. Our conclusion is made based on:

- Customer-facing staff being trained in the implementation of the Internal Complaints Handling Procedure by attending a WaterNSW Orientation and completing a Compliments and Complaints Management training module in Mylearning
- The effectiveness of the complaint handling system being monitored through the submission of monthly complaint analysis reports to the Executive Manager for Customer Services
- Confirming that the Internal Complaints Handling Procedure had been implemented in receiving, responding to and resolving three complaints that were sampled and trailed during the audit interview via a live demonstration of ServiceNow.

This clause is graded as compliant.

### Discussion and notes

This clause requires that WaterNSW fully implement and carry out all relevant activities in accordance with the Internal Complaints Handling Procedure.

WaterNSW advised that customer-facing staff are trained in the implementation of its Internal Complaints Handling Procedure by attending a WaterNSW Orientation and being required to complete a Compliments and Complaints Management training module in its online learning management system (Mylearning) annually. We were provided with the WaterNSW Orientation slide pack (D2024/80785), and a training record as at 30 September 2024 for the Compliments and Complaints Management module (D2024/80896).

We observed that the WaterNSW Orientation slide pack included an induction into WaterNSW's customers and customer service principles, and a hyperlink to the Compliments, Complaints & Feedback Form in ServiceNow. WaterNSW advised that, when delivering the WaterNSW Orientation, it communicates to attendees the definitions of 'compliments', 'complaints' and 'feedback', and provides guidance on how compliments, complaints and feedback may be registered.

We observed that the Customer Service Centre Manager, two Customer Service Advisers, seven Customer Service Officers, and two Water Trade Officers had completed the Compliments and Complaints Management module in 2024. WaterNSW confirmed that all Customer Service Advisers and Customer Service Officers had completed the module.

To supports its understanding of service delivery performance and enable it to monitor the effectiveness of its complaints handling system, WaterNSW prepares internal monthly reports on:

- The number of complaints received in each month over a rolling six-month period



- The number of complaints received, resolved and carried over from the previous month for each month over a rolling six-month period
- The number of complaints by type (e.g., billing, metering, licencing) in each month over a rolling six-month period, including the specific complaint mix for the most recent month.

Each report also outlines the purpose of communicating these indicators and identifies management actions informed by the level of performance presented and any trends, themes or systemic issues. Each report is provided to the Executive Manager for Customer Services. As evidence, WaterNSW provided to us the report for May 2024 (D2024/130278). During the audit interviews, we queried WaterNSW as to whether any systemic issues had been identified in the audit period. WaterNSW advised that complaints were not of a sufficient volume in the audit period for systemic issues to be observed, but it was readily able to identify an example of a systemic issue in the previous audit period.

During the audit interview, we trailed three complaint tickets (records) in ServiceNow. We confirmed that WaterNSW had implemented the Internal Complaints Handling Procedure in receiving, responding to and resolving the sampled complaints.

### **Recommendations**


No recommendations were identified.

### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.9.3

Table 3-48 Clause 6.9.3 compliance grade

Subclause	Requirement	Compliance grade
6.9.3	Water NSW must provide to Customers, at least annually with their Bills, information concerning internal Complaints handling, which explains how to make a Complaint and how Water NSW will receive, respond to and resolve Complaints.	Compliant 
<b>Risk</b> Not providing to customers, at least annually with their bills, information on internal complaints handling may mean that they are not aware of their rights and obligations.		<b>Target for full compliance</b> Evidence of customers being provided with information on internal complaints handling at least annually with their bills.

### Summary of reasons for grade

We consider that WaterNSW has met the requirements of this clause. Our conclusion is made based on:

- WaterNSW having developed standard invoice templates for groundwater, unregulated river, and regulated river customers
- The standard invoice templates:
  - Setting out WaterNSW's commitment to 'always endeavour[ing] to resolve issues to [the customer's] satisfaction. WaterNSW provided to us sample invoices issued in the audit period as evidence.
  - As advised by WaterNSW, being issued with a copy of its Customer Service Charter. As evidence, WaterNSW provided to us sample data reconciliation reports submitted by its service provider (Forms Express) for billing and printing services. The sample reports list the inserts included in invoices issued to groundwater and unregulated customers. The charter includes information on how customers can make a complaint and how WaterNSW will receive, respond to and resolve complaints.

This clause is graded as compliant.

### Discussion and notes

This clause requires that WaterNSW provide to customers, at least annually with their bills, information on internal complaints handling. This clause further requires that the provided information explains how to make a complaint and how WaterNSW will receive, respond to and resolve complaints.

WaterNSW advised that it has developed standard invoice templates for groundwater, unregulated river, and regulated river customers. WaterNSW provided to us sample invoices issued in the audit period for a groundwater customer (issued on 27 November 2023), unregulated river customer (issued on 7 December 2023), and regulated river customer (issued on 20 December 2023). We reviewed the sample invoices and observed that the invoices set out WaterNSW's commitment to 'always endeavour[ing] to resolve issues to [the customer's] satisfaction. WaterNSW provided to us sample invoices issued in the audit period as evidence.

We queried WaterNSW as to where information 'explain[ing] how to make a complaint and how WaterNSW will receive, respond to and resolve complaints', as required by this clause, could be found. In response, WaterNSW advised that all customers are issued, at least annually with their bills, a copy of WaterNSW's Customer Service Charter. We reviewed the charter and confirmed that it includes information on how customers can make a complaint and refers to WaterNSW's Feedback, Compliments and Complaints Policy as providing a framework for addressing customer complaints and responding to customer needs. We confirmed that the [Feedback, Compliments and Complaints Policy](#) is available on WaterNSW's website. (OFI 2024/6.9.3 – 1)

### Recommendations

No recommendations were identified.




### **Opportunities for improvement**

**OFI 2024/6.9.3 – 1:** WaterNSW should consider amending its standard invoice templates to explicitly direct customers to its Customer Service Charter (including a hyperlink to the charter) for information on how to make a complaint and how WaterNSW will receive, respond to and resolve complaints.

## Clause 6.10 – External dispute resolution scheme

### Clause 6.10.1

**Table 3-49** Clause 6.10.1 compliance grade

Subclause	Requirement	Compliance grade
6.10.1	Water NSW must be a member of the Energy and Water Ombudsman of NSW to facilitate the resolution, by a dispute resolution body, of disputes between Water NSW and its Customers.	Compliant 
<b>Risk</b> If WaterNSW is not a member of an external dispute resolution scheme, there is a risk that WaterNSW's customers do not have an opportunity to escalate their concerns and complaints if not dealt with effectively by WaterNSW. In turn, WaterNSW may not consider its customers' views, priorities and needs in its decision making. This could lead to WaterNSW providing services that do not meet customers' expectations, such as excessive supply interruptions, excessive application processing times, or inadequate customer protections.		<b>Target for full compliance</b> Evidence that WaterNSW is a member of the Energy and Water Ombudsman of New South Wales.

#### Summary of reasons for grade

We consider that WaterNSW has met the requirements of this clause. Our conclusion is made based on:

- Confirming that WaterNSW was listed on the 'List of EWON members' webpage on the website of the Energy and Water Ombudsman of New South Wales (EWON), for all available archived versions of the webpage in the audit period
- Being provided with two example invoices issued by EWON to WaterNSW in relation to the audit period.

This clause is graded as compliant.

#### Discussion and notes

This clause requires that WaterNSW be a member of the Energy and Water Ombudsman of New South Wales (EWON) to facilitate the resolution, by a dispute resolution body, of disputes between WaterNSW and its customers.

By using the Internet Archive/Wayback Machine, we confirmed that WaterNSW was listed on the 'List of EWON members' webpage on EWON's website for all available archived versions of the webpage in the audit period (19 October 2023, 27 October 2023, 11 December 2023, 2 March 2024 and 26 May 2024).

As additional evidence of being a member of EWON, WaterNSW provided two example invoices received from EWON – one invoice that was issued in the audit period (the 2023/24 financial year) for a fixed fee for the following financial year (2024/25) (D2024/80333), and one invoice that was issued for variable fees incurred in the final quarter of the audit period (quarter 4, 2023/24) (D2024/80335).

We direct the reader to our discussion for Clause 6.8.1 for an identified area of good practice in WaterNSW's customer service teams.

#### Recommendations


No recommendations were identified.

#### Opportunities for improvement

No opportunities for improvement were identified.

## Clause 6.10.2

Table 3-50 Clause 6.10.2 compliance grade

Subclause	Requirement	Compliance grade
6.10.2	<p>Water NSW must:</p> <ol style="list-style-type: none"> <li>prepare information that explains the dispute resolution service provided by the Energy and Water Ombudsman of NSW, including any right to have a Complaint or dispute referred to the Energy and Water Ombudsman of NSW and how such a Complaint or dispute can be assessed;</li> <li>provide the information prepared under clause 6.10.2(a), free of charge to Customers at least once a year with their Bills; and</li> <li>make the information prepared under clause 6.10.2(a) available free of charge on its website.</li> </ol>	<p>Non-compliant (non-material)</p> 
<p><b>Risk</b></p> <p>If WaterNSW does not communicate the information required by this clause, there is a risk that WaterNSW's customers are not aware of the provisions for escalating complaints, if not dealt with effectively by WaterNSW. In turn, WaterNSW may not consider customers' views, priorities and needs in its decision making. This could lead to WaterNSW providing services that do not meet customers' expectations, such as excessive supply interruptions, excessive application processing times, or inadequate customer protections.</p>		<p><b>Target for full compliance</b></p> <p>Evidence that WaterNSW has prepared information that explains the operation of the dispute resolution service provided by the Energy and Water Ombudsman of New South Wales; has provided a copy of that information to Customers at least annually with their Bills; and has made that information available on its website free of charge.</p>

### Summary of reasons for grade

WaterNSW has prepared information that explains the dispute resolution service provided by the Energy and Water Ombudsman of New South Wales (NSW), including any right to have a complaint or dispute referred to EWON and how such a complaint or dispute can be assessed. This information is available on its website.

However, while the invoices issued by WaterNSW implicitly explain that the customer has 'any right to have a Complaint or dispute referred to the Energy and Water Ombudsman of NSW', they do not explain 'how such a Complaint or dispute can be assessed', as required by part (b) of this clause. Therefore, we consider that a deficiency exists against part (b) of this clause.

We consider that this is a deficiency and not a shortcoming as it is a breach of WaterNSW's operating licence requirement, leading to a risk that customers are not fully informed of the process to have a complaint or dispute referred to EWON and assessed.

However, we consider that the risk posed by this deficiency is minimal and, therefore, that the deficiency is non-material. Our assessment of the level of risk is made on the basis of:

- WaterNSW's standard invoice templates making it clear that the customer can contact EWON and clearly communicating EWON's contact details
- The information prepared under part (a) of this clause being readily available on WaterNSW's website, as required by part (c) of this clause.

This clause is graded as non-compliant (non-material).

### Discussion and notes

This clause requires that WaterNSW:

- Prepare information that explains the dispute resolution service provided by the Energy and Water Ombudsman of New South Wales (EWON), including any right to have a complaint or dispute referred to EWON and how such a complaint or dispute can be assessed



- Provide the above information free of charge to customers at least once a year with their bills
- Make the above information available free of charge on its website.

The '[Feedback and complaints' webpage](#) on WaterNSW's website explains that customers 'have the right to contact the Energy and Water Ombudsman of NSW (EWON) at any time for independent advice and information'. It also includes contact details for EWON.

WaterNSW advised that it has developed standard invoice templates for groundwater, unregulated river, and regulated river customers. WaterNSW provided to us sample invoices issued in the audit period for a groundwater customer (issued on 27 November 2023), unregulated river customer (issued on 7 December 2023), and regulated river customer (issued on 20 December 2023). We observed that each invoice included a 'Complaints' section stating the following:

*WaterNSW will always endeavour to resolve issues to your satisfaction. However, you can also contact the Energy and Water Ombudsman (EWON) on 1800 246 545.*

We note that the above text implicitly explains that the customer has 'any right to have a Complaint or dispute referred to the Energy and Water Ombudsman of NSW', as required by this clause. However, this clause also requires that the information explains 'how such a Complaint or dispute can be assessed'. Therefore, we consider that a deficiency exists against part (b) of this clause (**Recommendation 2024/6.10.2 – 1**).

We consider that this is a deficiency and not a shortcoming as it is a breach of WaterNSW's operating licence requirement, leading to a risk that customers are not fully informed of the process to have a complaint or dispute referred to EWON and assessed.

However, we consider that the risk posed by this deficiency is minimal and, therefore, that the deficiency is non-material. Our assessment of the level of risk is made on the basis of:

- WaterNSW's standard invoice templates making it clear that the customer can contact EWON and clearly communicating EWON's contact details
- The information prepared under part (a) of this clause being readily available on WaterNSW's website, as required by part (c) of this clause.

We make no recommendations for this non-compliance. Under the 2024-2028 Operating Licence, WaterNSW is only required to notify customers that a summary of the dispute resolution scheme, under EWON, is available on WaterNSW's website. The revised obligation does not require WaterNSW to explain 'how such a complaint or dispute can be assessed'.

## Recommendations

We make no recommendations in response to this non-compliance for the reasons detailed above.


## Opportunities for improvement

No opportunities for improvement were identified.

## Clause 6.11 – Educative role

### Clause 6.11.1

Table 3-51 Clause 6.11.1 compliance grade

Subclause	Requirement	Compliance grade
6.11.1	Water NSW must undertake an educative role in the community on its activities and functions in Declared Catchment Areas consistent with its objectives under section 6(1)(c) of the Act, and report on its educative activities in accordance with the Reporting Manual.	Compliant 
<b>Risk</b> Failure to comply with this obligation presents a moderate risk that community members may not be aware of WaterNSW's activities and functions in Declared Catchment Areas.		<b>Target for full compliance</b> Details of educational activities undertaken by WaterNSW during the audit period and evidence that it has reported on such activities in accordance with the Reporting Manual.

#### Summary of reasons for grade

We consider that WaterNSW has met the requirements of this clause. Our conclusion is based on WaterNSW:

- Identifying planned community education activities through its Catchment Protection Work Program
- Reporting on completed community education activities through its Annual Catchment Management Report and in accordance with its reporting manual
- Evaluating the effectiveness of its completed community education activities through mechanisms such as conducting post-excursion feedback surveys of participating teachers.

This clause is graded as compliant.

#### Discussion and notes

This clause requires that WaterNSW undertake an educative role in the community on its activities and functions in declared catchment areas consistent with its objectives under section 6(1)(c) of the *Water NSW Act 2014*. This clause further requires that WaterNSW report on its educative activities in accordance with its reporting manual.

WaterNSW's planned community education activities for a given financial year are identified in its annual Catchment Protection Work Program. The Catchment Protection Work Program 2024 (D2023/43501) sets out WaterNSW's vision for catchment protection, seven priority areas and corresponding goals for achieving that vision, and a set of planned activities within each priority area. For each priority area, the issues driving the prioritisation of that area, and the desired outcomes upon the successful completion of the planned activities, are identified.

The Catchment Protection Work Program includes a specific priority area for 'Educating and engaging communities', but some activities listed under other priority areas can also be considered as community education activities. For example, 'Undertake workshops, field days and events, social media, and other communication activities to engage with landholders about waterway rehabilitation and sustainable grazing' is part of the 'Increasing regenerative agriculture' priority area but is underpinned by community education and engagement.

The community education activities completed by WaterNSW in a given financial year are reported on as part of its Annual Report on Catchment Management. Under Section 2.1.3 of WaterNSW's reporting manual, the Annual Report on Catchment Management is required to include an explanation of the types of community education activities and programs that it runs, and the actual (completed) community education activities. We reviewed the draft Annual Catchment Management Report for 2024 (D2024/60000) and confirmed that, for community education activities, it addresses the requirements of WaterNSW's reporting manual.



As an example of how WaterNSW monitors the effectiveness of community education activities, WaterNSW provided to us the results of a post-excursion feedback survey that it issued to teachers following primary, secondary and tertiary student excursions held at Warragamba Dam between July 2023 and June 2024 (D2024/13184). We reviewed the feedback results and confirmed that most respondents agreed or strongly agreed that:

- Their students better understood Sydney's drinking water catchment and the role of WaterNSW in catchment management
- Their students better understood the risks to water quality and actions they can take to care for drinking water in Sydney's drinking water catchment
- That they would attend another excursion at Warragamba Dam
- That they would recommend an excursion at Warragamba Dam to other educators.

### **Recommendations**

No recommendations were identified.


### **Opportunities for improvement**

No opportunities for improvement were identified.

## Clause 6.17 – Online portal for lodgement of documents relating to metering equipment

### Clause 6.17.2

Table 3-52 Clause 6.17.2 compliance grade

Subclause	Requirement	Compliance grade
6.17.2	<p>By 31 August 2023, Water NSW must:</p> <ol style="list-style-type: none"> <li>develop, in consultation with NRAR and DPE, and maintain a data retention protocol to ensure that data, certificates, reports and other documents lodged in the portal are retained for the period required by the State Records Act 1998 (NSW) and any other applicable law; and</li> <li>implement and comply with the data retention protocol maintained under clause 6.17.2(a).</li> </ol>	<p>Compliant</p> 
<p><b>Risk</b></p> <p>Not developing and implementing a data retention protocol may mean that WaterNSW does not comply with the State Records Act 1998 and any other applicable law.</p>		<p><b>Target for full compliance</b></p> <p>Evidence that WaterNSW has developed a data retention protocol meeting the requirements of this clause.</p> <p>Evidence that WaterNSW has implemented the data retention protocol through operationalising procedures, retention policies and trailed files.</p>

#### Summary of reasons for grade

We consider that WaterNSW has met the requirements of this clause. Our conclusion is made based on:

- WaterNSW having developed a DQP Document Retention Protocol and Back-Up Procedures document
- WaterNSW providing evidence of e-mail correspondence with NRAR and the Department that confirmed the agreement of a data retention protocol by 31 August 2023
- Confirming via live systems demonstrations that the retention policies required by the protocol had been implemented in Azure, that a yearly copy of the DQP database is coded to be backed up to a non-Azure environment and kept for two years as per the requirements of the protocol, and that the protocol had been implemented for a sample meter validation certificate trailed during the audit interview.

This clause is graded as compliant.

#### Discussion and notes

WaterNSW has developed a DQP Document Retention Protocol and Back-Up Procedures document (CD2022/110).

WaterNSW provided evidence of e-mail correspondence between WaterNSW, NRAR and the Department to understand the requirements for retaining, archiving and disposing of duly qualified person (DQP) documents. A subsequent meeting between WaterNSW, NRAR and the Department was held on 8 July 2022 to discuss and confirm the document retention policy for all DQP documents and certificates, with minutes documented by WaterNSW in an e-mail to NRAR and the Department. All three agencies confirmed via e-mail that 'FA 256 Functional Retention and Disposal Authority' was suitable for use for DQP documents and certificates.

'FA 256 Functional Retention and Disposal Authority' covers records documenting the function of water resources management. It is approved under section 21(2)c of the *State Records Act 1998* (the Act) following prior approval by the Board of the State Records Authority of New South Wales in accordance with section 21(3) of the Act.

In the e-mail correspondence with NRAR and the Department, NRAR noted that it was 'currently in the process of reviewing and replacing this Authority... however [it] would expect the retention period for this material to remain the same in the new Authority which is a consolidation and update of previous authorities to create a single document for the water agencies'.



Although after the audit period, WaterNSW provided e-mail confirmation from NRAR and the Department in September 2024 that 'FA 256 Functional Retention and Disposal Authority' continued to be suitable for use for DQP documents and certificates. This demonstrates that the Authority was considered to remain suitable for use during the audit period.

The implementation of the DQP Document Retention Protocol and Back-Up Procedures is supported by the WaterNSW Azure SQL Database & Azure SQL Managed Instance Databases Production Back Up Retention procedure (D2022/48701), Records Disposal Procedure (CD2011/593), and Records Management Procedures Manual (CD2015/546).

During the audit interview, we noted that the WaterNSW Azure SQL Database & Azure SQL Managed Instance Databases Production Back Up Retention procedure specifies that monthly back-ups of Azure SQL Managed Instance Databases are kept for 12 months and that yearly back-ups are kept for two years. However, in Section 3.2 of the DQP Document Retention Protocol and Back-Up Procedures, it is stated that the 'DQP Portal is hosted under the AZURE SQL Managed Instance' and that the 'DQP DB is configured to be backed-up... Monthly for 24 months [and] Yearly (Last week (52) backup of the year) for 10 years'. We enquired with WaterNSW as to the reason for the different retention periods. In response, WaterNSW advised that the former document establishes 'default' retention periods, which are then varied, by the DQP Document Retention Protocol and Back-Up Procedures, for the specific application of retaining DQP records.

During the audit interview, we confirmed via live systems demonstrations that the retention policies required by the protocol had been implemented in Azure, that a yearly copy of the DQP database is coded to be backed up to a non-Azure environment and kept for two years as per the requirements of the protocol, and that the protocol had been implemented for a sample meter validation certificate.

### **Recommendations**

No recommendations were identified.

### **Opportunities for improvement**

No opportunities for improvement were identified.

## 4 Previous recommendations

### 4.1 Recommendation 2023-01 (Clause 2.1.1)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should undertake a gap analysis and develop a project plan including resourcing and timelines to update the WQMS to meet all aspects of the actions in the ADWG Framework.
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – in progress. An internal review addressing recommendations was conducted in March. Actions added to Water Quality Improvement plan (WQIP) with actions expected to be completed by 30 April 2024.
IPART guidance	Auditor to check for completion.
Audit finding	The Gap Analysis and Plan - June 2024 (D2024/52240) has been developed and reviewed.
Recommendation status	This recommendation is closed.

### 4.2 Recommendation 2023-02 (Clauses 2.1.1 and 2.1.2)

Item	Detail
<b>IPART's recommendation to the Minister</b>	By 30 June 2025, Water NSW should implement the project plan to rectify gaps in the WQMS (developed under recommendation 2023-01) to meet all aspects of the actions in the ADWG Framework. At a minimum, the update should: <ul style="list-style-type: none"> <li>a. Ensure that responsibilities for meeting water quality regulatory and formal obligations are understood and assigned in sufficient detail to ensure these obligations are understood and met</li> <li>b. Confirm there are processes for ensuring staff are trained, competent and understand their delegations to implement the aspects of the WQMS relevant to their roles</li> <li>c. Document Water NSW's approach to operational water quality risk assessments and how uncertainty is evaluated in water quality risk assessments</li> <li>d. Formalise processes that consolidate improvement actions e.g. from C2C risk assessments, internal and tripartite incident debriefs, Health Checks, operational risk assessments and ensure accountability, timelines and reporting are documented</li> <li>e. Review the Water Quality Data Review and Reporting Procedure (CD2012/130) to ensure it provides assurance that all the monitoring in the Water Monitoring Program Manual (CD2011/179) is undertaken and the context sections of the Water Quality Monitoring Program (CD2011/170) are current</li> <li>f. Review the processes recorded under the short-term evaluation of results to confirm if they are relevant to this action or if they should be recorded as processes elsewhere in the WQMS.</li> </ul>
<b>Progress on audit findings as reported by utility on 30 April 2024</b>	New recommendation from the 2023 operational audit – in progress. Actions underway include: <ul style="list-style-type: none"> <li>• improving training materials and presenting to staff</li> <li>• developing a specific procedure for operational risk assessments for use in upcoming C2C workshops.</li> </ul>

Item	Detail
	Additional work is proposed to update relevant procedures and processes to address the recommendation. All actions are expected to be completed by the due date.
<b>IPART guidance</b>	Auditor to check Water NSW's progress against the recommendation.
<b>Audit finding</b>	<p>WaterNSW advised that they are on track for completion of this recommendation by the due date of 30 June 2025. We consider that there was insufficient evidence to confirm that WaterNSW are on track to complete the recommendation by the due date.</p> <p>We note that WaterNSW reported to the Board (D2024/78315) that actions to address the non-compliance and recommendations from the 2022-23 Operational Licence Audit report were expected to be completed by 30 June 2024. We have made further commentary on this in clause 2.1.3.</p> <p>In terms of progress to complete the recommendation, WaterNSW have developed a project plan (D2024/52240) to address the non-compliances (as required by Recommendation 2023-01). The project plan schedule extends beyond 30 June 2025. For example: WQMS0662-3 relates to Part C of Recommendation 2023- 02. WaterNSW have scheduled to finalise this action by October 2025 (page 30 of D2024/52240), which is after the due date for this Recommendation.</p> <p>As noted in clause 2.1.3, WaterNSW has gaps in the consistent, timely and comprehensive implementation of scheduled improvement activities (e.g. WQMS0492 and WQMS0488 – 3).</p>
<b>Recommendation status</b>	This recommendation is open.

## 4.3 Recommendation 2023-03 (Clause 2.1.1)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should formalise processes and record keeping associated with changing CCP instrument locations and SCADA (Supervisory Control and Data Acquisition) alarm values including the return to documented values following incidents.
Progress on audit findings as reported by utility on 30 April 2024	<p>New recommendation from the 2023 operational audit – reviewed: actions not started. Water NSW will review and update existing processes and procedures of SCADA Configuration and Change management procedure.</p> <p>This is expected to be completed by the due date.</p>
IPART guidance	Auditor to check for completion.
Audit finding	<p>WaterNSW advised that they consider this recommendation completed.</p> <p>We consider that WaterNSW have made progress, including updating the SCADA Standards - Change Management Standard (CD2024/2) to require that requests for changes to a CCP alarm setpoint requires an additional approval from either the Water Quality Services Manager or the Manager Water Quality.</p> <p>We consider that this recommendation has not been completed, with the following outstanding gaps:</p> <ul style="list-style-type: none"> <li>• A documented WQMS process that requires CCP alarm values to be returned to documented values following changes (e.g. due to maintenance, incidents and events). <ul style="list-style-type: none"> <li>○ WaterNSW advised that the approval requirement in Section 5.1.1.2 of CD2024/2 is intended to cover both changes to CCP alarms and reverting alarm values after the change, this is however not included in the procedure.</li> </ul> </li> <li>• A documented WQMS process that specifies maximum duration for a CCP alarm change. <ul style="list-style-type: none"> <li>○ WaterNSW advised that the maximum duration permitted for a CCP change is two weeks. WaterNSW have not documented the two-week maximum duration</li> </ul> </li> </ul>

Item	Detail
	<p>in the WQMS. WaterNSW provided screenshots of two examples of the CCP alarm change process in SCADA, however it is unclear if the 'alarm disable duration' is an optional or required setting. It is also unclear if the maximum two-week duration is hard coded into SCADA, or if the user can select a duration longer than two weeks.</p> <ul style="list-style-type: none"> <li>Formalised processes and record keeping associated with changing CCP instrument locations.</li> </ul>
Recommendation status	This recommendation is open.

## 4.4 Recommendation 2023-04 (Clause 2.1.1)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should finalise the O&M Manual for the Upper Canal to ensure it meets the requirements of Element 4 of the ADWG Framework.
Progress on audit findings as reported by utility on 30 April 2024	<p>New recommendation from the 2023 operational audit – reviewed: actions not started.</p> <p>Water NSW will update O&amp;M manual to include a section on the Upper Canal in line with requirements under element 4 of the ADWG framework.</p> <p>This is expected to be completed by the due date.</p>
IPART guidance	Auditor to check for completion.
Audit finding	<p>WaterNSW advised that this recommendation is complete.</p> <p>WaterNSW advised during the audit interviews that the Upper Canal O&amp;M manual was published in October 2024. WaterNSW provided the finalised and approved manual that meets the requirements of element 4 of the ADWG Framework as evidence.</p>
Recommendation status	This recommendation is closed.

## 4.5 Recommendation 2023-05 (Clause 2.1.2)

Item	Detail
IPART's recommendation to the Minister	By 31 December 2024, Water NSW should confirm that the FRWSS annual review adequately meets the ADWG requirements for long term evaluation of results.
Progress on audit findings as reported by utility on 30 April 2024	<p>New recommendation from the 2023 operational audit – reviewed: actions not started.</p> <p>Water NSW will review the adequacy of the FRWSS annual review for long term evaluation of results and update where required.</p> <p>This is expected to be completed by the due date.</p>
IPART guidance	Auditor to check Water NSW's progress with Recommendation 2023-05.
Audit finding	WaterNSW provided evidence that they conducted a review in October 2024 of the FRWSS annual review to ensure it adequately meets the ADWG requirements for long term evaluation of results. The review included four (4) recommendations that have been added to the Water Quality Improvement Plan.
Recommendation status	This recommendation is closed.

## 4.6 Recommendation 2013-06 (Clause 2.1.3)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should update the C2C risk assessment procedure to define Water NSW's role in C2C risk assessments for customers other than Sydney Water.
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – in progress. Meetings will be held with councils to discuss their involvement. This is expected to be completed by the due date.
IPART guidance	Auditor to check for completion.
Audit finding	The recommendation has been completed. The Conduct Catchment-to-Customer (C2C) Risk Assessment (CD2021/92[v4]) has been updated to include the process for conducting risk assessments for customers other than Sydney Water.
Recommendation status	This recommendation is closed.

*[Note added by auditor: This recommendation was raised in the 2023 audit but was typographically referred to with a "2013" prefix.]*

## 4.7 Recommendation 2023-07 (Clause 2.1.3)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should conduct its own formal incident debriefs within the two-week standdown timeframe as recorded in the incident management procedure, independent of customer incident status. These debriefs should include an improvement action plan that assigns responsibilities and due dates for actions.
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – in progress. Training materials were updated to address the recommendation. Implementation of new incident management training for all staff is in progress. This is expected to be completed by the due date.
IPART guidance	Auditor to check for completion.
Audit finding	The recommendation has been completed.  There were no water quality specific incidents during the audit period, however WaterNSW provided an example of the debrief undertaken for a significant rainfall event in June 2024 as evidence. This incident was a flood incident that had the potential to become a water quality incident, however the incident was monitored and managed without impacting water supply. This example demonstrated that the Incident Management Procedure debrief process was undertaken in a timely manner.  Training options were also reviewed, and staff have been nominated by the General Manager Water Planning and Delivery for training. The process is underway to roll out AIIMS training to all nominated staff by the end of 30 June 2025.
Recommendation status	This recommendation is closed.

## 4.8 Recommendation 2023-08 (Clause 2.1.3)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should review and update its processes to ensure exceedances are appropriately recorded in RACS. This recommendation addresses the findings of lead exceedance in FRWSS, SCADA exceedance not recorded in RACS and consequence descriptors not matching CCP hazards.

Item	Detail
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – reviewed: actions not started. Internal review conducted. The WQ Data Review and Reporting Procedure will be updated to include steps to ensure exceedances are recorded in RACS, plus a routine review of their status.
IPART guidance	Auditor to check for completion.
Audit finding	WaterNSW advised that they have completed this recommendation. We consider that progress has been made, including work to consolidate water quality exception records from different sources using a data tracking spreadsheet (D2023/66841) and instating weekly data check meetings (IM2024/1880). We consider that this recommendation has not been completed, with the outstanding gap that WaterNSW have not formalised the processes implemented in the WQMS (i.e. the new processes aren't referenced in the WQMS).
Recommendation status	This recommendation is open.

## 4.9 Recommendation 2023-09 (Clause 2.1.3)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should review industry practice and assess options for replacing lead seals for mains pipeline connections during repairs and maintenance. If an alternative process that meets AS4020:2018 cannot be implemented, Water NSW should update their WQMS with a process for allowing products that do not comply with AS4020:2018 to be assessed for water quality safety and document the repair procedure following this assessment processes.
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – reviewed: actions not started. Internal review completed with actions pending to collate all existing investigations and modify WQMS to reflect the status. This is expected to be completed by the due date.
IPART guidance	Auditor to check for completion.
Audit finding	The recommendation has not been completed. Water NSW initially advised that an internal review was conducted, but it was not formally documented. Meetings were held to discuss the review of lead seals (D2024/84240). During the audit, WaterNSW advised that the review and an options assessment would be formalised by 31 December 2024. After the audit interviews, Water NSW advised that a formal review was conducted in December 2024. Evidence of the formal review has not been provided, and the outcomes of this process are unclear. WaterNSW have also advised that Modelpedia still needs to be updated to reflect this.
Recommendation status	This recommendation is open.

## 4.10 Recommendation 2023-10 (Clause 2.1.3)

Item	Detail
IPART's recommendation to the Minister	By 31 December 2024, Water NSW should review and update the WQMS assurance reporting processes and associated delegations to ensure that board reporting is accurate and changes to metrics and targets are being undertaken by those with appropriate delegations.

Item	Detail
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – reviewed: actions not started. Internal review completed with actions pending to confirm appropriate delegations and review of metrics and targets for reporting purposes. This is expected to be completed by the due date.
IPART guidance	Auditor to check Water NSW's progress with Recommendation 2023-10.
Audit finding	<p>WaterNSW advised that they were on track to complete this recommendation by the due date.</p> <p>WaterNSW advised that a deep dive on the Assurance Plan process has been included in the WQIP for 2024-25 to address this action.</p> <p>In terms of progress to complete the recommendation, we consider that:</p> <ul style="list-style-type: none"> <li>Significant work is still required to meet the due date, particularly given the extent of non-compliances associated with Board reporting highlighted in clause 2.1.3.</li> <li>As noted in clause 2.1.3, WaterNSW has gaps in timely and comprehensive implementation of activities scheduled in the Assurance Plan.</li> </ul> <p>We note that WaterNSW inconsistently reported to the Board (D2024/78315) that actions to address the non-compliance and recommendations from the 2022-23 Operational Licence Audit report were expected to be completed by 30 June 2024. We have made further commentary on this in clause 2.1.3.</p>
Recommendation status	This recommendation is open.

## 4.11 Recommendation 2023-12 (Clause 2.8.8)

Item	Detail
IPART's recommendation to the Minister	<p>By 31 December 2024, Water NSW should agree with the Department of Planning and Environment the preferred agreement arrangement for the ongoing sharing of data and/or information. This is to take into account the requirements of Water NSW's new operating licence, anticipated to come into effect on 1 July 2024.</p> <p>Options for the preferred agreement may include, but are not limited to, cessation of existing agreements (such as the Memorandum of Understanding for Information Sharing), variation and expansion of existing agreements (such as the Data Sharing Agreement), or the creation of new agreements. The preferred arrangement must not lead to a breach of licence.</p>
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – reviewed: actions not started. Actions to address the recommendation have been identified and are expected to be completed by the due date.
IPART guidance	Auditor to check Water NSW's progress against the recommendation.
Audit finding	<p>WaterNSW advised that, at a meeting of the Greater Sydney Water Strategy Working Group on 17 June 2024, it agreed with the Department that the Data Sharing Agreement would be used as the sole instrument for all future data sharing needs. On 7 May 2024, WaterNSW's Executive Manager – Digital (Chief Information Officer) issued a letter to the Department's Director of Data and Information to vary the Data Sharing Agreement. On 16 October 2024, the Deputy Secretary of the Department's Water Group issued a letter to WaterNSW's Chief Executive Officer to terminate the Memorandum of Understanding for Information Sharing.</p>
Recommendation status	This recommendation is closed.

## 4.12 Recommendation 2023-13 (Clause 5.1.2)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should develop its first Integrated Asset Management System Improvement Plan.
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – in progress. The Asset Management Governance Committee (AMGC) has been established to oversee the implementation of the Integrated AMS Improvement Plan. Terms of reference and meetings have been established to execute the improvement plan. Draft improvement plan and register are currently under review with final version expected by the due date.
IPART guidance	Auditor to check for completion.
Audit finding	An Asset Management Governance Committee has been established to drive asset management improvement activities. Improvement activities have been developed following internal and external audits, benchmarking activities, meetings of the Asset Management Governance Committee and Asset Planning and Delivery priority initiatives. A consolidated Asset Management Improvement Plan has been developed, accompanied by a consolidated Asset Management System Improvement Action Register.
Recommendation status	This recommendation is closed.

## 4.13 Recommendation 2023-14 (Clause 5.2.2)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should review and update business processes to ensure that all reported environmental incidents and hazards are investigated, and preventive as well as corrective actions are identified prior to closure of the incident.
Progress on audit findings as reported by utility on 30 April 2024	New recommendation from the 2023 operational audit – in progress. Actions have commenced. The incident reporting protocol will be updated to ensure investigations are completed and corrective actions are assessed by the Environment Services Team. All updates are expected to be completed by the due date.
IPART guidance	Auditor to check for completion.
Audit finding	The <i>Environmental Incident Management Protocol</i> (CD2016/6[v5]) has been revised and meets the requirements of the recommendation. The revised document was requested to be published on 4 July 2024 (2023 - 14 5.2.2 CD20166 Environmental Incident Management Protocol screenshot).
Recommendation status	This recommendation is closed.

## 4.14 Recommendation 2023-15 (Clause 6.16.1)

Item	Detail
IPART's recommendation to the Minister	By 30 June 2024, Water NSW should agree with NRAR (and DPE) on a clearer definition of a 'serious field safety issue' and reasonable expectations on notification periods.



Item	Detail
Progress on audit findings as reported by utility on 30 April 2024	<p>New recommendation from the 2023 operational audit – in progress.</p> <p>Actions have commenced and item added to the agenda for the next Water NSW and NRAR Operations meeting.</p> <p>Actions are expected to be completed by the due date.</p>
IPART guidance	Auditor to check for completion.
Audit finding	<p>This recommendation comprises two parts:</p> <ul style="list-style-type: none"> <li>• That WaterNSW agree with NRAR (and DCCEEW if applicable) on a clearer definition of a 'serious field safety issue'</li> <li>• That WaterNSW agree with NRAR (and DCCEEW if applicable) on reasonable expectations on notification periods. This part of the recommendation arose due to the length of time between the occurrence of a safety incident at WaterNSW's Parramatta office (10 January 2023) and the time of notification to NRAR (2 February 2023).</li> </ul> <p>WaterNSW considers that it has completed this recommendation. We consider that the definition agreed between WaterNSW and NRAR, along with the types of serious field safety issues outlined by NRAR, provide a clearer definition of a 'serious field safety issue'. However, the clarification agreed between WaterNSW and NRAR does not include 'reasonable expectations on notification periods'. For the latter, we would expect to see a clarification along the lines of 'as far as practicable or within x days/weeks, whichever comes earlier'.</p> <p>Therefore, we do not consider this recommendation to be closed.</p>
Recommendation status	This recommendation is open.

# Appendix A Audit method, regulatory regime, and quality assurance process

## A.1 Audit method<sup>3</sup>

### A.1.1 Audit scope

The scope of the audit comprises:

- The operating licence clauses listed in the table below. These clauses have been selected by IPART on a risk basis.
- The following recommendations:
  - Recommendation 2023-01
  - Recommendation 2023-02
  - Recommendation 2023-03
  - Recommendation 2023-04
  - Recommendation 2023-05
  - Recommendation 2023-06
  - Recommendation 2023-07
  - Recommendation 2023-08
  - Recommendation 2023-09
  - Recommendation 2023-10
  - Recommendation 2023-11
  - Recommendation 2023-12
  - Recommendation 2023-13
  - Recommendation 2023-14
  - Recommendation 2023-15

The operational audit covers the period from 1 July 2023 to 30 June 2024.

---

<sup>3</sup> Note: Effective from 1 January 2024 (i.e., during the audit period), the functions relevant to this audit that were previously undertaken by the Department of Planning and Environment are now undertaken by the Department of Climate Change, Energy, the Environment and Water. All references in this audit report to the “Department of Planning and Environment” are taken to refer to the “Department of Climate Change, Energy, the Environment and Water”.

## Licence sections within the 2023/24 audit scope

Section	Clause	Sub-clause
2 Water source protection and conservation	2.1 Water quality management system	2.1.1
		2.1.2
		2.1.3
	2.6 Water conservation	2.6.1
		2.6.2
		2.6.3
	2.7 Research on catchments	2.7.1
3 Bulk water storage and transmission	3.2.1 Water supply	3.2.1
5 Organisation management systems	5.1 Asset management system	5.1.2
6 Customer and stakeholder relations	6.4 Advance notification of changes to flow release patterns The audit scope was limited to a review of Wingecarribee Reservoir only.	6.4.1
	6.5 Customer advisory groups	6.5.1
		6.5.2
		6.5.3
		6.5.4
		6.5.5
	6.6 Customer advisory group charter	6.6.2
	6.8 Code of practice on payment difficulties	6.8.1
		6.8.2
		6.8.4
	6.9 Internal complaints handling procedure	6.9.1
		6.9.2
		6.9.3
	6.10 External dispute resolution scheme	6.10.1
		6.10.2
	6.11 Educative role	6.11.1
	6.17 Online portal for lodgement of documents relating to metering equipment	6.17.2

## A.1.2 Audit standard

In conducting the audit, the auditors have followed IPART's Public Water Utility Audit Guideline (July 2023).

Regard has also been given to the following standards and codes, especially where these provide specific detail appropriate to the audit:

- ASAE 3100 (2017) Compliance Engagements, issued by the Auditing and Assurance Standards Board
- ISO 19011:2018 Guidelines for auditing management systems
- AS/NZS ISO 9001:2016 Quality management systems – Requirements



- ISO 17021:2015 Conformity assessment – Requirements for bodies providing audit and certification of management systems (contains principles and requirements for the competence, consistency and impartiality of the audit and certification of management systems of all types)
- ISO 31000:2018 Risk management.

### A.1.3 Audit steps

The audit process has been conducted as described in IPART's Public Water Utility Audit Guideline (July 2023).

### A.1.4 Audit team

The audit team and audit qualifications are provided below.




#### Audit team members and their qualifications



Team member	Details
Ella Hingston, Stantec Lead Auditor	Ella Hingston (BE (Civil) (Hons)) holds the following qualifications: <ul style="list-style-type: none"> <li>• CPEng (Asset Management)</li> <li>• RPEQ (Civil Engineering)</li> </ul>
Geoffrey Kleu, Stantec Auditor	Geoffrey Kleu (BE (Mechatronics) (Hons)) holds the following qualifications: <ul style="list-style-type: none"> <li>• Institute of Asset Management – Certificate in Asset Management</li> </ul>
Patrick Schnelle, Atom Consulting Auditor	Patrick Schnelle (LLM (Environmental Law), BE (Chemical & Biomolecular) (Hons), BSc (Environmental), CEng) holds the following auditor qualifications: <ul style="list-style-type: none"> <li>• Exemplar Global Lead Water Quality Management System Auditor (Drinking and Recycled Water) (Certificate No. 446354)</li> </ul>
Philip de Souza, Atom Consulting Auditor	Philip de Souza (BSc Eng Hons (Water Utilisation), BSc Eng (Chemical), PrEng) holds the following auditor qualifications: <ul style="list-style-type: none"> <li>• Exemplar Global Lead Water Quality Management System Auditor (Drinking and Recycled Water) (Certificate No. 475875)</li> </ul>

### A.1.5 Audit grades

The audit grade definitions used in assessing the auditee's performance against the requirements are set out below.

#### Audit grades

Audit grade	Description
Compliant 	Sufficient evidence is available to confirm that the requirements have been met.
Compliant (minor shortcomings) 	Sufficient evidence is available to confirm that the requirements have been met apart from minor shortcomings which to date have not compromised the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes
Non-compliant (non-material) 	Sufficient evidence is not available to confirm that the requirements have been met and the deficiency does not adversely impact the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes
Non-compliant (material)	Sufficient evidence is not available to confirm the requirements have been met and the deficiency does adversely impact the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes.

Audit grade	Description
	
No requirement 	There is no requirement for the utility to meet this criterion within the audit period

## A.2 Regulatory regime

WaterNSW operates largely in a New South Wales context but must also have regard to matters outside of that jurisdiction, where those matters may affect how it does business. A summary of the key legal and regulatory instruments for WaterNSW is provided below. It should be noted that this listing is intended to be illustrative, and not exhaustive, for the purposes of this report.

### Key legal and regulatory instruments relevant to WaterNSW's operating licence<sup>4</sup>

Instrument	Relevance
Competition and Consumer Act 2010 (Cth)	An Act for the promotion of competition and fair trading and provision for consumer protection. Could apply to the 'fitness for purpose' of any product or service supplied.
Current version of the Australian Drinking Water Guidelines	These guidelines are called up under WaterNSW's Operating Licence obligations.
Government Information (Public Access) Act 2009 (NSW)	Information may be requested from WaterNSW, which relates to aspects of the licence.
Water NSW Act 2014 (NSW)	An Act which establishes Water NSW, defining the functions and objectives of Water NSW.
WaterNSW Operating Licence 2022-2024	A licence issued by the Governor under section 11 of the Water NSW Act, which enables WaterNSW to provide relevant services within its area of operations. This licence also gives effect to the operational audits (this audit) to which WaterNSW is subject.
Independent Pricing and Regulatory Tribunal Act 1992 (NSW)	Allows for the regulation of utilities such as WaterNSW including the administration and auditing of licences and pricing functions.
Memorandum of Understanding with NSW Health 2016	Sets out the working relationship between NSW Health and WaterNSW.
Memorandum of Understanding with Environment Protection Authority 2016	Sets out the working relationship between the Environment Protection Authority and WaterNSW.
Memorandum of Understanding with Department of Planning and Environment	Sets out the working relationship between the Department of Planning and Environment and WaterNSW.

<sup>4</sup> Where legislation is identified in this table, a reference to that legislation should be taken to include any Regulation/s made pursuant to it

Instrument	Relevance
Memorandum of Understanding with the Natural Resources Access Regulator	Sets out the working relationship between the Natural Resources Access Regulator and WaterNSW.
Roles and Responsibilities Agreement	Sets out the roles, responsibilities, functions and activities of WaterNSW, Department of Planning and Environment, Natural Resources Access Regulator and the Water Administration Ministerial Corporation in relation to NSW water legislation
Public Health Act 2010 (NSW)	The objectives of this Act are to protect and promote public health, control risks to public health, promote the control and prevent the spread of infectious diseases and recognise the role of local governments in protecting public health. Supporting Regulations are intended to support the smooth operation of the Act. WaterNSW has obligations under this Act including notifying the Minister of any situation that is likely to be a risk to public health.

## A.3 Quality assurance process

Checks of information received have been conducted, including aspects such as dates for audit scope compliance, veracity of information, coverage of the subject area being audited, and depth of implementation. Professional scepticism (as per ASAE 3100) has been applied as part of the document review and on-site audit. Auditors have liaised frequently with each other. Support auditors have been used for clauses where the audit load was heavy.

The audit report has been proof-read and cross-checked by the audit team members. An overall quality assurance review has been conducted by the audit team leader.

## Appendix B Acronyms and abbreviations

Item	Detail
ACR	Asset Change Request
ADWG	NHMRC, NRMCC (2011) <i>Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy</i> . National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra. ISBN Online: 1864965118
AIIMS	Australian Inter-Service Incident Management System 2017
ALARP	As low as reasonably practical
AMP	Asset Management Plan
AMS	Asset Management System
ARK	Records Management System
AS	Australian Standard
AS ISO 19600:2015	Compliance management systems – Guidelines
AS/NZ ISO 9001:2016	Quality Management Systems – Requirements (the Quality Management System)
AS/NZS 10002:2014	Guidelines for complaint management in organizations
AS/NZS 4020:2018	Australian and New Zealand Standards for testing of products for use in contact with drinking water
ASAE 3100	Standard on Assurance Engagements ASAE 3100 Compliance Engagements
ATS	Approval to Spend
BOM	Bureau of Meteorology
BOOT	Build own operate transfer
C2C	Catchment to Consumer/Catchment to Customer
CAG	Customer Advisory Group
CALOSS	Water Delivery Capability Loss
CCP	Critical control point
CEO	Chief Executive Officer
CIMS	Consolidated information management system
CMMS	Computerised maintenance management system
CMT	Crisis Management Team
CSR	Capture Store Release
CWT	Clear Water Tank
DAS	Data Acquisition Service
DPE	NSW Department of Planning and Environment. <i>Note: Effective from 1 January 2024 (i.e., after the audit period), the functions relevant to this audit that were previously undertaken by the Department of Planning and Environment are now undertaken by the Department of Climate Change, Energy, the Environment and Water. All references in this audit report to the “Department of Planning and Environment” are taken to refer to the “Department of Climate Change, Energy, the Environment and Water”.</i>
DPI	NSW Department of Primary Industries

Item	Detail
DQP	Duly Qualified Person
DSA	Data Sharing Agreement
EAMS	Enterprise Asset Management System
Element	Elements of the ADWG Framework for the Management of Drinking Water Quality
EMS	Environmental Management System
EWN	Early Warning Network
Framework	Framework for Management of Drinking Water Quality
FRWSS	Fish River Water Supply Scheme
GL/a	Gigalitres per annum
GSWS	Greater Sydney Water Strategy
IAL	Irrigation Australia
IBMS	Integrated Business Management System
ICT	Information and communications technology
IMT	Incident Management Team
INSF	Integrated Management System Framework
IPART	Independent Pricing and Regulatory Tribunal of NSW
ISO	International Standards Organisation
ISO 14001:2015	Environmental management systems – Requirements with guidance for use
ISO 17021:2015	Conformity Assessment – Requirements for bodies providing audit and certification of management systems
ISO 19011:2018	Guidelines for auditing management systems
ISO 3100:2018	Risk management
ISO 55001:2014	Asset management – Management systems – Requirements
JAICT	Joint Agency ICT Steering Committee
JOG	Joint Operations Group
KPI	Key performance indicator
LTCOP	Long Term Capital and Operational Plan
LWU	Local water utility
MCP	Maintain Capability Program
MoU	Memorandum of Understanding
NOCTSO	Notification of Change to System Operation
NRAR	Natural Resource Access Regulator
NSW	New South Wales
NSW Health	NSW Ministry of Health
O&M	Operation and Maintenance
OFI	Opportunity for Improvement
ORA	Operational Risk Assessment
RACS	Risk Assurance and Compliance System
RFS	Rural Fire Service

Item	Detail
RRA	Roles and Responsibilities Agreement
SAMP	Strategic Asset Management Plan
SCADA	Supervisory Control and Data Acquisition
SITREP	Situational Report
SLG	Strategic Liaison Group
SOCI Act	Security of Critical Infrastructure Act
SPAL	Special Purpose Access Licence
SWC	Sydney Water Corporation
SWIRL	Sydney Water Incident Recording and Learning System
ToR	Terms of Reference
WAMS	Water Administration Ministerial Corporation
WAS	Water Accounting System
<i>WATHNET</i>	Systems model
WFP	Water Filtration Plant
WHS	Workplace Health and Safety
WLS	Water Licensing System
WQIP	Water quality improvement plan
WQMS	Water Quality Management System
WFP	Water Filtration Plant
WTP	Water Treatment Plant

## Appendix C Evidence sighted

### Clause 2.1 – Water quality management system (including Recommendations)

- 2.1 - E1 - CD20145[v7] Water Quality Policy.DOCX
- 2.1 - E1 - D2022163706 Maintenance Officer - Water Treatment Plant PD.PDF
- 2.1 - E1 - D202258566 Maintenance Team Leader Wallerawang PD.PDF
- 2.1 - E1 - D20237950 PD - WCP Water Quality Advisor - 21JAN22.DOCX
- 2.1 - E1 - IM20241837 Image Water Quality Policy at Duckmaloi WFP June 2024.JPG
- 2.1 - E1 -CD201326(v4) Legal and Other Requirements Register.XLSX
- 2.1 - E1 -CD2019123[v2] Controlled Documents Framework.DOCX
- 2.1 - E1 -CD2019153 Manage Controlled Document Review Procedure.DOCX
- 2.1 - E1 -CD2019154 Request New or Updated Controlled Document Procedure.DOCX
- 2.1 - E1 -CD2019155[v2] Develop New or Review Existing Controlled Document Procedure.DOCX
- 2.1 - E1 -CD2019156[v2] Make Controlled Document Obsolete Procedure.DOCX
- 2.1 - E1 -CD2021121[v1] Compliance Management Procedure.DOCX
- 2.1 - E1 -CD2021160[v3] Compliance Management Implementation Plan.DOCX
- 2.1 - E1 D201394543 WaterNSW Water Quality Contact List.DOCX
- 2.1 - E1 D202378752 WaterNSW water quality contact list - August 2023.MSG
- 2.1 - E1 -D202477867 Water Quality Awareness eLearning Training Module June 2024.PPTX
- 2.1 - E1 -D202479440 WQMS - myLearning Email Reminder Example.MSG
- 2.1 - E1 -D202479441 User Guide Competency Dashboard.PDF
- 2.1 - E3 D202260350 Source Water Protection Strategy 2040.PDF
- 2.1.2 - E1 D202399496 Water Quality Performance & Trend Report Jul to Sep Board Committee 18 Oct 23 .DOCX
- 2.1.2 - E1 D2024081575 Item 7.1 Board meeting paper\_Operating Licence Statement of compliance.PDF
- 2.1.2 - E1 D2024118578 Senior Managers Steerco Meeting – Aug 24.DOCX
- 2.1.2 - E1 D202447442 Water Quality Performance and Trend Analysis Report Jan to Mar 24 Board Committee 12 Jun 24 .DOCM
- 2.1.2 - E1 D202477933 Board Committee 13 March 2024 Water Quality Performance and Trend Report .DOCX
- 2.1.2 - E1 D202481576 Item 7.1 Attachment 1 Statement of Compliance 2023-2024\_August Board meeting.PDF
- 2.1.2 - E1 IM20241838 Screenshot - Water Quality Contact List ARK Notes History - 2023-24.PNG
- 2.1.2 - E10 CD2019123[v2] Controlled Documents Framework.DOCX
- 2.1.2 - E10 CD2019153 Manage Controlled Document Review Procedure.DOCX
- 2.1.2 - E10 CD2019154 Request New or Updated Controlled Document Procedure.DOCX



- 2.1.2 - E10 CD2019155[v2] Develop New or Review Existing Controlled Document Procedure.DOCX
- 2.1.2 - E10 CD2019156[v2] Make Controlled Document Obsolete Procedure.DOCX
- 2.1.2 - E10 D2023159010 Water Quality Performance Report Oct 2023.PPTX
- 2.1.2 - E10 D202368041 Annual Catchment Management Report 2023.DOCX
- 2.1.2 - E10 D202372127 Annual Water Quality Monitoring Report\_2022 to 2023.DOCX
- 2.1.2 - E10 D202374856 2022-23 Annual Report on the WQMS notification to NSW Health.MSG
- 2.1.2 - E10 D202379843 Annual Water Quality Monitoring Report\_22 to 23 Appendices.DOCX
- 2.1.2 - E10 D202468440 Annual Water Quality Management System Report 2023-24.PDF
- 2.1.2 - E10 D202479031 JOG Minutes - 13 November 2023.DOCX
- 2.1.2 - E10 D202481021 ARK General User Training Record 2023-24.XLSX
- 2.1.2 - E10 IM20241877 Screenshot - Screenshot - ARK Training Request.PNG
- 2.1.2 - E11 D202368202 WQMS Review 2023 – Tracker.XLSX
- 2.1.2 - E11 D202368252 WQMS Update August 2023 FW WQMS changes in Modeler.MSG
- 2.1.2 - E11 D202399496 Water Quality Performance & Trend Report July to Sept 23 18 Oct 23.DOCX
- 2.1.2 - E11 D202447442 Water Quality Perf Trend Analysis Report Jan to Mar 2024 12 Jun 24.DOCM
- 2.1.2 - E11 D202477933 Board Committee 13 Mar 24 Water Quality Perf Trend Report.DOCX
- 2.1.2 - E11 D202478546 WQMS Fish River Health Check Site Visit Jun 24.DOCX
- 2.1.2 - E11 IM20241838 Screenshot Water Quality Contact List ARK Notes History 23-24.PNG
- 2.1.2 - E12 D201964126 Review Water Quality Management System How to Guide.DOCX
- 2.1.2 - E12 D202478315 Board Committee Jun 24 Annual WQMS Health Check.DOCM
- 2.1.2 - E2 CD2011179[v7] Water Monitoring Program.DOCX
- 2.1.2 - E2 CD2012130[v7] Water Quality Data Review and Reporting Procedure.DOCX
- 2.1.2 - E2 CD202192[v4] Conduct Catchment-to-Customer (C2C) Risk Assessment Procedure.DOCX
- 2.1.2 - E2 D201787415 WQMS Assurance Program.DOCX
- 2.1.2 - E2 D2022100491 WaterNSW C2C schedule.DOCX
- 2.1.2 - E2 D2022147475 System Schematic Log of Changes.XLSX
- 2.1.2 - E2 D2023145210 JOG 2023 Annual Cyanobacteria Risk Forecast 2023-24.DOCX
- 2.1.2 - E2 D202379297 Water Quality Teams Qualifications and Experience Register 2023.DOCX
- 2.1.2 - E2 D202399496 Water Quality Performance & Trend Report - July to Sept 2023 - Board Committee 18 Oct 2023.DOCX
- 2.1.2 - E2 D202447206 C2C Terms of Reference.DOCX
- 2.1.2 - E2 D202447442 Water Quality Performance and Trend Analysis Report Jan to Mar 24 Board Committee 12 Jun 24.DOCM
- 2.1.2 - E2 D202449360 C2C Illawarra - Final report from workshop held 31 01 2024.PDF
- 2.1.2 - E2 D202449368 C2C Illawarra - Risk register as of 27 06 2024.XLSX
- 2.1.2 - E2 D202451686 C2C Nepean – Final report from workshop held 29 05 2024.PDF

- 2.1.2 - E2 D202451692 C2C Nepean – Risk register as of 05 07 2024.XLSX
- 2.1.2 - E2 D202456203 Board Committee Meeting Annual C2C risk review 2024.DOCX
- 2.1.2 - E2 D202477933 Board Committee 13 March 2024 Water Quality Performance and Trend Report.DOCX
- 2.1.2 - E2 D202479231 Warragamba Pipeline Dual Outage Risk Assessment Actions May 2024.PDF
- 2.1.2 - E2 D202479236 Warragamba Pipeline Dual Outage Risk Assessment May 24.PDF
- 2.1.2 - E2 D202479879 C2C Illawarra briefing paper 2024.DOCX
- 2.1.2 - E2 D202479883 Nepean C2C briefing paper 2024.PDF
- 2.1.2 - E2 D202479885 C2C Illawarra 2024 – calendar invite.ICS
- 2.1.2 - E2 D202479922 Nepean C2C risk assessment – calendar invite.ICS
- 2.1.2 - E2 D202481089 C2C Risk Register (30 June 2024) evidence.XLSX
- 2.1.2 - E2 D20248708 RE NOCTSO Move Balance Point to Linden Reservoir 2nd Feb.MSG
- 2.1.2 - E2 IM20241881 Open Incident and Data Check meeting v2.MSG
- 2.1.2 - E2 IM20241881 Open Incident and Data Check meeting.MSG
- 2.1.2 - E2 IM20241882 weekly open incident data check meeting example.PNG
- 2.1.2 - E3 CD2021127[v1] Critical Control Points Fish River Water Supply System.DOCX
- 2.1.2 - E3 CD2021128[v1] Critical Control Points Raw Water supply to Sydney Water s WFPs.DOCX
- 2.1.2 - E3 CD20242 WaterNSW - SCADA Standards - Change Management Standard.PDF
- 2.1.2 - E3 D202368041 Annual Catchment Management Report 2023.DOCX
- 2.1.2 - E3 D202399979 NOCTSO Upper Canal Outage - Tues 17 Oct to Fri 8 Dec 2023.DOCX
- 2.1.2 - E3 D202442143 NOCTSO Warragamba Dual Pipeline Outage 31 May 19 Jun 24.DOCX
- 2.1.2 - E3 D202443501 Catchment Protection Work Program 24.DOCX
- 2.1.2 - E3 D202443970 NOCTSO Closing Nepean Tunnel for Rain Event 1-06-2024.DOCX
- 2.1.2 - E3 D202456910 Paper - Catchment Protection Work Program 24-25.DOCX
- 2.1.2 - E3 D202479231 Warragamba Pipeline Dual Outage Risk Assessment Actions May 2024.PDF
- 2.1.2 - E3 D202479236 Warragamba Pipeline Dual Outage Risk Assessment May 2024.PDF
- 2.1.2 - E3 D202479238 Joint Annual Maint Dual Pipeline Outage Contingency Plan May 2024.DOCX
- 2.1.2 - E3 D202479287 CCP Alarm Change Requests 23-24.XLSX
- 2.1.2 - E3 IM20241840 Screenshot CCP Alarm Ticket System.PNG
- 2.1.2 - E4 CD2001115[v5] O and M Manual Prospect Dam.DOCX
- 2.1.2 - E4 CD20027[v4] O and M Manual Middle Cascade Dam (No. 1).DOCX
- 2.1.2 - E4 CD20028[v4] O and M Manual Upper Cascade Dam (No. 3).DOCX
- 2.1.2 - E4 CD2004126[v5] O and M Manual Warragamba Dam.DOCX
- 2.1.2 - E4 CD2004183[v4] WaterNSW Water Quality Incident Response Protocol.DOCX
- 2.1.2 - E4 CD200683[v4] O and M Manual Lower Cascade Dam (No.2).DOCX
- 2.1.2 - E4 CD20072[v3] Raw Water Supply Protocols Sydney Water.PDF



- 2.1.2 - E4 CD2015331[v3] Asset Criticality Assessment Procedure .DOCX
- 2.1.2 - E4 CD201677[v4] Procurement Framework.DOCX
- 2.1.2 - E4 CD201936[v4] Materials Chemicals in contact with Drinking Water Supplies Procedure.DOC
- 2.1.2 - E4 CD2021119[v3] Update Operations and Maintenance Manuals Process.DOCX
- 2.1.2 - E4 CD2021151[v3] Operations and Maintenance Manual - Oberon Dam.DOCX
- 2.1.2 - E4 CD2022107 Operations and Maintenance Manual - Fish River Water Supply Scheme.PDF
- 2.1.2 - E4 CD2024186 Complete Dam Ops and O&M Famil Training Program.DOCX
- 2.1.2 - E4 CD2024293 Develop new Operations & Maintenance (O&M) Manual.DOCX
- 2.1.2 - E4 D2013101721 Water Supply Agreement with Sydney Water.PDF
- 2.1.2 - E4 D2021103424 WQ Dashboard Data FY 2023.XLSX
- 2.1.2 - E4 D202372127 Annual Water Quality Monitoring Report 22 23.DOCX
- 2.1.2 - E4 D202379843 Annual Water Quality Monitoring Report\_22 23 Appendices.DOCX
- 2.1.2 - E4 D2024110738 Excerpt - Warragamba Pipeline Contract AS4020.PDF
- 2.1.2 - E4 D2024110739 Warragamba Pipeline Appendix Q General Mechanical Civil Requirements.DOCX
- 2.1.2 - E4 D2024110743 Warragamba Pipeline Contract General Specification Rev B.DOCX
- 2.1.2 - E4 D202479314 Samples Received Alert Report 632024.MSG
- 2.1.2 - E4 D202481005 Warragamba Pipeline Criticality Data.XLSX
- 2.1.2 - E4 D202481321 16H103944 Calibration record Oberon VPS.PDF
- 2.1.2 - E4 D202481322 LS\_2023 – Turbidity.XLSX
- 2.1.2 - E4 D202481323 ALS\_Samplers Calibration Sheet 2023\_.XLSX
- 2.1.2 - E4 D202481326 Audit\_CCP&\_OCP.XLSX
- 2.1.2 - E4 D20248153 Prospect Dam Operational Performance Testing Report.PDF
- 2.1.2 - E4 D202482545 Screenshots - Duckmaloi WFP SCADA OCPs CCPs.PDF
- 2.1.2 - E4 IM20241878 Screenshot - SpendWise Procurement Risk Assessment.PNG
- 2.1.2 - E5 CD200713[v6] Complaints and compliments handling procedure.DOC
- 2.1.2 - E5 CD2011179[v7] Water Monitoring Program.DOCX
- 2.1.2 - E5 CD2012130[v7] Water Quality Data Review and Reporting Procedure.DOCX
- 2.1.2 - E5 CD201316[v1] Shoalhaven Council Bulk Water supply Agreement.PDF
- 2.1.2 - E5 CD2020119[v3] Feedback Compliments and Complaints Policy.DOCX
- 2.1.2 - E5 D2020080599 Water Supply Agreement Wingecarribee Shire Council .PDF
- 2.1.2 - E5 D202099743 Protocol LCC for comms investigation drinking water complaints.DOCX
- 2.1.2 - E5 D202122294 Goulburn Mulwaree Supply Agreement Sep 20.PDF
- 2.1.2 - E5 D2023157438 Lake Avon Water Quality Report November 2023.PDF
- 2.1.2 - E5 D2023157598 FRWS Operations Forum Minutes 15 Nov 23.DOCX
- 2.1.2 - E5 D2023157676 Lake Nepean Water Quality Report November 2023.PDF
- 2.1.2 - E5 D2023158473 Blue Mountains Water Quality Report November 2023(2).PDF

- 2.1.2 - E5 D2023159281 Lake Cataract Water Quality Report November 2023.PDF
- 2.1.2 - E5 D2023160590 Lake Cordeaux Water Quality Report November 2023.PDF
- 2.1.2 - E5 D2023160845 Lake Woronora Water Quality Report November 2023.PDF
- 2.1.2 - E5 D2023160931 Lake Burragorang Water Quality Report 28 November 2023.DOCX
- 2.1.2 - E5 D2023161138 Wingecarribee Water Quality Report November 2023.PDF
- 2.1.2 - E5 D2023161181 FR JOG Meeting Minutes 29 November 2023.DOCX
- 2.1.2 - E5 D2023162952 Fitzroy Falls Water Quality Report 30 November 2023.PDF
- 2.1.2 - E5 D2023163357 Lake Oberon and Duckmaloi Weir Water Quality Report Nov 23.DOCX
- 2.1.2 - E5 D2023164350 Lake Yarrunga Water Quality Report 27 November 2023(2).PDF
- 2.1.2 - E5 D2023165192 FRWS Ops Forum Minutes December 23.DOCX
- 2.1.2 - E5 D2023165396 Fish River Drinking Water Quality Report - November 2023.DOCX
- 2.1.2 - E5 D2023166206 Blue Mountains Water Quality Report December 2023(2).PDF
- 2.1.2 - E5 D2023166560 Lake Nepean Water Quality Report December 2023.PDF
- 2.1.2 - E5 D2023167367 Lake Avon Water Quality Report December 2023.PDF
- 2.1.2 - E5 D2023167530 Lake Woronora Water Quality Report December 2023.PDF
- 2.1.2 - E5 D2023167618 Lake Cataract Water Quality Report December 2023.PDF
- 2.1.2 - E5 D2023167944 Lake Yarrunga Water Quality Report 19 December 2023(2).PDF
- 2.1.2 - E5 D2023168656 Lake Cordeaux Water Quality Report December 2023.PDF
- 2.1.2 - E5 D2023168719 Wingecarribee Water Quality Report December 2023.PDF
- 2.1.2 - E5 D2023169047 Lake Burragorang Water Quality Report 28 December 2023.DOCX
- 2.1.2 - E5 D2023169076 Lake Oberon and Duckmaloi Weir Water Quality Report Dec 23.DOCX
- 2.1.2 - E5 D202350517 LCC Variation to Supply Agreement - 29 Nov 22.PDF
- 2.1.2 - E5 D202372127 Annual Water Quality Monitoring Report\_2022 to 2023.DOCX
- 2.1.2 - E5 D202373820 WaterNSW SCC Meeting minutes 31 July 2023.DOCX
- 2.1.2 - E5 D202379843 Annual Water Quality Monitoring Report\_2022 to 2023 Appendices.DOCX
- 2.1.2 - E5 D20241256 Fish River Drinking Water Quality Report - December 2023.DOCX
- 2.1.2 - E5 D202413147 Fish River Drinking Water Quality Report - January 2024.PDF
- 2.1.2 - E5 D202413241 WaterNSW WSC GMC Ops Interface Meeting 1 Mar 24.DOCX
- 2.1.2 - E5 D202419170 FRWS Ops Forum Minutes March 24.DOCX
- 2.1.2 - E5 D2024232 Fitzroy Falls Water Quality Report 29 December 2023.PDF
- 2.1.2 - E5 D202424696 Prospect Water Quality Report April 2024(2).PDF
- 2.1.2 - E5 D202424696 Prospect Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202426754 Wingecarribee Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202426774 Lake Avon Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202427324 Lake Yarrunga Water Quality Report April 2024(2).PDF
- 2.1.2 - E5 D202427324 Lake Yarrunga Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202428924 Lake Nepean Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202429298 Fitzroy Falls Water Quality Report April 2024.PDF

- 2.1.2 - E5 D202429588 Lake Cordeaux Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202429714 Lake Burragorang Water Quality Report 30th April 2024.PDF
- 2.1.2 - E5 D202429726 Lake Oberon and Duckmaloi Weir Water Quality Report Apr 24.PDF
- 2.1.2 - E5 D202430019 Lake Cataract Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202430549 Lake Woronora Water Quality Report April 2024.PDF
- 2.1.2 - E5 D202431313 Fish River Drinking Water Quality Report - April 2024.PDF
- 2.1.2 - E5 D202433555 FR JOG Meeting Minutes 23 May 2024.DOCX
- 2.1.2 - E5 D202433558 Blue Mountains Water Quality Report - April 2024(2).PDF
- 2.1.2 - E5 D202433558 Blue Mountains Water Quality Report - April 2024.PDF
- 2.1.2 - E5 D202433631 Blue Mountains Water Quality Report - May 2024(2).PDF
- 2.1.2 - E5 D202433631 Blue Mountains Water Quality Report - May 2024.PDF
- 2.1.2 - E5 D202435170 Lake Nepean Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202435644 Lake Prospect Water Quality Report May 2024(2).PDF
- 2.1.2 - E5 D202435644 Lake Prospect Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202440451 Wingecarribee Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202440735 Lake Yarrunga Water Quality Report May 2024(2).PDF
- 2.1.2 - E5 D202440878 Lake Oberon and Duckmaloi Weir Water Quality Report May 24.PDF
- 2.1.2 - E5 D202441113 Lake Cordeaux Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202443057 Lake Burragorang Water Quality Report 28th May 2024.PDF
- 2.1.2 - E5 D202443233 Lake Cataract Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202443423 Fitzroy Falls Water Quality Report May 2024.DOCX
- 2.1.2 - E5 D202444478 Lake Avon Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202444652 Fish River Drinking Water Quality Report - May 2024.PDF
- 2.1.2 - E5 D202444717 Lake Woronora Water Quality Report May 2024.PDF
- 2.1.2 - E5 D202446000 Blue Mountains Water Quality Report - June 2024(2).PDF
- 2.1.2 - E5 D202447145 Lake Avon Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202447705 FRWS Operations Forum Minutes June 24.DOCX
- 2.1.2 - E5 D202447818 Prospect Water Quality Report June 2024(2).PDF
- 2.1.2 - E5 D202448291 Wingecarribee Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202448996 Lake Cordeaux Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202449370 Fitzroy Falls Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202449814 Lake Yarrunga Water Quality Report June 2024(2).PDF
- 2.1.2 - E5 D202450009 Lake Nepean Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202450335 Lake Burragorang Water Quality Report 1st July 2024.PDF
- 2.1.2 - E5 D202450970 Lake Cataract Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202451242 Fish River Drinking Water Quality Report - June 2024.PDF
- 2.1.2 - E5 D202451249 Lake Woronora Water Quality Report June 2024.PDF
- 2.1.2 - E5 D202451756 Lake Oberon and Duckmaloi Weir Water Quality Report Jun 24.PDF

- 2.1.2 - E5 D20246123 Lake Cataract Water Quality Report January 2024.PDF
- 2.1.2 - E5 D202477880 WaterNSW-GMC-WSC OpsInterface Meeting 28 Jul 23.DOCX
- 2.1.2 - E5 D202478271 Screenshot RACS FRWSS Chlorine Turbidity 18 Dec 23.PDF
- 2.1.2 - E5 D202478757 WQDB - Incident Exception Report 2023-24.XLSX
- 2.1.2 - E5 D202479031 JOG Minutes - 13 November 2023.DOCX
- 2.1.2 - E5 D202479033 JOG Minutes - 8 March 2024.DOCX
- 2.1.2 - E5 D202479034 JOG Minutes - 14 May 2024.DOCX
- 2.1.2 - E5 D202480883 Complaints training record 13 Sept 24.XLSX
- 2.1.2 - E5 D202481072 Fish River Customer Complaints 2023-24.MSG
- 2.1.2 - E5 D20248333 WaterNSW SCC 4 monthly meeting Minutes - 8 February 2024.DOCX
- 2.1.2 - E5 D20249830 FR JOG Meeting Minutes 15 February 2024.DOCX
- 2.1.2 - E5 DOC1232669 Oberon Council customer contract.PDF
- 2.1.2 - E5 IM20241876 Screenshot Complaints Training Module.PNG
- 2.1.2 - E6 CD2019136 RACS Reporting an Incident How to Guide.DOCX
- 2.1.2 - E6 CD202183[v2] Fish River Incident Management Plan.DOCX
- 2.1.2 - E6 D201639701 Contingency Plan Warragamba Rain V6.DOCX
- 2.1.2 - E6 D2024111014 Business continuity management exercise Apr Jun 2024.MSG
- 2.1.2 - E6 D202432223 Nepean Water Quality Incident Debrief 8 May 2024.DOCX
- 2.1.2 - E6 D202478755 RACS Water Quality Incident Summary Report 23-24.XLSX
- 2.1.2 - E6 D202481151 Situation Report 7 FINAL June 2024 Greater Syd Rainfall Event.MSG
- 2.1.2 - E6 D202482473 April 2024 Rainfall Event Incident Debrief Report.DOCX
- 2.1.2 - E7 D201787415 WQMS Assurance Program.DOCX
- 2.1.2 - E7 D201877988 Water Quality Incident Response eLearning module.PPTX
- 2.1.2 - E7 D201948488 Materials and Chemicals in contact with Drinking Water - eLearning module (UNDER REVIEW).PPTX
- 2.1.2 - E7 D2022163706 Maintenance Officer - Water Treatment Plant Position Description.PDF
- 2.1.2 - E7 D202258566 Maintenance Team Leader Wallerawang PD.PDF
- 2.1.2 - E7 D202311498 WQMS - Mandatory Training Report Template.XLSX
- 2.1.2 - E7 D202477867 Water Quality Awareness eLearning Training Module - June 2024(2).PPTX
- 2.1.2 - E7 D202477867 Water Quality Awareness eLearning Training Module - June 2024.PPTX
- 2.1.2 - E7 D202478888 Maintenance Supervisor PD.DOCX
- 2.1.2 - E7 D202479440 WQMS - myLearning Email Reminder Example.MSG
- 2.1.2 - E7 D202479441 User Guide Competency Dashboard.PDF
- 2.1.2 - E7 IM20241879 Screenshot - CEO Blog - 8 April 2024.png.PNG
- 2.1.2 - E8 D201878477 CSEP Long Form Template\_2019.DOCX
- 2.1.2 - E8 D201929701 CSEP Short Form Template\_2019.DOCX
- 2.1.2 - E8 D2023079992 Communication and engagement brief – WaterNSW.DOCX
- 2.1.2 - E8 D202379977 Fish River Newsletter August 2023 WEB.PDF

- 2.1.2 - E8 D2024110643 Kangaroo Valley Roads Drainage Project CSEP example.DOCX
- 2.1.2 - E8 IM20241839 Screenshot FRWSS Webpage 23 March 2024.PNG
- 2.1.2 - E9 CD201657 Asset change management procedure [v3].DOCX
- 2.1.2 - E9 D2021125168 Validation report chlorine control Duckmaloi WFP.PDF
- 2.1.2 - E9 D2023157530 Upper Canal Control Gates Power Options Report (2).DOCX
- 2.1.2 - E9 D20232226 Asset Investigation Manual.DOCX
- 2.1.2 - E9 D202379613 - Options Development Report Broughton Pass Renewals.DOCX
- 2.1.2 - E9 D202461976 Concept Design Report Upper Canal HPR1 heritage canal instrument upgrade.PDF
- 2.1.2 - E9 D202464118 Concept Design Report Additional flow monitoring point near Mount Gilead.PDF
- 2.1.2 - E9 D202480325 High geosmin at DWA Winter-Spring 2023 DNA analysis summary.DOCX
- 2.1.2 - E9 D202480908 UAT SCARMS screen shots fDOM corrected colour.PDF
- 2.1.2 - E9 D202481027 Additional Mini Hydro Configurations.PDF
- 2.12 - E5 D202478280 Screenshots RACS 2947 Prospect Geosmin 16 Apr 24.PDF
- 2023 - 1 - 2.1.2 D202452240 WQMS - Gap Analysis and Plan June 2024.DOCX
- 2023 - 10 - 2.1.3 Water Quality Improvement Plan.XLSX
- 2023 - 3 - 2.1.1 CD20242 WaterNSW SCADA Change Management Standard.PDF
- 2023 - 4 - 2.1.1 CD2024293 develop new Operation & Maintenance Manual.DOCX
- 2023 - 4 - 2.1.1 D202480917 Valley Manual Schedule for Audit.MSG
- 2023 - 4 - 2.1.1 Operations and Maintenance Manual - Upper Canal System.DOCX
- 2023 - 6 - 2.1.3 CD202192[v4] Conduct Catchment-to-Customer (C2C) Risk Assessment.DOCX
- 2023 - 6 - 2.1.3 D2023161181 FR JOG Meeting Minutes 29 November 2023.DOCX
- 2023 - 6 - 2.1.3 D202433555 FR JOG Meeting Minutes 23 May 2024.DOCX
- 2023 - 6 - 2.1.3 D20249830 FR JOG Meeting Minutes 15 February 2024.DOCX
- 2023 - 7 - 2.1.3 D2024116101 June 2024 Incident debrief meeting invitation.ICS
- 2023 - 7 - 2.1.3 D2024116333 AIIMS training options and budget.PPTX
- 2023 - 7 - 2.1.3 D2024116339 email re AIIMS training and nomination of staff.MSG
- 2023 - 7 - 2.1.3 D2024117512 IM Incident Debrief Report June 2024 Rainfall Event.DOCX
- 2023 - 8 - 2.1.3 D202366841 Incident and CCP tracker - Water Quality Services.XLSX
- 2023 - 8 - 2.1.3 IM20241880 Screenshot - Open Incident and Data Check Meetings.PNG
- 2023 - 9 - 2.1.3 D202484240 Fish River Meeting Notes - 16 May 2024.PDF
- C2C Issues Register (snapshot as at 30 June 2024).XLSX
- CD2021 127 Critical Control Points - CCP - Fish River Water Supply System\_UNDER REVIEW.DOCX
- CD2021 83[v3] Fish River Incident Management Plan.DOCX
- CD202192 Conduct Catchment-to-Customer (C2C) Risk Assessment\_old version.DOCX
- CD202192 v4 Conduct Catchment-to-Customer (C2C) Risk Assessment.DOCX
- CD202272 Incident Management Procedure.DOCX

- CD2024 351 Operations and Maintenance Manual - Upper Canal.DOCX
- CD2024351 Upper Canal OandM manual approval notes.png
- D2017 87415 WQMS Assurance Program.pdf
- D2022 100026 Fish River Catchment Land Use.DOCX
- D2023 117624[v2] EIA Minor Works Upper Canal Weed Spraying Internal Walls.pdf
- D2023 51364 FRWS - Oberon Dam - Oberon Pump Station - Pump Refurbishment - No. 2 Pump.DOCX
- D2023 99005 Operational Impact Application Form - Upper Canal Spring Outage 2023.XLSX
- D2023 99979 NOCTSO Upper Canal Outage - Tues 17 Oct to Fri 8 Dec 2023.DOCX
- D2023145087 cyanobacterial risk forecast 23-24.DOCX
- D20233403 Annual System Health Check Report Water Quality Management - June 23.DOCX
- D202350139 Shoalhaven Supply Schematic.PDF
- D2024 117624 EIA - Upper Canal weed spaying internal walls.PDF
- D2024 120128 May 24 JOG Item 3.4 Update of actions from incidents and exercises.docx
- D2024 123421 Fish River Annual Review ADWG Long Term Evaluation Assessment Oct 2024.docx
- D2024 125891 Assurance procedure review email review and Reporting Procedure.MSG
- D2024 125892 Assurance activity and suggestion RE SCADA report for CCP points.MSG
- D2024 125932 Prospect Acceptance sent Sep Oct 2023.MSG
- D2024 125933 Prospect Water Quality Report 30 October 2023.MSG
- D2024 125938 WPDS Planning Meeting Minutes and Action Items 01 Nov 2023.docx
- D2024 125939 WPDS Planning Meeting Minutes and Action Items 04 Oct 2023.docx
- D2024 125940 WPDS meeting minutes Sep 23 .docx
- D2024 125941 WQS Routine Report Tracker Sept Oct 23.xlsx
- D2024 125943 Re Weekly algal levels at Upper Cascades.MSG
- D2024 125985 Fish River Water Supply Annual Review of the Drinking Water Quality Management System 2022 - 2023(2).MSG
- D2024 126008 CCP Alarm Reinstatement Process.MSG
- D2024 126693 Weekly Catchment Crypto Assessment 2023\_quarterly report for audit.XLSX
- D2024 128794 Tripartite 2022-23 DWQ Event Debrief Report-v0.7.PDF
- D2024 128796 Q3 JOG 14 August 2023 - Summary of Progress Against Tripartite Actions.PDF
- D2024 128797 JOG 2024 Q3 Item 3.6 Update of actions from incidents and exercises.PDF
- D2024 129183 Board Committee on Sustainability and Service Delivery - 13 March 2024 Water Quality Performance and Trend Analysis Report.DOCM
- D2024 129184 Board Committee on Sustainability and Service Delivery - 12 June 2024 ATT Water Quality Performance and Trend Analysis Report.DOCM
- D2024 129184 Board Committee on Sustainability and Service Delivery 12 June 2024 Water Quality Performance and Trend Analysis Report.DOCM
- D2024 129185 Board Committee on Sustainability and Service Delivery - 12 June 2024 Water Quality Performance and Trend Analysis Report.DOCM

- D2024 129186 Board Committee on Sustainability and Service Delivery - 18 October 2023 Water Quality Performance and Trend.DOCX
- D2024 129187 Board Committee on Sustainability and Service Delivery - 13 March 2024 ATT - Water Quality Performance and Trend Report.DOCX
- D2024 129272 Samples Received Alert Report was executed at 632024.msg
- D2024 129348 Kangaroo Valley Pipeline Upgrade - Project Update.MSG
- D2024 129356 Media release - Kangaroo Valley Pipe Upgrades Underway.DOCX
- D2024 129455 Upper Canal Outage October 2023 - WOs completed.xlsx
- D2024 129456 WO00232461-01 - Checklist.JPG
- D2024 129457 WO00232461-01 - Completion comments.JPG
- D2024 129596 Form 5 Fluoride dosing incident notification submitted for Water NSW - FL-00069 CRM0134165.msg
- D2024 129597 Form 5 Fluoride dosing incident notification submitted for Water NSW - FL-00085 CRM0134210.msg
- D2024 129647 Lake Oberon and Duckmaloi Weir Water Quality Report - May 2024.msg
- D2024 129789 Duckmaloi Fluoride System Commissioning Documentation.MSG
- D2024 129990 Board Committee on Audit and Risk - 14 February 2024 Quarterly Compliance and Business Continuity Management.pdf
- D2024 129991 Board Committee on Audit and Risk - 15 May 2024 Quarterly Compliance and Business Continuity Management.pdf
- D2024 130004 Report - Overdue Controlled Documents as at 31 August 2024.xlsx
- D2024 130198 EXTERNAL JOG item 3.4 Outstanding actions from incidents and exercises.msg
- D2024 22606 Duckmaloi WTP PIRMP Exercise Minutes 2 April 2024.DOCX
- D2024 2504 Status of fish Monitor at Liverpool.MSG
- D2024 48199 CCPsOCPs and CCP measures - Greater Sydney and Fish River.msg
- D2024 49360 C2C Illawarra - Final report from workshop held 31 01 2024.pdf
- D2024 52240 WQMS - Gap Analysis and Plan - June 2024.docx
- D2024 52582 FINAL Fish River Strategic Plan.MSG
- D2024 99979 Exercise Happy Jacks - Tripartite Exercise 2024.docx
- D2024125866 CD2021\_92v4 Screenshot file notes.JPG
- D2024125871 FW Nepean C2C risk assessment - final report and register.MSG
- D2024125874 JOG 2023 Q4 Item 3.1 Source Water Quality Update 13 November 2023.PDF
- D2024125877 JOG 2023 Q4 - Agenda.DOCX
- D2024125984 Form 5 Fluoride dosing incident notification submitted for Water NSW - FL-00281 CRM0134490.pdf
- D2024126104 Health review of meeting minutes Water Quality Project Updates Meeting - 16012024.MSG
- D20242335 HBT assessment Lake Oberon & Duckmaloi WTP(2).DOCX
- D202434779 Catchment Cryptosporidium Assessment 17 May 2024.MSG
- D20244224 Draft April 2024 Rainfall Event - Incident Debrief Report.DOCX
- D202450060 Fish River C2C Issues Register.XLSX

- D202479885 C2C Illawarra 2024 - calendar invite.ICS
- D202479922 Nepean C2C risk assessment - calendar invite\_briefing docs.ICS
- D202480860 Oberon Risk Register snapshot as at 30 Jun 2024.XLSX
- D202480861 Lithgow Risk Register snapshot as at 30 Jun 2024.XLSX
- D2025 003855 Board Committee on Audit and Risk - 15 May 2024 Half Yearly Operating Licence Compliance Status Report.DOCM
- D2025 003856 Board Committee on Sustainability and Service Delivery 14 August 2024 Item 6.2 ATT Water Quality Performance and Trend Analysis Report
- D24024 129353 Kangaroo Valley Pipeline Renewal Project - Complete.MSG
- IM2024 1895 Screenshot Competency Dashboard.PNG
- IM2024 1896 Screenshot - Procurement Framework - Protecting Water Quality.PNG
- IM2024 1897 Screenshot - RACS - Duckmaloi Fluoride Incident - October 2023.PNG
- Joint Comms Protocols.pdf
- Re Weekly algal levels at Upper Cascades.MSG
- Water quality project updates with NSW Health - TWRRP and Fish River Strategy.ICS
- D2024 129184 Board Committee SSD 12 June 2024 Water Quality Performance and Trend Analysis Report.docm
- D2024 52240 WQMS - Gap Analysis and Plan June 2024.docx
- D2024 78315 Board Committee SSD June 2024 - Item 7.3 - Annual System Health ~ Water Quality Management.docm
- D2025 003856 Board Committee SSD 2024 Item 6.2 ATT Water Quality Performance and Trend Analysis Report.docx
- D2025 11247 Extract of minutes from the S&SD Board Committee meeting on 12 June 2024\_.msg
- D2025 14382 re D2019 53719 Water Quality Improvement Plan - 21 July 2023.xlsx
- D2025 14383 re D2019 53719 Water Quality Improvement Plan 16 February 2024.xlsx
- D2025 14384 re D2019 53719 Water Quality Improvement Plan 14 June 2024.xlsx
- D2025 15393 Water Quality Improvement Plan - Revision History.pdf
- D2025 15530 NSW Health response re fish biomonitors.msg
- D2025 15750 Fish monitor at Upper Canal\_SW response.msg
- D2025 15784 2023\_24 Draft Operational Audit findings WQMS reporting Feb 25 presentation.pdf

## Clause 2.6 – Water conservation

- 20200226 2-3-2 Water Conservation Works Program FINAL.docx
- 2.6.1 D201912714 WaterNSW Conservation Strategy .DOCX
- 2.6.1 D202037484 31 March 2020 - Water Conservation Work Program to IPART .MSG
- 2.6.2 D202470373 – Annual Water Conservation Program Report 2023-24 .PDF

## Clause 2.7 – Research on catchments



- D2020 118316 Board Committee on Water Quality, Health and Catchment Protection 2021-2025 Science Program - Item 3.1.docx
- D2023148168 Board Committee 18 October 2023 Annual Science Program Review.pptx
- D202357018 Operational use of chlorophyll a sensors in Lake Burragorang.DOCX
- D202368041 Annual Catchment Management Report.DOCX
- D2024 43418 Aluminum\_Catchment\_Audit\_Response\_Final.docx
- D2024 61163 Autosampler Data Management - Project Scope Final.docx
- D2024 64299 Cairns Mining impacts peatland hydrology reducing discharge, water storage volumes.PDF
- D2024 66572 Project Scope 2021-2025 Science Program Review.docx
- D2024 68475 Science Program Monthly report - June 2024.PDF
- D202435130 Review of in situ fluorescence (fDOM)sensors to characterise dissolved organic carbon, deployed within Lake Nepean.DOCX
- D202440808 Board Paper - Deep Dive Future Scenarios for Sydney s Drinking Water Catchment.DOCM
- D202440808 business case approval to spend for research on catchment example.docx
- D202440874 Deep Dive Presentation - Future Scenarios for Sydney s Drinking Water Catchment.PPTX
- D202466430 Stream flow impacts from mining - GAM Summary Fact Sheet - DARE schedule 1 outcome summary.PDF
- D202480325 High geosmin at DWA Winter-Spring 2023 - DNA analysis summary.DOCX
- D202480350 copy of Board Committee - 14 June 2023 - Emerging Trends in Water Quality Science.PPTX
- D202480908 UAT SCARMS screen shots fDOM corrected colour.PDF
- D20248301 Predicting raw water quality in catchments final report UTS ML AI project.PDF

## Clause 3.2 – Water supply

- 3.2.1 CD200713[V7] Complaints and Compliments Handling Process.DOCX
- 3.2.1 CD20072[v3] Raw Water Supply Protocols Sydney Water.PDF
- 3.2.1 CD2011179[V7] Water Monitoring Program.DOCX
- 3.2.1 D2013101721 Water Supply Agreement with Sydney Water.PDF
- 3.2.1 D2016132993 WaterNSWLithgow CC Operating Protocols for the FRWS.DOCX
- 3.2.1 D2023156254 9 Nov 23 minutes SWC Health.DOCX
- 3.2.1 D2023159660 Nov 23 minutes SW Health.DOCX
- 3.2.1 D2023161181 Fish River JOG Meeting Minutes Nov 23.DOCX
- 3.2.1 D2023168081 Dec 23 minutes SW Health.DOCX
- 3.2.1 D202350517 Lithgow City Council Water Supply Agreement.PDF
- 3.2.1 D202378596 Fish River JOG Meeting Minutes Sep 23.DOCX
- 3.2.1 D202413241 WaterNSW Operational Interface Meeting Minutes Mar 24.DOCX
- 3.2.1 D202419170 FRWS Ops Forum Minutes March 24.DOCX



- 3.2.1 D202422263 NOCTSO closing Nepean tunnel for rain event 2 4 24.DOCX
- 3.2.1 D202422869 NOCTSO Nepean and Avon Aeration off 424.DOCX
- 3.2.1 D202422886 NOCTSO Cataract outlet change 424.DOCX
- 3.2.1 D202423012 NOCTSO Woronora outlet change 424.DOCX
- 3.2.1 D202423055 4 Apr 24 minutes SWC Health.DOCX
- 3.2.1 D202423289 NOCTSO Switch of FRWS and Upper Cascades destrat fan 5424.DOCX
- 3.2.1 D202423849 NOCTSO Nepean Screen Change 7 4 24.DOCX
- 3.2.1 D202424081 NOCTSO Nepean Tunnel RTS 9 4 24.DOCX
- 3.2.1 D202424452 NOCTSO Close Warragamba Outlet 3\_9 4 24.DOCX
- 3.2.1 D202425115 NOCTSO Open Warragamba Outlet \_11 4 24.DOCX
- 3.2.1 D202427260 19 April meeting notes with SWC.DOCX
- 3.2.1 D202430767 3 May meeting notes with SWC Health.DOCX
- 3.2.1 D202431016 6 May 24 minutes SWC Health.DOCX
- 3.2.1 D202432357 12 May 24 minutes SWC Health.DOCX
- 3.2.1 D202433555 Fish River JOG meeting minutes May 24.DOCX
- 3.2.1 D202435374 Pro Plot tab –Prospect Reservoir Management Supply Prospect WFP.XLSB
- 3.2.1 D202440572 23 May 24 minutes SWC Health.DOCX
- 3.2.1 D202443883 30 May 24 minutes SWC Health.DOCX
- 3.2.1 D202446639 NOCTSO for Reconfigure Pipelines to Orchard Hills Contingency Jun 24.DOCX
- 3.2.1 D202446854 NOCTSO resume supply to Prospect WFP and open V40 18624.DOCX
- 3.2.1 D202447046 NOCTSO Change of supply for Orchard Hills Filtration plant 14 Jun 2024.DOCX
- 3.2.1 D202447705 FRWS Ops Forum Minutes June 24.DOCX
- 3.2.1 D202449021 NOCTSO Nepean Aeration returning to service June 24.DOCX
- 3.2.1 D202453249 Water System Op s Storage Balance Performance 120724.XLSM
- 3.2.1 D202453493 Sydney Water Compliance Report June 2024.XLSX
- 3.2.1 D202462242 Water System Ops Storage Balance Performance 07082024.XLSM
- 3.2.1 D202473820 WaterNSW SCC Meeting minutes 31 Jul 23.PDF
- 3.2.1 D202477865 Meeting Minutes with WNSW SWC NSW Health June event.MSG
- 3.2.1 D202477880 WaterNSW Operational Interface Meeting Minutes Jul 23.DOCX
- 3.2.1 D202478957 - Registry of non conformance for Water Quality.DOCX
- 3.2.1 D202479746 Examples of Water Quality incidents in NOGGIN 23024.DOCX
- 3.2.1 D202479748 Evidence of Water Quality Report for Warragamba during incident.MSG
- 3.2.1 D202479749 Evidence of Lake Nepean Water Quality update during incident.MSG
- 3.2.1 D202479750 Evidence of Water Quality Report for lake Nepean during incident.MSG
- 3.2.1 D202480267 GoNo Go Dual Pipeline Risk assessment spreadsheet.MSG
- 3.2.1 D202480268 GoNo Go Dual Pipeline Risk assessment meeting notes.MSG
- 3.2.1 D20248333 WaterNSW SCC Meeting Minutes 8 Feb 24.DOCX
- 3.2.1 D20249830 Fish River JOG meeting minutes Feb 24.DOCX



- 3.2.1 DOC1232669 Water Supply Agreement with Oberon.PDF
- D2023 51364 FRWS - Oberon Dam - Oberon Pump Station - Pump Refurbishment - No. 2 Pump.DOCX
- D2024 129647 Lake Oberon and Duckmaloi Weir Water Quality Report - May 2024.MSG
- D2024 130159 RE Interest Charge Waiver.msg
- D2024128802 EXTERNAL RE 5 Year Operational Plan for Water Supply Review.MSG
- D2024128803 EXTERNAL Fortnightly JAM Update Meeting Agenda - 7 March 2024.MSG
- D2025 003860 Correspondence with Oberon Council re pump refurbishment.pdf
- D2025 2408 [External] WNSW major outage program 2024.MSG

## Clause 5.1 – Asset management system

- 2023 13 - 5.1.2 CD2024185 Asset Management Governance Comm ToR.DOCX
- 2023 13 - 5.1.2 D2023159083 AMS Improvement Action Register.XLSX
- 2023 13 - 5.1.2 D202412963 Asset Management Improvement Plan.DOCX
- 2023 13 - 5.1.2 D202478717 AMGC Meeting 1 Minutes 28 Mar 24.DOCX
- 2023 13 - 5.1.2 D202478719 AMGC Meeting 1 Agenda Mar 24.DOCX
- 5.1 2 D2019112790 AMS Process Health Check Internal Audit Schedule.XLSX
- 5.1 2 D202480698 Draft 5 Yearly Plan for JAM outage program.XLSM
- 5.1.2 CD2001115[v5] Operations and Maintenance Manual – Prospect Dam (2).DOCX
- 5.1.2 CD2011163 Assurance Activity Procedure.DOC
- 5.1.2 CD2015331[v3] Asset Criticality Assessment Procedure.DOCX
- 5.1.2 CD2015488[v5] Asset Management Policy.DOCX
- 5.1.2 CD2019225 WNSW-VLV-AS-001 End of Line Control Valves.DOCX
- 5.1.2 CD2019226 WNSW-PPE-AS-001 Major Water Supply Pipelines Asset Class Strategy.DOCX
- 5.1.2 CD2019228[v2] WNSW-TRF-AS-001 HV Power Transformers Asset Class Strategy.DOCX
- 5.1.2 CD2020110 WNSW-VLV-AS-002 Valves and Pressure Regulators Asset Class Strategy.DOCX
- 5.1.2 CD202049 WNSW-SCA-AS-001 HV Distribution Switchgear and Associated Cables.DOCX
- 5.1.2 CD202050 WNSW-WAL-AS-001 Retaining Wall Asset Class Strategy.DOCX
- 5.1.2 CD202051 WNSW-ROA-AS-001 Roads Asset Class Strategy.DOCX
- 5.1.2 CD202053 WNSW-TUN-AS-001 Tunnels Asset Class Strategy.DOCX
- 5.1.2 CD202058 WNSW-BDG-AS-001 Bridges Asset Class Strategy.DOCX
- 5.1.2 CD20211 WNSW-GAT-AS-001 Gates, Stoplogs, Baulks and Bulkheads Asset Class Strategy.DOCX
- 5.1.2 CD202144 WNSW-VSD-AS-001 HV Variable Speed Drives & Motors Asset Class Strategy.DOCX
- 5.1.2 CD20218 WNSW-DIS-AS-001 Low Voltage Power Distribution Asset Class Strategy C.DOCX
- 5.1.2 CD202199 WNSW-WER-AS-002 Weirs Asset Class Strategy.DOCX



- 5.1.2 CD202270 WNSW-CRN-AS-001 WNSW Cranes and Lifting Assets Asset Class Strategy.DOCX
- 5.1.2 CD202329 WNSW-PMP-AS-001 Pumps Asset Class Strategy.DOCX
- 5.1.2 CD2024185 Asset Management Governance Committee – ToR.DOCX
- 5.1.2 D201758363 Asset Management System Audit Action Register.XLSX
- 5.1.2 D2023100024 2023 WaterNSW AMS Surv Audit Report.PDF
- 5.1.2 D2023144892 Management Committee Assets 9 Nov Annual System Health Check AMS 2023 Draft.DOCX
- 5.1.2 D2023147483 Annual Asset Performance and Health Report FY22-23.DOCX
- 5.1.2 D2023159083 AMS Improvement Action Register.XLSX
- 5.1.2 D202359245 Warragamba Pipeline Operations Manual.PDF
- 5.1.2 D202412963 Asset Management Improvement Plan.DOCX
- 5.1.2 D202417967 Upper Cascade Dam Intermediate Surveillance Report Nov 2023.PDF
- 5.1.2 D202419925 Oberon Dam Intermediate Report (2).PDF
- 5.1.2 D202434980 Asset Disposal Process AMS Internal Audit Report.DOC
- 5.1.2 D202451415 Asset Management Training Report L&D Extract.XLS
- 5.1.2 D2024617 Middle Cascade Dam Intermediate Surveillance Report Nov 2023.PDF
- 5.1.2 D202462373 Lower Cascade Dam Intermediate Surveillance Report Nov 2023.PDF
- 5.1.2 D202464166 AMCV Preliminary Utility Report – WaterNSW Issue 1.PDF
- 5.1.2 D202480693 WNSW Major Outage program 2023.MPP
- 5.1.2 D202481005 Warragamba Pipeline Criticality Data.XLSX
- 5.1.2 D202481163 WaterNSW AMS Evidence IPART audit 2024- EAMS Screenshots.PPTX
- 5.1.2 D20248153 Prospect Dam Operational Performance Testing Report.PDF
- CD2015468v10 Strategic Asset Management Plan.docx
- CD2024281 Managing Assets Information and Deliverables in Project Handover Process.docx
- Copy of Generate listing of what files are in this folder.xlsm
- D201815546 WaterNSW Internal and External Stakeholders FY 2024\_25.xlsx
- D2022 112947 Oberon Dam Renewals - All In One Business Case - Signed.PDF
- D2024 127892 SOCI Assurance Report - Summary of assurance review outcomes.docx
- D2024 129361 WO00261536 Corrective Maintenance Work Order With Photos.PDF
- D2024 129362 WO00234604 - Condition Assessment Report.PDF
- D2024 130245 SGS Oberon Dam Report QS23-87-08 19Oct23.pdf
- D202412544 Due 14 MAR More time to have your say on the River of Environmental Factors for the Picton Road Upgrade.pdf
- D2024125820 Asset Management System eLearning Module v7.pdf
- D2024125821 Proportion of asset criticality rating.pdf
- D2024125823 Fish River WatercSupply Scheme Long Term Strategy v14.PDF
- D2024125825 Finance - EAMS Support Evidence.pdf



- D2024125838 AMS KPI Report Main.pdf
- D2024125843 EAMS Audit additional evidence - 05Nov.pptx
- D2024125847 Nepean Shutdown Evidence.pdf
- D2024125848 ServiceNow example - IPART Audit.pdf
- D2024443970 NOCTSO Closing Nepean Tunnel for Rain Event 1-06-2024(3).DOCX
- D202484037 AMP - Fish River.pdf
- D202484044 AMP - Lachlan Valley.pdf
- D202484046 AMP - Murray - Lower Darling Valley.pdf

## Clause 5.2 – Environmental management system (Recommendation 2023-14)

- 2023 - 14 5.2.2 CD20166 Environmental Incident Management Protocol screenshot.docx
- CD2016 6[v5] Environmental Incident Management Protocol.docx

## Clause 6.4 – Advance notification of changes to flow release patterns

- D2024125603 1. WaterNSW Questions on Notice - Budget Estimates Hearing 9 Sep 2024.pdf
- D2024125604 3. Email approvals QONs.pdf
- D2024125605 2. T Schultz discussion (microsoft teams).pdf
- D2024125606 4. Teams Transcript 9 September 2024.pdf
- D2024125607 5. Wingecarribee dam spill and EWN information.pdf
- D2024125608 035. Wingecarribee Dam Release Data.xlsx
- D2024125609 Copy of Wingecarribee Data 1st January to 05th November 2024.xlsx
- D2024125610 EWN Instructions - Greater Sydney - Wingecarribee Reservoir.docx
- D2024125611 March 2022 EWN - Wingecarribee.docx
- D2024125612 Screenshots\_Wingecarribee Notifications for Operating Licence Audit.docx
- D2024125613 Winge EWN Instructions as at July 22 event.docx
- D2024125614 Wingecarribee dam spill and EWN information - July 2022.docx
- CD2015 476 [V8] Working In or Near Water Procedure.DOCX
- D2025 13655 Advance notifications 23\_24 screenshot.docx
- D2025 19712 Wingecarribee rating charts.docx

## Clause 6.5 – Customer advisory groups

- 6.5.1 D202216092 CAG Recruitment - Customer E-Newsletter - February 2022.DOCX
- 6.5.1 D202216095 CAG Recruitment - Letters to Current Members - 2022-25.PDF

- 6.5.1 D202233886 Example Nomination - 2022-25 - Barwon-Darling CAG - Mungindi Cotton Growers.PDF
- 6.5.1 D202481080 CAG membership nominations - Summary May 2022.PPTX
- 6.5.2 D202432023 Namoi-Peel Customer Advisory Group presentations 21 March 2024.PDF
- 6.5.2 D202432024 Namoi-Peel Customer Advisory Group Pricing Presentation 21 March 2024.PDF
- 6.5.2 D202432025 Namoi-Peel Customer Advisory Group Business Papers 21 March 2024.PDF
- 6.5.2 D202432026 Namoi-Peel Customer Advisory Group - Minutes - 21 March 2024.PDF
- 6.5.2 D202432029 Murrumbidgee Customer Advisory Group Minutes 27 March 2024.PDF
- 6.5.2 D202432032 Murray-Lower Darling Customer Advisory Group - Minutes 25 March 2024.PDF
- 6.5.2 D202432042 Lachlan Customer Advisory Group - Minutes 12 March 2024.PDF
- 6.5.2 D202432046 Gwydir Customer Advisory Group - Minutes 19 March 2024.PDF
- 6.5.2 D202432050 Greater Sydney Customer Advisory Group - Minutes 6 March 2024.PDF
- 6.5.2 D202481083 November 23 March 24 Combined Survey Responses by Valley.XLSX
- 6.5.2 D202481091 CAG Representatives Meeting 6 Feb 24 OL Review Update Presentation.PDF
- 6.5.2 D202481092 CAG Representatives Meeting 6 February 2024 CAG Survey results presentation.PPTX
- 6.5.2 D2023168714 Summary of Engagement Insights on WAMC pricing proposal priorities.PDF
- 6.5.2 D2023168718 WaterNSW CAG Round 3 Issues SEC Newgate.PDF
- 6.5.3 D201958059 Customer Advisory Groups mid term vacancies changes.XLSX
- 6.5.3 D202216073 CAG membership lists 22 25.XLSX
- 6.5.3 D202426816 nomination.PDF
- 6.5.3 D202426835 Letter of Appointment David Pengilly, Lachlan CAG.PDF
- 6.5.4 D202216072 Nominations and Enquiries Register.XLSX
- 6.5.4 D202481080 Membership summary May 2022 summary of representation.PPTX
- 6.5.4 D2021130258 Nomination Form Customer Advisory Groups Feb 2022.DOC
- 6.5.5 D202432023 presentations.PDF
- 6.5.5 D202432024 pricing presentation.PDF
- 6.5.5 D202432025 business papers.PDF
- 6.5.5 D202432026 minutes.PDF
- 6.6 D202337348 Lachlan CAG Business Papers 29 March 23.PDF
- 6.6 D202348655 CAG Chairs' Meeting notes 6 October 2022.PDF
- 6.6 D202348657 CAG Chairs' presentation.PPTX
- 6.6 D2022112867 Meeting Minutes Lachlan CAG 13 July 2022.PDF
- Clause 6.5.2 CAG outcomes.PDF
- 6.5.1 D202216072 Customer Advisory Groups - 2022-25 - Nominations Register.XLSX
- 6.5.1 D202216073 Customer Advisory Groups - 2022-25 - Membership Lists.XLSX
- 6.5.1 D202216076 CAG Recruitment - Advertisement - The Land.PNG
- 6.5.1 D202216083 Media Release - Call for Nominations to CAGs - 28 February 2022.DOC

- 6.5.1 D202216091 CAG Recruitment - Image 2 - Social Media – 2022.PNG

## Clause 6.6 – Customer advisory group charter

- Customer Advisory Groups Charter available on WaterNSW's website

## Clause 6.8 – Code of practice on payment difficulties

- 6.8.2 D202479872 Suspending a Licence for Non Payment Procedure.DOCX
- 6.8.2 D202479874 Applying and registering a payment plan - Copy.DOCX
- 6.8.2 D202480314 Invoice samples.PDF
- 6.8.2 CD201770 [V7] Debt Management Code of Practice.DOCX
- 6.8.2 CD201962 WaterNSW Internal Customer Hardship Procedure.DOC
- 6.8.2 CD2015311[V3] Water Debtor Management Procedure.DOC

## Clause 6.9 – Internal complaints handling procedure

- 6.9.1 CD2020119 Feedback Compliments & Complaints Policy.DOCX
- 6.9.3 D202480314 Customer invoices EWON examples.PDF
- 6.9.1 and 6.9.2 D202480785 WaterNSW Orientation Final Slides 14th May 2024.PPTX
- 6.9.1 and 6.9.2 D202480896 Complaints training records.XLSX
- 6.9.1 CD200713 [V7] Complaints and Compliments Handling Procedure.DOCX

## Clause 6.10 – External dispute resolution scheme

- 6.10.1 D202480335 EWON invoice 2 -11July2024.PDF
- 6.10.1 D202480333 EWON invoice 1 - 3June2024.PDF

## Clause 6.11 – Educative role

- 6.11.1 D202443309 RFQ Urban Stormwater Engagement Module.PDF
- 6.11.1 D202460000 Draft ACMR 2024.DOCX
- 6.11.1 D202468726 Upcoming workshops RLP.MSG
- 6.11.1 D202482531 Media release\_XX0924\_Education and ~ key to improved compliance on NSW building sites\_EPA edits.DOCX
- 6.11.1 D202484085 NAIDOC 2024 activity sheet Gundungurra language.JPG
- 6.11.1 D202343501 Catchment Protection Work Program 2024.PDF
- 6.11.1 D202368041 2023 Annual Catchment Management Report.DOCX
- 6.11.1 D202413184 Warragamba Dam Visitor Centre Excursion Program July 23 June 24.XLSX
- 6.11.1 D202417972 Crossword Complex Summer safety.PDF
- 6.11.1 D202417973 Crossword Simple Summer Safety.PDF



## Clause 6.17 – Online portal for lodgement of documents relating to metering equipment

- D202248701 Azure SQL Database backup Retention.DOCX
- D202293861 DQP docs and certificates - Document Retention.msg
- D202480103 Copy Azure SQL Database to Non\_Azure Environment - Yearly Task.msg
- DQP docs and certificates - Meeting NRAR, WaterNSW, DCCEEWSMSG
- E-mail DPE confirmation on DQP docs and certificates - Document Retention.MSG
- E-mail NRAR confirmation on DQP docs and certificates - Document Retention.MSG
- Email reply DCCEEWS on DQP docs and certificates - Document Retention WayneAndrews Sep 2024.MSG
- Email reply NRAR on DQP docs and certificates - Document Retention ChrisKirby Sep2024.MSG
- Evidence - DQP Portal DB Configuration.DOCX
- Monthly Attestation DQP Privilege Access 2024.DOCX
- RE DQP docs and certificates - Document Retention.msg
- RE Email reply to NRAR on DQP docs and certificates - Document Retention.msg
- Records Disposal Procedure.DOC
- Records Management Procedures Manual.DOCX
- CD2022110 DQP Data Retention Protocol and Back-Up Procedures\_NEW.DOCX
- Copy Azure SQL Database to Non\_Azure Environment - Yearly Task Dec 2022.MSG
- Copy Azure SQL Database to Non\_Azure Environment - Yearly Task Dec 2023.MSG

## Appendix D Supporting information for Clause 2.1.3

Supporting information associated with clause 2.1.3 is provided in this section.

### D.1 Element 2

We sampled a number of the schematics on Modelpedia and identified several inconsistencies.

#### Observed inconsistencies from system schematic diagrams when compared to Modelpedia

System/schematic	Detail	Inconsistency/notes
<b>Prospect Water Supply System Schematic Final</b>	CCP1	<ul style="list-style-type: none"> <li>Turbidity meters shown as CCP measurement point on pipelines from Warragamba Dam but no reference to CCP1.</li> <li>Online and grab sampling points are shown on the <i>Prospect Water Supply System Schematic Final</i>, but only online sampling points are shown on <i>Warragamba to Prospect Final</i>.</li> </ul>
	CCP3	<ul style="list-style-type: none"> <li>CCP3 is shown at the pump station but in <i>Warragamba to Prospect Final</i> it is shown after the pump station.</li> </ul>
<b>Shoalhaven Supply Schematic Final</b>	CCP4B	<ul style="list-style-type: none"> <li>Missing &gt; 1 hour in the critical value in the schematic CCP description box.</li> </ul>
	CCP6	<ul style="list-style-type: none"> <li>DW11 label mentions "CCP6a", should just be CCP6.</li> </ul>
<b>Upper Nepean Supply Schematic Final</b>	CCP2A	<ul style="list-style-type: none"> <li>Noted in CCP descriptor box "SCADA WD0028 destroyed in 2022, confirm if replaced".</li> </ul>
	CCP4B	<ul style="list-style-type: none"> <li>Listed under CCP4A in the CCP tables, on schematic it is labelled as CCP4B.</li> <li>The referenced SCADA code "WA0025B" at the Illawarra WTP inlet on the schematic is not mentioned in the CCP table, listed as "WD0004" in table (Sydney Water measurement).</li> <li>Missing &gt; 1 hour in the critical value in the schematic CCP description box.</li> </ul>
<b>Warragamba to Prospect Final</b>	CCP1	<ul style="list-style-type: none"> <li>Turbidity alarms not shown on pipelines for WD0007 - does not distinguish which pipeline corresponds to WQM01 and WQM02.</li> </ul>
	CCP3	<ul style="list-style-type: none"> <li>WQM02 code not shown on schematic at RWPS WP0903 for CCP3 measurement.</li> <li>Missing &gt; 1 hour in the critical value in the schematic CCP description box.</li> </ul>
	Valve 9	<ul style="list-style-type: none"> <li>Valve 9 is shown as a third-party asset (green) but shown in black on <i>Prospect Water Supply System Schematic Final</i>.</li> </ul>
<b>Prospect Water Supply System Schematic Final</b>	Pipeline from Prospect Reservoir to Prospect WFP	<ul style="list-style-type: none"> <li>Pipeline is shown as a third-party asset (green) but shown as black in <i>Warragamba to Prospect Final</i>.</li> </ul>
<b>Duckmaloi Supply Schematic Final</b>	OCP7A/B	<ul style="list-style-type: none"> <li>OCP7A is shown on schematic and is labelled as OCP7 with a triangle (on-line). OCP7B is not shown as a sample point.</li> </ul>
	CCP8	<ul style="list-style-type: none"> <li>CCP8 ATU3004 is labelled as CCP6.</li> </ul>
	CCP9	<ul style="list-style-type: none"> <li>Sample point labelled as DDUC02 on schematic but referred to as ARC3001 in CCP table.</li> </ul>

System/schematic	Detail	Inconsistency/notes
		<ul style="list-style-type: none"> <li>Sample point (circle) labelled on schematic but on-line (triangle) not shown.</li> </ul>
	Browns valve	<ul style="list-style-type: none"> <li>Critical bypass valve shown with the description "<i>Cross Connection- Critical Location TBC</i>".</li> </ul>
<b>Woronora Supply Schematic Final</b>	CCP4A	<ul style="list-style-type: none"> <li>Missing &gt; 1 hour in the critical value in the schematic CCP description box.</li> </ul>
<b>Fish River Supply Schematic Final</b>	OCP9A	<ul style="list-style-type: none"> <li>Free chlorine residual monitoring site <i>DWAL04</i> mentioned in OCP table but not shown on schematic.</li> <li>Monitoring site after the Rydal tank labelled as <i>DRYDL01</i> on schematic but referred to as <i>DRYD01</i> in OCP table.</li> </ul>
	OCP7A/B	<ul style="list-style-type: none"> <li>OCP7A and OCP7B are both combined on the sample point labelled as <i>VPS420115</i> in schematic and shown as a sample point (red circle). OCP 7A is shown as an on-line point (triangle) in <i>Duckmaloi Supply Schematic Final</i>.</li> </ul>

# DESIGN WITH COMMUNITY IN MIND

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of place and of belonging. That's why at Stantec, we always design with community in mind.

We care about the communities we serve—because they're our communities too. This allows us to assess what's needed and connect our expertise, to appreciate nuances and envision what's never been considered, to bring together diverse perspectives so we can collaborate toward a shared success.



We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

Stantec trades on the TSX and the NYSE under the symbol STN.  
Visit us at [stantec.com](https://stantec.com) or find us on social media.



## E IPART's checks for the 2024 audit

Table E.1 Clauses that we checked as part of the 2024 audit

Operating licence clause		Compliance grade
1.6.2	Water NSW must provide to the person undertaking the End of Term Review such information as is reasonably required to enable the person to complete the End of Term Review. Water NSW must provide that person with such information within a reasonable time period of receiving a request for that information from that person.	
<b>Note:</b>  = Compliant		

<sup>1</sup> Section 58 of the *Water NSW Act 2014*.  
<sup>2</sup> IPART, *Compliance and Enforcement Policy*, December 2017, p 5.  
<sup>3</sup> IPART, *Public Water Utility Audit Guideline*, July 2023.

---

© Independent Pricing and Regulatory Tribunal (2025).

With the exception of any:

1. coat of arms, logo, trade mark or other branding;
2. photographs, icons or other images;
3. third party intellectual property; and
4. personal information such as photos of people.

this publication is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Australia Licence.



The licence terms are available at the Creative Commons [website](#)

IPART requires that it be attributed as creator of the licensed material in the following manner: © Independent Pricing and Regulatory Tribunal (2025).

The use of any material from this publication in a way not permitted by the above licence or otherwise allowed under the *Copyright Act 1968* (Cth) may be an infringement of copyright. Where you wish to use the material in a way that is not permitted, you must lodge a request for further authorisation with IPART.

**Disclaimer**

This document is published for the purpose of IPART fulfilling its statutory or delegated functions as set out in this document. Use of the information in this document for any other purpose is at the user's own risk, and is not endorsed by IPART.

**ISBN** 978-1-76049-783-5