

Independent Pricing and Regulatory Tribunal
New South Wales

WaterNSW Operational Audit 2019

Report to the Minister

Compliance Report
Water

December 2019

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This report is based on an independent audit report, WaterNSW's self-report and feedback from relevant stakeholders on WaterNSW's compliance performance throughout the 2018-19 audit period.

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The Independent Pricing and Regulatory Tribunal (IPART)

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Summary






Customers in NSW rely on safe and reliable water and wastewater services. Operating licences outline the obligations imposed by the NSW Government on publicly owned monopoly suppliers of essential services such as Water NSW (WaterNSW). The Independent Pricing and Regulatory Tribunal of NSW (IPART) conducts annual licence audits to ensure WaterNSW meets these expectations.






This is our operational report to the Minister on the 2019 audit as required under the *Water NSW Act 2014* (Act).¹ In the 2019 annual audit, we audited WaterNSW's compliance with 32 clauses of the *Water NSW 2017-2022 Operating Licence* (Licence).²

Key findings

The 2019 audit found that WaterNSW had a high level of compliance with the Licence conditions. We have summarised WaterNSW's compliance with audited clauses of the Licence in Table 1 below.

Table 1 WaterNSW's compliance in 2019, the second year of its 2017-2022 licence

Licence part	Number of audited clauses	Compliance grade assigned				
						
Part 1 – Licence context and authorisations	-	-	-	-	-	-
Part 2 – Water Source protection and conservation	11	6	3	-	-	2
Part 3 – Bulk Water storage and transmission	9	9	-	-	-	-
Part 4 – Performance Standards	2	2	-	-	-	-
Part 5 – Organisational systems management	4	4	-	-	-	-
Part 6 – Customer and stakeholder relations	4	4	-	-	-	-
Part 7 – Performance monitoring and reporting	2	2	-	-	-	-
Part 8 – Definitions and interpretation	-	-	-	-	-	-
Total	32	27	3	-	-	2


Note:  = Compliant;  = Compliant (minor shortcomings);  = Non-Compliant (non-material);  = Non-Compliant (material);  = No Requirement.

Source: Cobbitty, *2019 Operational Audit of WaterNSW*, November 2019.

The 2019 audit found three Compliant (minor shortcomings) grades for WaterNSW's maintenance and implementation of a Water Quality Management System. These issues are discussed in Table 2.2.

¹ See Division 1 of Part 5 of the Act.

² This year our report presents an exception based summary of the audit, rather than all findings as in previous years. We discuss any audited clause which did not receive a "Compliant" grading in Chapter 2. For the full findings of the audit refer to the auditor's report in Appendix D.



We make two recommendations to the Minister for these clauses where we did not assign a fully Compliant grade.³ These recommendations are set out in Chapter 1 of this report and discussed in Chapter 2.

This audit also followed up on the 22 recommendations arising from previous audits. We found that WaterNSW has closed out 15 of the 22 outstanding recommendations. Our discussion of WaterNSW's progress with previous recommendations is presented in Chapter 3.

³ As per the Audit Guideline, auditors are required to make recommendations for grades other than Compliant, ie, for Compliant (minor shortcomings), Non-compliant (non-material) and Non-compliant (material).

1 Introduction

The 2019 audit is the second operational audit of WaterNSW's compliance with the requirements of the current Licence. The 2019 audit covers the period from 1 July 2018 to 30 August 2019.

We engaged specialist auditing firm Cobbitty Consulting Pty Ltd (Cobbitty), in partnership with Viridis Consultants Pty Ltd (Viridis), to undertake the audit on our behalf. We have prepared this report to summarise the audit findings for the Minister for Water, Property and Housing, the Hon. Melinda Pavey, MP.

1.1 Recommendations

We make the following two recommendations for the clauses where we did not assign a Compliant grade⁴ to WaterNSW to ensure that compliance with the operating licence is maintained. These recommendations are based on the findings of the audit by our auditor, Cobbitty, and should be read in conjunction with each of the relevant licence clauses.

Recommendations to WaterNSW

- 1 By 30 September 2020, WaterNSW should review the Fish River Water Supply System verification monitoring plan to:
 - Identify the monitoring zones
 - Specify the minimum frequency and number of E. coli monitoring samples undertaken in each monitoring zone in accordance with the Australian Drinking Water Guidelines
 - Review the implementation of the monitoring program to ensure that testing is undertaken in accordance with the monitoring plan
 - Establish review and reporting processes to confirm and report compliance with the monitoring program (eg, reporting should verify the number of samples taken).
- 2 By 30 September 2020, WaterNSW should identify the minimum qualifications and competencies for personnel operating water treatment processes and incorporate these into the training processes such as the 'Mandatory Training Matrix'. The minimum qualifications and competencies should be based on industry standards such as Water Industry Operator Certification Scheme or a substantially similar scheme.

The compliance grades are explained in Appendix A. IPART's *Water NSW Reporting Manual* (Reporting Manual) requires WaterNSW to provide a report on its progress in implementing these recommendations by 31 March 2020.

⁴ Compliant grade does not include Compliant (minor shortcomings) grade.

1.2 WaterNSW's compliance has improved in 2019

Given the challenging context of widespread drought, WaterNSW has demonstrated commendable efforts to improve its operations in a number of areas.

The 2018 audit identified material non-compliances with the adequacy of the WaterNSW Water Quality Management System (WQMS), water Supply⁵ performance standards, Asset Management System (AMS), Customer Supply Agreements (other than with Sydney Water), water metering and monitoring and Supplying in accordance with Customer Supply Agreements. The 2018 audit also identified that some of the same failures impacted compliance across multiple parts of the licence. The findings of that audit indicated that WaterNSW had not yet fully integrated the systems it inherited from the three former organisations - Sydney Catchment Authority, State Water Corporation and the Department of Primary Industries. Further, WaterNSW had not fully responded to its new regulatory framework, particularly the change to the licence obligations.⁶

At the 2019 audit, WaterNSW demonstrated that it has made significant progress towards integrating its systems and has responded to its regulatory framework. In particular, we consider that WaterNSW improved its performance in relation to the adequacy of its WQMS, catchment management, catchment infrastructure works management, construction, maintenance and operation of Water Management Works, management of service interruptions in accordance with the AMS, and maintenance and implementation of the AMS.

While we identified some compliance matters in the 2019 audit, we consider these matters and their associated risks to be relatively minor in nature. We discuss these issues in Chapter 2.

1.3 Annual statement of compliance

In preparing this report we have also considered WaterNSW's annual Statement of Compliance (Appendix E). This is an exception-based report⁷ certified by the CEO and the Chair of the Board of Directors of WaterNSW listing any licence non-compliances that WaterNSW identified and what remedial action had been taken, or was being taken, to resolve any reported non-compliances.

This year, WaterNSW reported two new non-compliances and 16 non-compliances carried over from the previous reporting period.⁸


The two new non-compliances relate to the Environmental Management System (EMS). WaterNSW reported that the scope of the EMS did not capture all authorised functions, meaning the EMS was not compliant with the requirements of the Licence. WaterNSW also stated that the EMS manual was under review until 17 April 2019, when it was approved, and was not compliant with the requirements of the Licence until that date. WaterNSW stated

⁵ In this report, the term "Supply" has the same meaning as the defined term in the Licence

⁶ IPART, *WaterNSW Operational Audit 2018 - Report to the Minister – Compliance Report*, February 2019, page 2.

⁷ This means reporting only on those clauses where WaterNSW considers it is non-compliant.

⁸ WaterNSW only self-reported those clauses for which we assigned a Non-compliant (non-material) or Non-compliant grade in the 2018 audit. WaterNSW did not report on those clauses for which we assigned a Compliant (minor shortcomings) grade.



that this did not impact on the implementation of the EMS during that time. The 2019 audit found that WaterNSW's EMS has since been amended to capture all authorised functions.

As set out in the auditor's report (Appendix D), WaterNSW has either complied with, or made significant progress toward complying with, the recommendations arising from the 16 carried over non-compliances. The Statement of Compliance (Appendix E) outlines the dates at which WaterNSW completed the actions to rectify the non-compliances.

1.4 Progress with previous recommendations

Of the total 22 previous recommendations (including the 16 recommendations from the 2018 audit referred to above), WaterNSW completed 15 during the 2019 audit period. Seven recommendations from the 2018 audit remain ongoing. The ongoing recommendations are not due for completion until either December 2019 or June 2020, depending on the date stipulated in each recommendation.

WaterNSW completed many of the recommendations on the adequacy and implementation of the WQMS, research on catchments, catchment and infrastructure works management, water supplied performance standards, the AMS, water supply, water metering and monitoring, and customer related clauses (including customer advisory groups, Customer Supply Agreements, the Code of Practice on Payment Difficulties and Internal Complaints Handling Procedure).

Further information can be found in Chapter 3.

1.5 Audit scope

The 2019 audit covered the period from 1 July 2018 to 30 August 2019.

The full process we followed to undertake the audit is described in Appendix B.

2 Audit findings and recommendations







This chapter provides an exception-based summary of WaterNSW’s compliance with the audited clauses of the Licence. It explains the auditor’s findings on audited clauses that did not achieve the highest compliance grade (Compliant).






WaterNSW has shown an overall high level of compliance with the Licence. The auditor identified two minor shortcomings in relation to WaterNSW’s obligations for Water Source protection and conservation. These minor shortcomings did not affect water quality or public health during the audit period, but they do require attention from WaterNSW to ensure compliance is maintained. The two issues identified resulted in three clauses receiving a Compliant (minor shortcomings) grade.

For the clauses subject to this audit, Table 2.1 provides a snapshot of WaterNSW’s non-compliances over the course of the Licence for the clauses where WaterNSW has not been assigned a Compliant grade in this year’s audit. Table 2.2 provides an audit exception summary (ie, a summary of the non-compliances) and our reasoning for the assigned grade and any relevant recommendations.

The auditor also identified some opportunities for improvement in WaterNSW’s operational audit report, provided in Appendix D.

Table 2.1 2019 audit exceptions in relation to historic performance with 2017-2022 Operating Licence requirements

Licence part	Requirement	Compliance grade				
		2017-18 ^a	2018-19 ^{b,c}	2019-20	2020-21	2021-22
2.1	Water Quality Management System					
2.1.1	Maintain a Water Quality Management System					
2.1.3	Non-Declared Catchment WQMS consistent with relevant guidelines					
2.1.4	Implement relevant WQMS and carry out all relevant activities in accordance with the WQMS and to the satisfaction of NSW Health					



Note:  = Compliant;  = Compliant (minor shortcomings);  = Non-Compliant (non-material);  = Non-Compliant (material);  = No Requirement.

^a IPART, *WaterNSW Operational Audit 2018 – Report to the Minister – Compliance Report*, December 2018


^b Cobbitty, *2019 Operational Audit of WaterNSW*, November 2019.

^c In previous years, we generally selected audit periods that aligned with the financial year (ie, from 1 July to 30 June of the following year). In 2019, we specified an audit period that commenced on 1 July 2018 and ended immediately before we undertook the audit interviews (ie, on 30 August 2019) enabling the auditor to consider more recent evidence submitted by WaterNSW in evaluating operational performance.

Table 2.2 2019 compliance with WaterNSW’s operating licence – grades other than fully Compliant

Licence clause	Requirement	Compliance grade	Audit findings	Recommendation(s)
2.1.1	Water NSW must maintain a Water Quality Management System in accordance with this clause 2.1.	Compliant (minor shortcomings) 	Our auditor assigned WaterNSW a Compliant (minor shortcomings) grade for clause. We agree with this grade. The compliance of this clause requires WaterNSW to comply with each sub-clause of clause 2.1. Please refer to the audit findings for clauses 2.1.3 and 2.1.4.	No recommendations have been made specific to this clause. Refer to recommendation 2019-01 relating to the findings for clause 2.1.3.
2.1.3	With respect to Non-Declared Catchment Areas from which Water NSW Supplies water, Water NSW must maintain WQMS that are consistent with the requirements specified in clause 2.1.3 of the WaterNSW licence.	Compliant (minor shortcomings) 	Our auditor assigned WaterNSW a Compliant (minor shortcomings) grade for clause 2.1.3. We agree with this grade. Our auditor assessed the WQMS for the Non-Declared Catchment Areas against the Australian Drinking Water Guidelines (ADWG) and identified inconsistencies with Element 5 and Element 7 of the ADWG. The auditor concluded that these inconsistencies amounted to minor shortcomings. Element 5 of the ADWG requires a utility to determine the characteristics to be monitored in the distribution system and in water supplied to the consumer, and to document a sampling plan for each characteristic, which includes the location and frequency of sampling. In determining the sampling and monitoring plan the guidelines require utilities to ensure monitoring data are representative and reliable. The ADWG provides population based guidance for the appropriate frequency of sampling per supply zone.	2019-01: By 30 September 2020, WaterNSW must review the Fish River Water Supply System verification monitoring plan to: <ul style="list-style-type: none"> ▼ Identify the monitoring zones ▼ Specify the minimum frequency and number of E. coli monitoring samples undertaken in each monitoring zone in accordance with the ADWG requirements ▼ Review the implementation of the monitoring program to ensure that testing is undertaken in accordance with the monitoring plan Establish review and reporting processes to confirm and report compliance with the monitoring program (eg, reporting should verify the number of samples taken).

Licence Requirement clause	Compliance grade	Audit findings	Recommendation(s)
		<p>The auditor found that for the Fish River Water Supply System, WaterNSW's monitoring plan did not clearly identify supply zones to ensure that sample locations are representative and adequate to cover the complexity of the supply system. Without identifying the supply zones, the auditor could not adequately assess whether WaterNSW was undertaking the recommended minimum number of samples per supply zone, in accordance with the ADWG. WaterNSW's verification monitoring program did specify an adequate number of samples based on the total population supplied by all zones, but insufficient monitoring was conducted for individual zones. While this does not meet the requirements of this element, we consider that the shortcomings are minor in nature.</p>	
		<p>The shortcomings did not compromise WaterNSW's ability to achieve defined objectives or assure controlled processes in managing risks to water quality or public health.</p>	
		<p>The auditor also identified shortcomings when assessing the WQMS for the Non-Declared Catchment Areas against Element 7 of the ADWG.</p>	<p>2019-02: By 30 September 2020, WaterNSW must identify the minimum qualifications and competencies for personnel operating water treatment processes and incorporate these into the training processes such as the 'Mandatory Training Matrix'. The minimum qualifications and competencies should be based on industry standards such as Water Industry Operator Certification Scheme or a substantially similar scheme.</p>
		<p>Element 7 of the ADWG requires that water service providers ensure that employees, including contractors, maintain the appropriate experience and qualifications. It also specifies training requirements for these employees.</p>	
		<p>WaterNSW had not identified formal qualifications for personnel responsible for water treatment at the Fish River Water Supply Scheme (including for water treatment operators).</p>	
		<p>We consider that this is a risk to operations because it may be undertaken by personnel without the necessary skills and expertise.</p>	

Licence clause	Requirement	Compliance grade	Audit findings	Recommendation(s)
			However, we consider these shortcomings to be minor because WaterNSW had processes in place to train personnel mitigating the risk of them operating with insufficient skills. WaterNSW demonstrated that it had outlined mandatory training for each employee, including for contractors, consistent with the ADWG requirements.	
2.1.4	Water NSW must ensure that the relevant WQMS are fully implemented and that all relevant activities are carried out in accordance with the relevant WQMS and to the satisfaction of NSW Health.	Compliant (Minor Shortcomings) 	<p>Our auditor assigned WaterNSW a Compliant (minor shortcomings) grade for clause 2.1.4. We agree with this grade.</p> <p>The shortcomings related to deficiencies with the documentation for the implementation of the WQMS for the Fish River Water Supply Scheme, as discussed under clause 2.1.3.</p> <p>The auditor could not audit the implementation of the Fish River Water Supply Scheme verification monitoring program due to the lack of documentation around the number of samples taken at the Fish River Water Supply Scheme. We consider that the shortcoming is minor because WaterNSW provided evidence that it undertook verification monitoring and the results did not indicate any non-compliant results or a risk to public health during the audit period.</p>	We make no recommendations in relation to clause 2.1.4. We consider implementation of recommendation 2019-01 will address the identified shortcoming.

Source: IPART, *WaterNSW Operational Audit 2018 – Report to the Minister – Compliance Report*, December 2018

3 Progress on previous audit recommendations

The previous audits in 2017 and 2018 identified areas where WaterNSW was not Compliant with the Licence obligations. We made recommendations to the then Minister for Regional Water to address these issues.⁹

WaterNSW has completed 15 of the 22 previous audit recommendations, including two outstanding from the 2017 audit. Commendably, twelve of the recommendations due for completion within the next audit period were completed within the current audit period. Seven recommendations remain ongoing. Most of these are due for completion in December 2019 with one due in June 2020. The progress of previous recommendations is summarised in Table 3.1.

Table 3.1 WaterNSW’s progress in 2019 to address our recommendations from previous audits

	Recommendation	Progress
2016-17-03	By 30 June 2018, Water NSW undertakes a risk assessment to determine appropriate strategies and controls to address any current reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.	Complete WaterNSW provided evidence that it had undertaken a risk assessment for the mixers and aerators and had established a procedure to manage the identified risks.
2016-17-04	By 31 December 2018, Water NSW implements appropriate strategies and controls to address any reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.	Complete WaterNSW provided evidence that it had implemented strategies and controls to address failure and reliability concerns in relation to aerators and mixers.
2018-01	By 30 September 2019, Water NSW should review and amend its Water Quality Management System (WQMS) to ensure that each water category covered by the WQMS addresses each element, component and activity of the Australian Drinking Water Guidelines framework.	Complete The auditor found that WaterNSW had undertaken adequate steps to complete this recommendation by the due date. WaterNSW had updated its WQMS to clearly identify the water categories that are covered by the WQMS. Further, the WQMS is largely consistent with the requirements of the Australian Drinking Water Guidelines (ADWG). The auditor has made recommendations to address any specific issues identified in the 2019 audit, as discussed in Chapter 2.
2018-02	By 30 September 2019, Water NSW should document its procedures and process to manage materials and chemicals used in its system where the water is supplied for a drinking water end-use.	Complete WaterNSW provided evidence to demonstrate that it had documented procedures and processes for managing chemicals that covers all categories of water where drinking water is the end use.

⁹ IPART, *WaterNSW Operational Audit 2016-17, Report to the Minister – Compliance Report*, December 2017. IPART, *WaterNSW Operational Audit 2018, Report to the Minister – Compliance Report*, February 2019.

Recommendation	Progress
<p>2018-03</p> <p>By 31 December 2019, Water NSW should review the operational and process control procedures underpinning its Water Quality Management System and:</p> <ul style="list-style-type: none"> ▼ Identify the required operational procedures from catchment to consumer for processes and activities under its control ▼ Develop a plan to compile this information ▼ Commence implementation of the plan and document operational procedures for all processes and activities (eg, preventive measures, operational monitoring and verification procedures and maintenance requirements) ▼ Commence staff training to ensure staff are trained and proficient to implement the new operational procedures. 	<p>Ongoing</p> <p>WaterNSW provided evidence that it had commenced the review of the procedures and had established a number of new procedures. However, at the time of the audit, WaterNSW had not covered all processes and activities from catchment to consumer for each of WaterNSW's water systems covered by the licence.</p> <p>This recommendation is due for completion by 31 December 2019.</p>
<p>2018-04</p> <p>By 31 December 2019, Water NSW should review the manner in which it conducts all water utility risk assessments to ensure it meets the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.</p>	<p>Ongoing</p> <p>WaterNSW provided evidence that it had commenced reviewing its risk assessment process. However, the auditor found that there were opportunities to further refine the risk assessment process to better align with the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.</p> <p>This recommendation is due for completion by 31 December 2019.</p>
<p>2018-05</p> <p>By 31 December 2019, Water NSW should explicitly identify how the research program for each Declared Catchment Area relates to catchment management and catchment health.</p>	<p>Complete</p> <p>WaterNSW provided evidence to demonstrate that it had identified how its Science Program relates to catchment management and catchment health for each Declared Catchment Area.</p>
<p>2018-06</p> <p>By 31 December 2019, Water NSW should revise the Asset Management System to ensure it is consistent with clause 5.1.1 in particular:</p> <ul style="list-style-type: none"> ▼ The scope accurately reflects the licence requirements including the Design Criteria, and related requirements for water supply security, robustness and reliability are adequately incorporated within the system ▼ The correct stakeholders have been identified and that stakeholder requirements including those relating to supply interruptions are reflected 	<p>Complete</p> <p>WaterNSW demonstrated that it had revised the AMS so that the scope accurately reflected the Licence requirements, the correct stakeholders and their requirements had been identified, the Fish River Water Supply Scheme Incident Management Plan had been revised to reflect stakeholder requirements and supply interruptions were managed appropriately.</p> <p>WaterNSW also demonstrated that it had made and was implementing plans to revise those elements of the AMS deemed necessary to ensure that it meets the requirements and intent of the Strategic Asset Management Plan, as required by this recommendation.</p>

	Recommendation	Progress
	<ul style="list-style-type: none"> ▼ Identify whether any elements of the AMS do not meet the requirements and intent of the Strategic Asset Management Plan and if found, make a plan to revise the relevant elements to ensure that the AMS meets the requirements and intent of the Strategic Asset Management Plan ▼ Revise the Fish River Water Supply Scheme Incident Management Plan so that it reflects stakeholder requirements ▼ Identify if any other processes or documents for managing supply interruptions should be revised to meet stakeholder requirements and develop a plan and timeframe for revising these processes and documents. 	
2018-07	By 31 December 2019, Water NSW should provide an updated plan for completion of Asset Class Standards with appropriate owners assigned to each action in the plan.	<p>Complete</p> <p>WaterNSW demonstrated that a plan for completing its Asset Class Standards had been developed, including assigning owners and setting due dates. Further, WaterNSW had reviewed the plan and updated it in August 2019.</p>
2018-08	<p>By 31 December 2019, Water NSW should ensure that all Customer Supply Agreement templates and relevant supporting processes are reviewed to ensure:</p> <ul style="list-style-type: none"> ▼ Relevant and current regulatory instruments are included, including references to the Plumbing Code of Australia, and all requirements of clause 6.1.3 and clause 6.8.3. ▼ Templates are kept under regular review. ▼ Users of the templates are prompted to check the most up to date version of the licence and other regulatory instruments. ▼ Users of Customer Supply Agreements, including the legal representatives who review them, are trained to use the template and do not use previous agreements. 	<p>Ongoing</p> <p>WaterNSW demonstrated that it had undertaken work to review and update its Customer Water Supply Agreement templates. In each case they addressed the requirements of licence clauses 6.1.3 and 6.8.4. (However, references to two acts of Parliament had not been updated).</p> <p>WaterNSW had updated its Customer Supply Agreement Procedure to require staff to check the currency of templates (including their contents) prior to use. It also commenced preparation of an Implementation Plan aimed at addressing the requirements of this recommendation.</p> <p>At the time of audit, WaterNSW had not yet fully planned or implemented training for users of the templates.</p> <p>This recommendation is due for completion by 31 December 2019.</p>
2018-09	By 1 June 2019, commence re-negotiation of the Customer Supply Agreement with Wingecarribee Council, with the intent of including water quality reporting that meets the sampling and monitoring capability of the supply system.	<p>Complete</p> <p>WaterNSW demonstrated by providing file notes and email correspondence that it had commenced review/re-negotiation of the Customer Supply Agreement with Wingecarribee Council. The need to update the water quality section of the agreement was referenced in the evidence. Further, the parties engaged a water quality subject matter expert in the initial phases of the review.</p>

Recommendation	Progress
2018-10	<p>By 31 December 2019, Water NSW should undertake a risk-based review of Customer Supply Agreements across all types of customers (including all customers who are supplied drinking water) to ensure that the supply of water meets the terms and conditions of those agreements.</p>
<p>Ongoing</p> <p>WaterNSW provided a draft Register of Customer Supply Agreements which identified gaps in the provisions of the Water Supply Agreement for some customers.</p> <p>However, the auditor found that it was not clear how the register documented or reflected the outcomes of the risk assessment to ensure that the supply of water met the terms and conditions of the Water Supply Agreements. Further, the register did not include minor customers in the Master List.</p> <p>This recommendation is due for completion by 31 December 2019.</p>	
2018-11	<p>By 30 June 2020, Water NSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (Recommendation 2017-18-10).</p>
<p>Ongoing</p> <p>WaterNSW cannot implement the outcomes of the review of the Customer Supply Agreement, as required by this recommendation, until it has first completed the review required in Recommendation 2018-10.</p> <p>This recommendation is due for completion by 30 June 2020.</p>	
2018-12	<p>By 30 September 2019, Water NSW should set objectives for the accuracy of water take determination with respect to billing, account management and reporting.</p>
<p>Complete</p> <p>WaterNSW demonstrated that it had updated its Determining Water Take Procedure to identify objectives that were set for the accuracy of water take measurements. These objectives included a target measurement accuracy of +/- 5% and a materiality limit of +/- 5% as a trigger for investigation of variations in water take from year to year.</p>	
2018-13	<p>By 31 December 2019, Water NSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.</p>
<p>Ongoing</p> <p>WaterNSW advised that it will take action in response to this recommendation once Quarter 4 billing is finalised.</p> <p>This recommendation is due for completion by 31 December 2019.</p>	
2018-14	<p>By 31 December 2019, Water NSW should establish a register of ownership and responsibilities for all meters in which it has a joint interest.</p>
<p>Complete</p> <p>WaterNSW demonstrated that it had registers in place identifying the ownership and responsibility for all meters in which it had a joint interest.</p>	
2018-15	<p>By 30 September 2019, Water NSW should ensure that a process is in place to record assessment and approval of nominations to the Customer Advisory Groups in accordance with reference to both the Customer Advisory Group Charter and requirements of the licence clause 6.5.4.</p>
<p>Complete</p> <p>WaterNSW demonstrated that it had a process in place to record assessment and approval of nominations to the Customer Advisory Groups. The Customer Advisory Groups Charter sets out the membership criteria which referenced the requirements of licence clause 6.5.4.</p>	

Recommendation	Progress	
2018-16	<p>By 31 December 2019, Water NSW should review the Code of Practice on Payment Difficulties to clarify procedures for all modes of identification of hardship (ie, self, community welfare organisations, and Water NSW).</p>	<p>Complete WaterNSW demonstrated that its Debt Management Code of Practice had been updated to include four methods by which a customer may be identified as requiring financial assistance. These included self-identification, identification by a registered welfare organisation or community group, identification by WaterNSW through discussions with the customer or identification by WaterNSW because of a customer's failure to pay their account.</p>
2018-17	<p>By 30 September 2019, Water NSW should include a definition of financial hardship in the Debt Management Code of Practice. Water NSW should ensure that Customer Support Officers are trained in this definition and that records are kept to support when customers are first identified as experiencing financial hardship.</p>	<p>Complete WaterNSW demonstrated that it had included a definition for financial hardship in the Debt Management Code of Practice. However, it used the term "affordability" instead of "financial hardship". WaterNSW also provided evidence of training records to demonstrate that it had trained Customer Service Officers in respect of this definition. Further, WaterNSW provided screenshots demonstrating how it kept records to support when customers are first identified as experiencing financial hardship.</p>
2018-18	<p>By 30 September 2019, Water NSW should ensure that a water quality category and associated issue descriptors are added to the customer complaint issues for capturing relevant information, including information that could signal contamination of the drinking water supply.</p>	<p>Complete WaterNSW demonstrated that it added a water quality category and associated issue descriptors to the customer complaint issues to enable the capture of relevant information. It also updated its Complaints Management Procedure to reflect Water Quality as a special category of complaint (ie, information that could signal contamination of the drinking water supply).</p>
2018-19	<p>By 31 December 2019, Water NSW should ensure that Customer Service Officers are trained in responding to customer complaints and issues relating to water quality, including distinguishing whether the customer knows whether they are receiving potable or non-potable water.</p>	<p>Complete WaterNSW demonstrated by providing a sample training acknowledge records that Customer Services Officers had completed training for responding to complaints related to water quality. The training records showed that the Customer Service Officers were trained to note whether the complaint was about potable or non-potable water. The Customer Services Officers, together with all WaterNSW staff, had also been required to complete mandatory training in respect of water quality.</p>

2018-20	Recommendation	Progress
	By 31 December 2019, Water NSW should review the roles and responsibilities in the Deed of Business Transfer (or the most recent variation of the Deed) for the conduct of the Conferred Functions specified in Schedule A of the licence, to clarify and confirm the roles and responsibilities with the Department of Industry – Water, and ensure it remains current in light of changes to the conferred functions.	<p>Ongoing</p> <p>WaterNSW demonstrated, through the provision of inter-agency correspondence, that it had commenced a review of roles and responsibilities for the conduct of the Conferred Functions specified in Schedule A of the Licence in conjunction with the Department of Planning, Industry and Environment – Water (DPIE Water). This review was being undertaken as part of a review of the Licence and a review of the Deed of Business Transfer between DPIE Water and WaterNSW, which is expected to be finalised by December.</p> <p>This recommendation is due for completion by 31 December 2019.</p>

Source: Cobbitty, *2019 Operational Audit of WaterNSW*, November 2019










Appendices

A Compliance grades

Table A1: Current compliance grades

Grades of compliance	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, *Audit Guideline Public Water Utilities*, July 2019, Figure 2.1

B Audit process

B.1 Audit programme

In developing our 5-year audit programs and annual audit scopes we apply IPART's *Compliance and Enforcement Policy, December 2017*. This policy sets out our risk-based regulatory model. Under this policy, we could:

- ▼ Focus on allocating resources to areas of higher risk
- ▼ Increase our efficiency
- ▼ Tailor our enforcement response.

We base our risk-based approach on evaluating the risk that each part of our regulatory function aims to reduce. We evaluate the risk 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 allocation of resources in proportion to the risk and complexity of regulated entities and behaviours.

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

B.2 2019 audit scope

We do not audit every licence clause each year, instead we adopt a risk-based audit approach. This means, we audit 'high risk' clauses more frequently and 'low risk' clauses less frequently. We audit all requirements of the licence at least once during the 5-year term of the licence. Audits are conducted in accordance with our *Audit Guideline – Public Water Utilities* (Audit Guideline) which is available on our website.

Following the risk-based approach, the audit scope for this year included licence obligations on:

- ▼ Water Source protection and conservation (Part 2) – Water Quality Management System, catchment management, catchment infrastructure works management, Calculating System Yield, and water conservation.
- ▼ Bulk Water storage and transmission (Part 3) – water management works construction, operation and maintenance, processing and managing Water Orders, and requirements relating to bulk water released to Local Water Utilities for drinking water purposes.
- ▼ Performance Standards (Part 4) – water supplied performance standards.

-
- ▼ Organisational systems management (Part 5) – Asset Management System and Environmental Management System.
 - ▼ Customer and stakeholder relations (Part 6) – accounting for water, external dispute resolution scheme, and undertaking an educative role in the community.
 - ▼ Performance monitoring and reporting (Part 7) – reporting in accordance with the licence and Reporting Manual.

Applying the risk-based approach used in the auditing program, we did not audit clauses from Part 1 (licence context and authorisations), Part 8 (Definitions and interpretation) or the Schedules this year.

We consulted with the Department of Planning, Industry and Environment (DPIE), Environment Protection Authority (EPA), NSW Ministry of Health (NSW Health), and the Natural Resources Access Regulator (NRAR) and sought public submissions in determining the scope of the audit. The audit scope is provided in Appendix C. All submissions from stakeholder agencies indicated stakeholders were generally satisfied that WaterNSW had met its obligations under the Licence relevant to their portfolio.

We had regard to the following comments in finalising the audit scope:

- ▼ DPIE requested that we audit clause 2.7.1 (water conservation), which was already in scope. DPIE also requested that we audit clause 6.4.1 (notification of changes to flow release patterns) and clause 6.5.4 (customer advisory groups). DPIE also provided feedback on WaterNSW's performance in relation to the Deed of Business Transfer.¹⁰ Following further discussions with DPIE we agreed further amendments of the audit scope were not required.
- ▼ The EPA identified no specific areas of interest for the audit scope.
- ▼ NSW Health identified the following areas of interest:
 - Management of chemical risk in the declared catchment area and generally the arrangements for incident management including communication around events that could affect public health (considered in the review of licence clause 2.1.2).¹¹
- ▼ NRAR provided comments on the effectiveness of the Memorandum of Understanding (MoU) between NRAR and WaterNSW under clause 6.17.1 of the Licence. NRAR considered that the relationship was generally working well.¹² We therefore did not include clause 6.17.1 in the 2019 audit scope. We will consider this clause in future audits.

We received no submissions from members of the public on the 2019 audit scope.

¹⁰ Letter to IPART, Jim Bentley, Chief Executive Officer – Water (Deputy Secretary), Department of Planning Industry and Environment, 19 July 2019.

¹¹ Letter to IPART, Dr Kerry Chant PSM, Deputy Secretary Population and Public Health and Chief Health Officer, NSW Health, 8 July 2019.

¹² Letter to IPART, Craig Knowles AM, Chair Natural Resources Access Regulator Board, 5 August 2019.

B.3 2019 audit plan

We engaged Cobbitty Consulting Pty Ltd (Cobitty) in partnership with Viridis Consultants Pty Ltd (Viridis) to undertake the 2019 audit of WaterNSW.

We held a project start-up meeting with the auditor on 17 July 2019 to agree on the project milestones, audit timing, and outline our expectations. We also held an audit inception meeting with WaterNSW and the auditor on the first day of the audit interviews, on 16 September 2019. At this meeting, expectations and protocols for the conduct of the audit were agreed. All parties adhered to the agreed protocols throughout the audit.

We required the auditor to undertake the following tasks.

1. Receive stakeholder submissions and comments for inclusion in the audit scope.
2. Prepare an information request (questionnaire) setting out all the requirements for information and evidence, at least two weeks prior to the commencement of audit interviews.
3. Review reports and documents provided by WaterNSW in response to the questionnaire.
4. Conduct interviews with WaterNSW staff at its offices.
5. Conduct field verification and assess the implementation of WaterNSW's systems and procedures.
6. Assess the level of compliance (according to our compliance grades) WaterNSW achieved for each of the identified obligations of the licence 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. Verify the calculation of performance indicators associated with requirements of the relevant licence and assess trends in performance arising from these indicators.
9. Provide drafts of the audit report to us and address comments from WaterNSW and us regarding draft audit findings.
10. Prepare a final report outlining audit findings (Appendix D).

Our auditor adopted a methodology consistent with *ISO 19011:2018 Guidelines for Auditing Management Systems*. This guideline defines the requirements of an audit, ensuring that it is conducted in accordance with an established and recognised audit protocol. Where appropriate, the auditor also sought guidance from *ASAE 3100 (2008) Compliance Engagements* (issued by the Auditing and Assurance Standards Board), *Auditing and Assurance Standard AUS 110 Assurance Engagements other than Audits or Review of Historical Financial Information*, and *International Standard on Quality Control ISQC 2009*.

Our auditor also carried out the audit according to our *Audit Guideline - Public Water Utilities, July 2019*.¹³ Under this guideline, the auditor can make recommendations or suggest opportunities for improvement.

Where we support an auditor's recommendation, we make our recommendation based on the auditor's recommendation. Our recommendations are summarised in section 1.1 of this report.

Where the auditor suggested opportunities for improvement, WaterNSW can decide whether to implement these suggestions. This approach should balance improved performance with the investment required to achieve it. That is, we want WaterNSW to first consider the pricing implications and value for money of continued improvement. As a consequence, 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.

Our auditor conducted audit interviews from 16 to 20 September 2019 at WaterNSW's office in Parramatta. On 19 September 2019, the auditor also undertook site visits to the following locations:

- ▼ Metering sites at the Farrer Memorial Agricultural high School, Calala
- ▼ Chaffey Dam.

The auditor had also planned to visit the Woronora Dam and the Lake Woronora catchments. However, these visits were cancelled due to heavy rainfall on the day prior leading to closure of the catchment. Instead, WaterNSW provided a briefing session in respect of the catchment management and related activities at the Parramatta offices.

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

¹³ Available on our website (www.ipart.nsw.gov.au) or at the following [link](#). The latest version of the Audit Guidelines was released in July 2019.



C 2019 audit scope

Note: The audit scope was prepared prior to contacting stakeholders (see Appendix B for stakeholder comments).

2019 operational audit scope Water NSW

2019 audit scope

This document sets out the 2019 operational audit scope for Water NSW.

This scope is based on IPART's 5-year audit program for Water NSW's 2017-2022 Operating Licence. Auditors should note any directions in the comments column of Table 2.

Audit period

The audit period is 1 July 2018 to 30 August 2019. Interviews for the audit will be held in September 2019.

Outstanding audit recommendations

Table 3 outlines outstanding audit recommendations. The auditor is required to review these recommendations to determine progress. We report on outstanding audit recommendations separately within IPART's operational audit report to the Minister.

Statement of compliance

The utility is required to provide a Statement of Compliance (SC), signed by the CEO and a Board Member, by 1 September. The SC is an exception based report that outlines any non-compliance with licence clauses during the previous financial year. It also identifies what remedial action has or is being taken with respect to these non-compliances.

The SC covers all licence clauses regardless of whether they are scheduled to be audited in that year. The SC may cause a late variation to the audit scope to allow non-compliances to be reviewed if necessary.

Interpretation

In the case of any discrepancies between the Water NSW Operating Licence 2017-2022 (licence) and the audit scope, the licence will prevail.

Table 1 Key

Requirement	Meaning
Audit/Review	Audit/review clause in 2019 audit
SC	Audit of this clause not required in the 2019 audit unless the utility's Statement of Compliance identifies a non-compliance or we become aware of other reasons to audit the clause.
NR	No requirement for audit.

Table 2 2019 Audit scope for Water NSW

Licence clause	Operating Licence obligation	2019 audit requirement	Comments for the auditor
1	Licence Context and authorisation		
1.1	Objectives of this Licence		
1.1.1	<p>This licence aims to:</p> <ul style="list-style-type: none"> a) provide transparent and auditable terms and conditions for Water NSW to lawfully undertake its activities to industry good-practice; b) recognise the interests of stakeholders within its Area of Operations; and c) impose the minimum regulatory burden on Water NSW by avoiding duplication or conflict with other regulatory instruments. <p><i>[Note: Consistent with the Act, the purpose of this Licence is to:</i></p> <ul style="list-style-type: none"> a) <i>specify the listed functions and other functions conferred upon Water NSW to which this Licence relates;</i> b) <i>authorise Water NSW to carry out the listed functions specified in this Licence and Conferred Functions;</i> c) <i>specify the areas and circumstances in which Water NSW is authorised to carry out the specified Listed Functions and Conferred Functions;</i> d) <i>set out the terms and conditions which apply to the conduct of the functions authorised by this Licence;</i> e) <i>make provision for the preparation of Operational Audits;</i> f) <i>include terms and conditions under which Water NSW is required to provide, construct, operate, manage and maintain efficient, co-ordinated and commercially viable systems and services to capture, store, release or supply water;</i> g) <i>include terms and conditions under which Water NSW is required to ensure that the systems and services meet the Performance Standards specified in this Licence in relation to water delivery, water quality, service interruptions or any other matters set out in this Licence;</i> 	NR	

Licence clause	Operating Licence obligation	2019 audit requirement	Comments for the auditor
h)	<p><i>with respect to a Declared Catchment Area – include terms and conditions under which Water NSW is required to compile indicators of the direct impact of Water NSW’s activities (including, but not limited to, the impact of energy used and waste generated) on the environment so as to provide information about its performance and enable reports to be prepared; and</i></p>		
i)	<p><i>specify other requirements as required and allowed for under the Act.</i></p>		
<p><i>In addition to sections 11 and 12 of the Act which specify matters that must be included in this Licence, sections 7, 15, 16, 21, 25, 31 and 60 of the Act provide for other terms and conditions to be included in the Licence.</i></p> <p><i>This Licence does not reproduce Water NSW’s statutory obligations in full. Water NSW’s licence obligations may be subject to other laws including the Water Management Act 2000 (NSW) and the Water Act 1912 (NSW).]</i></p>			
1.2	Licence authorisations	NR	
1.2.1	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, this Licence authorises Water NSW to undertake the following listed functions within its Area of Operations:</p> <ul style="list-style-type: none"> a) to capture and store water and to release water: <ul style="list-style-type: none"> i) to persons entitled to take the water, including release to regional towns; and ii) for any other lawful purpose, including the release of environmental water; b) to supply water to Sydney Water; c) to supply water to water supply authorities and to local councils or county councils prescribed by the Regulations; d) to supply water to persons referred to in section 7(1)(d) of the Act; e) to supply water to other persons and bodies, but under terms and conditions that prevent the person or body concerned from supplying the water for consumption by others within the State unless the person or body is authorised to do so by or under an Act; f) to construct, maintain and operate Water Management Works (including providing or constructing systems or services for supplying water); g) to protect and enhance the quality and quantity of water in Declared Catchment Areas; h) 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; 		

Licence clause	Operating Licence obligation	2019 audit requirement	Comments for the auditor
	<p>i) to undertake research on catchments generally, and in particular on the health of Declared Catchment Areas; and</p> <p>j) to undertake an educative role within the community.</p> <p><i>[Note: Clause 1.2.1 authorises all of Water NSW's listed functions referred to in section 7(1) of the Act, except for its listed function under section 7(1)(i) of the Act: to undertake flood mitigation and management. As a consequence, Water NSW may undertake flood mitigation and management only if it is authorised to do so under a different operating licence, a provision of the Act other than section 7, or under any other Act or law.]</i></p>		
1.2.2	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, this Licence authorises Water NSW, within its Area of Operations to:</p> <p>a) provide facilities or services that are necessary, ancillary or incidental to its Listed Functions; and</p> <p>b) conduct any business or activity (whether or not related to its Listed Functions) that it considers will further its objectives.</p>	SC	
1.2.3	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, this Licence authorises Water NSW, within its Area of Operations, to undertake the Conferred Functions specified in Schedule A.</p>	SC	
1.2.4	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence and to the maximum extent permissible by law, this Licence authorises Water NSW pursuant to section 15(4)(b) of the Act to exercise any function of a type referred to in section 15(2) of the Act, but only with the agreement of the Relevant Body.</p>	SC	
1.2.5	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, and to the maximum extent permissible by law, this Licence authorises Water NSW pursuant to section 31(1) of the Act, to exercise the functions set out in section 31(1) within its Area of Operations.</p>	SC	
1.2.6	<p>Despite anything in this clause 1.2, but subject to any terms and conditions, areas and circumstances specified elsewhere in this Licence, and to the maximum extent permissible by law, this Licence authorises Water NSW, pursuant to section 15(4)(a) of the Act, to carry out any of its functions outside of the State.</p>	SC	
1.2.7	<p>For the avoidance of any doubt, where this clause 1.2 authorises a function of Water NSW, that authorisation is intended to apply in respect of the Fish River Water Supply Scheme, to the maximum extent permissible by law.</p> <p><i>[Note: The intention behind clause 1.2.7 is that clauses 2.1.3-2.1.5, 3.1.1, 3.2.1, 4.2.1-4.2.3, 5.1.1, 5.1.2, 5.2.1, 5.2.2, 6.1.1-6.1.3, 6.3.1, 6.3.2, 6.5.1-6.5.5, 6.6.1-6.6.4, 6.8.1-6.8.4, 6.9.1-6.9.4, 6.10.1 and 6.10.2 apply in respect of the Fish River Water Supply Scheme, to the maximum extent permissible by law. See section 293(2) of the Water Management Act 2000 (NSW).]</i></p>	NR	

1.3	Term of this Licence					
1.3.1	The term of this Licence is 5 years from the Commencement Date.	NR				
1.4	Non-exclusive Licence					
1.4.1	This Licence does not prohibit another person from providing Services in the Area of Operations that are the same as, or similar to, the services provided by Water NSW, if the person is lawfully entitled to do so.	NR				
1.5	Making copies of this Licence available					
1.5.1	Water NSW must make this Licence available free of charge on its website for downloading by any person.	SC				
1.6	End of term review					
1.6.1	It is anticipated that a review of this Licence will commence in the first quarter of 2021 to investigate: a) whether this Licence is fulfilling its objectives; and b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence, (End of Term Review)	NR				
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.	NR				
1.7	Notices					
1.7.1	Any notice or other communication given under this Licence must be made in writing addressed to the intended recipient at the address shown below or the last address notified by the recipient.	SC				
	<table border="1"> <thead> <tr> <th>Water NSW</th> <th>IPART</th> </tr> </thead> <tbody> <tr> <td>The Chief Executive Officer Water NSW Level 14, 161-169 Macquarie St Parramatta NSW 2150</td> <td>The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW Level 15, 2-24 Rawson Place Sydney NSW 2000</td> </tr> </tbody> </table>	Water NSW	IPART	The Chief Executive Officer Water NSW Level 14, 161-169 Macquarie St Parramatta NSW 2150	The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW Level 15, 2-24 Rawson Place Sydney NSW 2000	
Water NSW	IPART					
The Chief Executive Officer Water NSW Level 14, 161-169 Macquarie St Parramatta NSW 2150	The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW Level 15, 2-24 Rawson Place Sydney NSW 2000					

2	Water Source protection and conservation		
2.1	Water Quality Management System		
2.1.1	Water NSW must maintain a Water Quality Management System in accordance with this clause 2.1.	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-01 2018-02 2018-03</p>
2.1.2	<p>With respect to Declared Catchment Areas, Water NSW must maintain a Water Quality Management System that is consistent with either:</p> <ul style="list-style-type: none"> 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. <p><i>[Note: It is generally expected that for the Declared Catchment Areas Water NSW will develop a Water Quality Management System consistent with the Australian Drinking Water Guidelines. However, where NSW Health considers appropriate, the application of those Guidelines may be amended or added to, to take account of Water NSW's circumstances and/or policy and practices within New South Wales regarding Drinking Water quality.</i></p> <p><i>It is generally expected that Water NSW will manage the Declared Catchment Areas and the associated Catchment Infrastructure Works in light of its knowledge of the whole system for the Supply of Drinking Water (including the Bulk Water Supply System associated with Declared Catchment Areas together with each system for treating, storing and supplying Drinking Water of each Customer to whom Water NSW Supplies water which is sourced from Declared Catchment Areas). That is, Water NSW should have adequate systems and processes in place to manage Bulk Water quality to its water Supply Customers, taking into account the implementation of planning and risk management across the whole Drinking Water Supply system.]</i></p>		Audit

2.1.3	<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> <ul style="list-style-type: none"> i) a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW); ii) the Australian Drinking Water Guidelines; or iii) any other requirements as specified or approved by NSW Health or IPART, <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 2.1.3(a):</p> <ul style="list-style-type: none"> i) the Australian Guidelines for Water Recycling; or ii) any other requirements as specified or approved by NSW Health or IPART. <p>(a) <i>[Note: It is generally expected that Water NSW will manage the water under its control in light of its knowledge of the downstream water supply system, including that of its Customers. Therefore the Water Quality Management System should be developed in consultation with the relevant Customers to whom it Supplies water.]</i></p>	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <p>2018-01 2018-02 2018-03</p>
2.1.4	<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>	Audit	<p>We last audited this clause in 2018. We assigned a Compliant Minor Shortcomings grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <p>2016-17-03 2016-17-04 2018-01 2018-02 2018-03</p>
2.1.5	<p>Water NSW must notify IPART and NSW Health, in accordance with the Reporting Manual, of any significant changes that it proposes to make to a Water Quality Management System.</p>	SC	<p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p>

2.2		Catchment management	
2.2.1	Water NSW must manage and protect the Declared Catchment Areas in a manner that is consistent with its objectives and functions under the Act, the Water Quality Management System required under Clause 2.1 of this Licence, the Asset Management System required under Clause 5.1 of this Licence, and the Environmental Management System required under Clause 5.2 of this Licence.	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06.</p>
2.3		Information on the Declared Catchment Areas	
2.3.1	<p>Water NSW must:</p> <ul style="list-style-type: none"> a) reasonably cooperate with the Appointed Auditor; b) publish information collected by Water NSW on water quality relevant to Declared Catchment Areas in accordance with the Reporting Manual; <p><i>[Note: For the avoidance of doubt, the above reference to information collected in accordance with the Reporting Manual is a reference to Water NSW's obligations in respect of the IPART water quality H1 and H2 indicators and water quality monitoring reports in the Reporting Manual]</i></p> <ul style="list-style-type: none"> c) provide data in relation to the Catchment Health Indicators to the Appointed Auditor, in accordance with the Reporting Manual; d) monitor, record and compile data on the Environmental Indicators relevant to Declared Catchment Areas; and e) report on the Environmental Indicators in accordance with the Reporting Manual. 	SC	
2.4		Catchment Infrastructure Works management	
2.4.1	Water NSW must ensure that, in Declared Catchment Areas, the Catchment Infrastructure Works are operated and managed consistently with the Design Criteria and the Asset Management System referred to in clause 5.1.	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06 2018-07</p>
2.4.2	Water NSW must, in accordance with the Reporting Manual make the Design Criteria available to the public free of charge on its website for downloading by any person.	SC	

2.5 Calculating System Yield			
2.5.1	Water NSW must recalculate the System Yield in respect of a Declared Catchment Area on the occurrence of any one or more of the following events: a) the conclusion of any drought event affecting the Declared Catchment Area; b) the commencement of any modification or augmentation to the Catchment Infrastructure Works or Customers' infrastructure, that will have a significant impact on Water NSW's Supply of water in respect of the Declared Catchment Area; c) any material change to the operating rules of the Catchment Infrastructure Works in respect of the Declared Catchment Area; or d) any material change to the Design Criteria in respect of the Declared Catchment Area.	Audit	This is the first audit of this clause in this licence period.
2.5.2	In accordance with the Reporting Manual, Water NSW must advise the Minister: 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 b) if Water NSW considers that future demand for Bulk Water may exceed the System Yield and when this exceedance might occur.	Audit	This is the first audit of this clause in this licence period.
2.5.3	As soon as practicable after advising the Minister of any changes to the System Yield under clause 2.5.2, Water NSW must, in accordance with the Reporting Manual, make details of those changes and the reasons for those changes available free of charge on its website for downloading by any person.	Audit	This is the first audit of this clause in this licence period.
2.6 Reviewing the model for the System Yield			
2.6.1	By the first quarter of 2021, Water NSW must engage a suitably qualified independent expert to: a) review its modelling and procedures for calculating the System Yield to ensure that it reflects good industry practice; b) test the robustness of the modelling, the key assumptions used in the modelling, and the process for calculating the System Yield, including the appropriate frequency of yield re-calculation and the appropriateness of the trigger events in clause 2.5.1; and c) advise Water NSW on whether it should re-calculate the System Yield based on the findings of the test conducted under clause 2.6.1(b).	NR	
2.6.2	Water NSW must consult with: a) Customers who are Supplied water from the Declared Catchment Area, including Sydney Water; b) stakeholders and regulators as agreed with, or directed by, IPART; and c) any other persons that Water NSW reasonably expects to have an interest in the review of the modelling under clause 2.6.1, regarding the review of the modelling under clause 2.6.1, and provide the results of the consultation to the suitably qualified independent expert.	NR	
2.6.3	The review of the model for the System Yield must be completed by 30 June 2021 and reported to IPART in accordance with the Reporting Manual.	NR	

2.7 Water conservation			
2.7.1	By 1 November 2018, or by a later date as approved by IPART, Water NSW must submit to IPART, a report outlining Water NSW's water conservation strategy in relation to its operations under this Licence (Water Conservation Strategy).	Audit	This is the first audit of this clause in this licence period.
2.7.2	The Water Conservation Strategy must include: a) identification and documentation of existing water conservation activities; b) a process for identifying additional options for conserving water; c) a process for comparing these options; and d) a process for selecting options for implementation.	Audit	This is the first audit of this clause in this licence period.
2.7.3	By 1 September 2019, or by a later date as approved by IPART, Water NSW must develop and submit to IPART a water conservation work program using the process set out in the Water Conservation Strategy	NR	
2.8 Research on catchments			
2.8.1	Water NSW must maintain a program of research for each Declared Catchment Area which: a) relates to catchments within that Declared Catchment Area generally and in particular their health; b) is consistent with its objectives under section 6 of the Act; and c) assists Water NSW to discharge its functions under sections 7(1)(g) and 7(1)(h) of the Act.	SC	
2.8.2	Water NSW must report on its research programs referred to in clause 2.8.1 in accordance with the Reporting Manual.	SC	
3 Bulk Water storage and transmission			
3.1 Construct, maintain and operate Water Management Works			
3.1.1	Water NSW must construct, maintain and operate its Water Management Works in accordance with its Asset Management System referred to in clause 5.1.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06 2018-07
3.2 Water Supply			
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.	SC	
3.3 CSR Water			
3.3.1	For CSR Water, Water NSW must take all reasonable steps to: a) process all Water Orders promptly and efficiently; and b) manage Water Orders to ensure water is Delivered to its Customers in a timely manner.	Audit	This is the first audit of this clause in this licence period.

3.4	Bulk Water released to Local Water Utilities for Drinking Water purposes		
3.4.1	Water NSW must maintain a register of all Local Water Utilities: a) for which Water NSW maintains a Water Allocation Account; and b) to which Water NSW releases water that will be used for the purposes of Drinking Water (Local Water Utility Customers), (LWU Register).	Audit	This is the first audit of this clause in this licence period.
3.4.2	The LWU Register must include contact details for each Local Water Utility Customer, and the Water Source and approximate location from which the Local Water Utility Customer Extracts water.	Audit	This is the first audit of this clause in this licence period.
3.4.3	Water NSW must maintain and implement a procedure for providing information to Local Water Utilities (LWU Information Request Procedure). Water NSW must follow the LWU Information Request Procedure when any Local Water Utility requests information to inform that utility's Drinking Water quality assurance program. Water NSW must maintain the LWU Information Request Procedure during the term of this Licence.	Audit	This is the first audit of this clause in this licence period.
3.4.4	Water NSW's LWU Information Request Procedure must: a) describe how a Local Water Utility is to request information; b) describe how Water NSW will respond to the request in a timely manner; and c) define any fees and charges that may be charged by Water NSW to recover reasonable costs incurred for responding to an information request, how these will be calculated, and how they are to be paid.	Audit	This is the first audit of this clause in this licence period.
3.4.5	Water NSW must make details of the LWU Information Request Procedure available free of charge on its website for downloading by any person.	Audit	This is the first audit of this clause in this licence period.
3.4.6	By 31 December 2018, Water NSW must, in consultation with NSW Health, the Local Water Utility Customers on the LWU Register and its customer advisory groups established under clause 6.5, complete a review of its water quality monitoring, of water released by Water NSW to Local Water Utilities.	Audit	This is the first audit of this clause in this licence period. We will contact NSW Health to comment on Water NSW's performance against this clause.
3.4.7	By 30 June 2019, Water NSW must provide IPART with a report detailing the outcomes of the review referred to in clause 3.4.6. The report should describe measures that were identified and the timing by which they could be implemented. Any barriers to immediate implementation of identified measures, including limitations to funding, should be outlined in the report. <i>[Note: The purpose of clause 3.4 is to ensure that there are mechanisms in place for Water NSW to share information which it currently has, or is best placed to collect with interested Local Water Utilities, where that information could usefully inform a Local Water Utility's Drinking Water quality assurance program.]</i>	Audit	This is the first audit of this clause in this licence period.
4	Performance Standards		
4.1	Requirement to meet Performance Standards		
4.1.1	Water NSW is required to ensure that its systems and services meet the Performance Standards specified in this chapter.	SC	

4.2 Water Supplied Performance Standards			
4.2.1	The Performance Standards set out in paragraphs 4.2.2 and 4.2.3 apply in respect of the Supply of water by Water NSW.	NR	
4.2.2	Water NSW must manage the quality of water Supplied to its Customers in accordance with the relevant Water Quality Management System required under clause 2.1.2 or 2.1.3 (Supply Water Quality Performance Standard).	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
4.2.3	Water NSW must manage service interruptions in accordance with the Asset Management System required under clause 5.1.1 (Supply Service Interruption Performance Standard).	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06
4.3 CSR Water Performance Standards			
4.3.1	The Performance Standards set out in clause 4.3.2 - 4.3.7 apply to Water NSW with respect to CSR Water.	NR	
CSR Water Delivery Performance Standard A		SC	
4.3.2	Water NSW must ensure that: a) 99% of Customers who place a Non-complying Water Order are contacted within one working day to rectify that order; and b) this is calculated as a percentage of all Non-complying Water Orders placed in the financial year.		
CSR Water Delivery Performance Standard B		SC	
4.3.3	Water NSW must ensure that: a) 99% of Water Orders are Delivered within one day of the scheduled day of Delivery; and b) this is calculated as a percentage of all complying Water Orders placed in the financial year. <i>[Note: The scheduled day of Delivery takes into account the period of required notice specified in Water Management Work approvals, licences, or entitlements. This is measured by Complaints and/or if Water NSW identifies a Delivery delay, e.g. through its staff, systems or otherwise identifies or becomes aware of a Delivery delay.]</i>		
CSR Water Service Interruptions Performance Standard		SC	
4.3.4	Water NSW must ensure that: a) 100% of Water Orders rescheduled, are rescheduled in consultation with an affected Customer within one working day of an expected water shortage, or other delivery delay; and b) this is calculated as a percentage of all Water Orders rescheduled in the financial year due to an expected shortage or Delivery delay.		

4.3.5	<p>CSR Water Account Processing Performance Standard A</p> <p>Water NSW must ensure that no less than 90% of complying Temporary Trades within the State in the financial year are processed within five working days of Water NSW's receipt of a correct application and fee.</p>	SC	
4.3.6	<p>CSR Water Account Processing Performance Standard B</p> <p>Water NSW must ensure that no less than 90% of Interstate Temporary Trades (except to South Australia) in the financial year are processed within 10 working days of Water NSW's receipt of a correct application and fee.</p>	SC	
4.3.7	<p>CSR Water Account Processing Performance Standard C</p> <p>Water NSW must ensure that no less than 90% of Interstate Temporary Trades to South Australia in the financial year are processed within 20 working days of Water NSW's receipt of a correct application and fee.</p>	SC	

5	Organisational systems management		
5.1	Asset Management System		
5.1.1	Water NSW must at all times maintain a Management System for carrying out its functions authorised under this Licence that is consistent with the Australian Standard AS ISO 55001:2014 Asset Management – Management systems – Requirements or other standard approved by IPART on request by Water NSW (the Asset Management System).	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06
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.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-07
5.2	Environmental Management System		
5.2.1	Water NSW must at all times maintain an Environmental Management System for carrying out the functions authorised under this Licence that is consistent with the Australian/New Zealand Standard AS/NZS ISO 14001:2016: Environmental management systems – Requirements with guidance for use or other standard approved by IPART, on request by Water NSW (the Environmental Management System).	Audit	This is the first audit of this clause in this licence period.
5.2.2	Water NSW must fully implement the Environmental Management System and carry out all relevant activities in accordance with the Environmental Management System.	Audit	This is the first audit of this clause in this licence period.
6	Customer and stakeholder relations		
6.1	Customer Supply Agreements – Customers other than Sydney Water		
6.1.1	Water NSW must establish and maintain agreements with each of its Customers to whom it Supplies water (except Sydney Water), which agreements must set out the terms and conditions for the Supply of water (Customer Supply Agreements). <i>[Note: Under section 25 of the Act, Water NSW is required to enter into arrangements with Sydney Water regarding the Supply of water by Water NSW to Sydney Water. Therefore, this Licence does not regulate the Supply arrangements with Sydney Water under section 25 of the Act.]</i>	SC	
6.1.2	Water NSW must only Supply water to these Customers in accordance with the terms and conditions of these Customer Supply Agreements.	SC	

6.1.3	The terms and conditions of the Customer Supply Agreements must, at a minimum, include provisions addressing: a) the standard of water quality Supplied by Water NSW; b) the continuity of the water Supplied by Water NSW (that is, provisions relating to interruptions, disconnections and reconnections to Supply); c) any metering arrangements; d) the fees and charges to be paid by the Customers for the Supply of water to them; e) dispute resolution and Complaints handling procedures; and f) in the case of a Customer Supply Agreement with a Customer referred to in clause 1.2.1(e), terms and conditions preventing the Customer concerned from supplying the water for consumption by others within the State unless the Customer is authorised to do so by or under an Act.	SC	
6.2	Accounting for water		
6.2.1	Water NSW must maintain a Water Allocation Account for each Customer that holds a Water Licence.	Audit	This is the first audit of this clause in this licence period.
6.3	Water metering and monitoring		
6.3.1	Water NSW must determine the volume of water Extracted by, or Supplied to, each of its Customers, at least annually, for the purpose of accurate account management, billing and reporting.	SC	
6.3.2	Prior to Water NSW operating, replacing, repairing, maintaining, removing, connecting, disconnecting or otherwise modifying Metering Equipment it does not own, it must obtain the agreement of the owner of that equipment. <i>[Note: In accordance with section 31(1) of the Act and clause 1.2.5 of this Licence, Water NSW is authorised to operate, replace, repair, maintain, remove, connect, disconnect or modify Metering Equipment that Water NSW does not own. Water NSW must only exercise this authority in accordance with this condition.]</i>	SC	
6.4	Advance notification of changes to flow release patterns		
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.	SC	
6.5	Customer advisory groups		
6.5.1	Water NSW must establish and maintain area-based advisory groups representing a broad cross-section of its Customers for those areas (Customer Advisory Group).	SC	
6.5.2	Water NSW must regularly consult with the area-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).	SC	
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.	SC	

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 area and include at least one Customer representing each of the following categories (where there are Customers in this category for the area associated with the Customer Advisory Group):</p> <ul style="list-style-type: none"> a) stock and domestic water users; b) Regulated River water users; c) Unregulated River water users; d) groundwater users; e) environmental water users; f) industrial and commercial water users; g) Local Water Utilities; h) Major Utilities; i) small water users based on their Water Licence volume; j) medium water users based on their Water Licence volume; k) large water users based on their Water Licence volume ; and l) Aboriginal cultural heritage water users. 	SC	
6.5.5	<p>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.</p>	SC	
6.6 Customer Advisory Group Charter			
6.6.1	<p>Water NSW, in consultation with Customers representing all of the categories in clause 6.5.4, must for the term of this Licence, establish and maintain a Customer advisory group charter in accordance with this clause 6.6 (Customer Advisory Group Charter). Water NSW may have one or more Customer Advisory Group Charters, for different Customer Advisory Groups, as it deems appropriate.</p>	SC	
6.6.2	<p>The Customer Advisory Group Charter must address all of the following issues:</p> <ul style="list-style-type: none"> a) the role of the Customer Advisory Group; b) how members and the chair of the Customer Advisory Group will be appointed; c) the term for which members are appointed; d) information on how the Customer Advisory Group will operate; e) a description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred; f) procedures for communicating the outcomes of the Customer Advisory Groups' work to the public; g) procedures for monitoring issues raised at meetings of the Customer Advisory Groups and ensuring appropriate follow-up of those issues; h) procedures for amending the charter; and i) funding and resourcing of the Customer Advisory Groups by Water NSW. 	SC	

6.6.3	Water NSW or any member of the Customer Advisory Groups may propose any amendments to the Customer Advisory Group Charter(s). However, such amendments will not be effective until they have been approved by the relevant Customer Advisory Group.	SC	
6.6.4	Water NSW must make the Customer Advisory Group Charter available free of charge on its website for downloading by any person.	SC	
6.7	Customer Service Charter		
6.7.1	Water NSW must, in consultation with relevant Customers and/or Customer Advisory Groups, establish and maintain a Customer service charter (Customer Service Charter) in accordance with this clause 6.7. Water NSW may have one or more Customer Service Charters, for different categories of Customers, as it deems appropriate. Where Water NSW has established a Customer Supply Agreement with a Customer (or category of Customers), or where Water NSW has entered into an arrangement with Sydney Water under section 25 of the Act, a Customer Service Charter covering that Customer or category of Customers is not required.	SC	
6.7.2	The Customer Service Charter(s) must set out the mutual responsibilities of Water NSW and its Customers consistently with this Licence, the Act, the <i>Water Management Act 2000</i> (NSW), the <i>Water Act 1912</i> (NSW) and any other applicable law.	SC	
6.7.3	Water NSW must make the Customer Service Charter available free of charge on its website for downloading by any person.	SC	
6.8	Code of Practice on Payment Difficulties		
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.	SC	
6.8.2	The Code of Practice on Payment Difficulties must: <ul style="list-style-type: none"> 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; 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); 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 d) include procedures for self-identification, identification by community welfare organisations and identification by Water NSW of Customers experiencing financial hardship. 	SC	
6.8.3	Water NSW must set out details of the Code of Practice on Payment Difficulties in the Customer Service Charter, or, where a Customer Supply Agreement is established in respect of a Customer, in that Customer Supply Agreement. <i>[Note: This requirement does not apply to any arrangements with Sydney Water under section 25 of the Act.]</i>	SC	

6.8.4	Water NSW must provide, free of charge, information on the Code of Practice on Payment Difficulties: a) to Customers, except Sydney Water, at least once annually with their Bills; and b) 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 c) on its website for downloading by any person	SC	
6.9	Internal Complaints Handling Procedure		
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: Guidelines for complaints management in organizations (AS/NZS 10002:2014) or other standard approved by IPART on request by Water NSW (Internal Complaints Handling Procedure).	SC	
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.	SC	
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.	SC	
6.9.4	Water NSW must make the information concerning internal Complaints handling referred to in clause 6.9.3 available to any person, free of charge, on its website for downloading.	SC	
6.10	External dispute resolution scheme		
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.	Audit	This is the first audit of this clause in this licence period.
6.10.2	Water NSW must: 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 to any person, free of charge, on its website for downloading.	Audit	
6.11	Educative role		
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 Act, and report on its activities in accordance with the Reporting Manual.	Audit	
6.12	Code of Conduct with WIC Act Licensees		
6.12.1	Water NSW must use reasonable endeavours to cooperate with any WIC Act Licensee that seeks to establish with Water NSW a code of conduct required under a licence under the WIC Act.	SC	
6.12.2	Where the Minister administering the WIC Act has established a code of conduct under clause 25 of the WIC Regulation, Water NSW will be taken to have satisfied its obligation under clause 6.12.1 by applying the water industry code of conduct established by the Minister to the relevant WIC Act Licensee.	NR	

6.13	Memorandum of Understanding with NSW Health		
6.13.1	<p>Water NSW must:</p> <p>a) maintain a memorandum of understanding with the Secretary of the Ministry of Health entered into under section 21(1) of the Act; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.13.1(a).</p> <p><i>[Note: Clause 6.13.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	SC	We will contact NSW Health to comment on Water NSW's performance against this clause.
6.13.2	The purpose of the memorandum of understanding referred to in clause 6.13.1 is to form the basis for cooperative relationships between the parties to the memorandum of understanding and particularly to recognise the role of NSW Health in providing advice to the NSW Government in relation to water quality standards and public health, with respect to CSR Water and the Supply of water by Water NSW.	NR	
6.13.3	<p>The memorandum of understanding referred to in clause 6.13.1 must include arrangements for Water NSW to report to NSW Health information on any events, in relation to Water NSW's systems or service that might impact on public health.</p> <p><i>[Note: Clause 6.13.2 does not limit the matters which may be included in the memorandum of understanding with NSW Health.]</i></p>	SC	We will contact NSW Health to comment on Water NSW's performance against this clause.
6.13.4	Water NSW must publish on its website for downloading by any person, the memorandum of understanding maintained with NSW Health under clause 6.13.1(a).	SC	
6.14	Memorandum of Understanding with Environment Protection Authority		
6.14.1	<p>Water NSW must:</p> <p>a) maintain the memorandum of understanding with the Environment Protection Authority entered into under section 21(1) of the Act; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.14.1(a).</p> <p><i>[Note: Clause 6.14.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	SC	We will contact the Environment Protection Authority to comment on Water NSW's performance against this clause.
6.14.2	<p>The purpose of the memorandum of understanding referred to in clause 6.14.2 is to form the basis for cooperative relationships between the parties to the memorandum of understanding and particularly to recognise the role of the Environment Protection Authority as the environment regulator of New South Wales.</p> <p><i>[Note: Clause 6.14.2 does not limit the matters which may be included in the memorandum of understanding with the Environmental Protection Agency.]</i></p>	NR	
6.14.3	Water NSW must publish on its website, for downloading by any person, the memorandum of understanding maintained with the Environmental Protection Authority under clause 6.14.1(a).	NR	

6.15 Memorandum of Understanding with Department of Planning and Environment		
6.15.1	<p>Water NSW must:</p> <p>a) use its best endeavours to establish and maintain a memorandum of understanding with the Department of Planning and Environment; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.15.1(a).</p> <p><i>[Note: Clause 6.15.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	<p>SC</p> <p>We will contact the Department of Planning and Environment to check that Water NSW continues to comply with the Memorandum of Understanding.</p>
6.15.2	<p>The purpose of the memorandum of understanding referred to in clause 6.15.1 is to form the basis for a cooperative relationship between the parties to the memorandum regarding the role of Water NSW for the review and implementation of the Metropolitan Water Plan.</p> <p><i>[Note: Clause 6.15.2 does not limit the matters which may be included in the memorandum of understanding with the Department of Planning and Environment.]</i></p>	<p>NR</p>
6.16 Roles and Responsibilities with Department of Primary Industry		
6.16.1	<p>Water NSW must:</p> <p>a) agree in writing with the Department of Primary Industry the roles and responsibilities regarding the conduct of Conferred Functions specified in Schedule A of this Licence; and</p> <p>b) comply with the agreement established under clause 6.16.1(a).</p> <p><i>[Note: Clause 6.16.1 does not limit the persons with whom Water NSW may enter into an agreement or the matters which may be contained in the agreement.]</i></p>	<p>SC</p> <p>We will contact the Department of Primary Industry to comment on Water NSW's performance against this clause.</p>
6.16.2	<p>By 30 June 2018, Water NSW must publish on its website, for downloading by any person, a statement setting out the roles and responsibilities required under clause 6.16.1(a).</p> <p><i>[Note: The statement may also include roles and responsibilities agreed with the Water Administration Ministerial Corporation or any other relevant Government departments or agencies.]</i></p>	<p>SC</p>
6.17 Memorandum of Understanding with Natural Resources Access Regulator		
6.17.1	<p>Water NSW must:</p> <p>a) use its best endeavours to establish and maintain a memorandum of understanding with the Natural Resources Access Regulator; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.17.1(a).</p> <p><i>[Note: Clause 6.17.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	<p>NR</p> <p>This is a new clause which was included in the licence on 13 February 2019.</p>
6.17.2	<p>The purpose of the memorandum of understanding referred to in clause 6.17.1 is to form the basis for an ongoing cooperative relationship between the parties to the memorandum to assist in meeting their joint responsibilities and principal objectives of water supply and compliance and enforcement.</p> <p><i>[Note: Clause 6.17.2 does not limit the matters which may be included in the memorandum of understanding with the Natural Resources Access Regulator.]</i></p>	<p>NR</p>

7	Performance monitoring and reporting		
7.1	Operational Audits		
7.1.1	IPART may annually, or from time to time as occasion requires, undertake, or may appoint an Auditor to undertake, an audit on Water NSW's compliance with: a) this Licence; b) the Reporting Manual; or c) any other matters required by the Minister. (Operational Audit).	NR	
7.1.2	Water NSW must provide to IPART or the Auditor all information in Water NSW's possession, or under Water NSW's custody or control, which is necessary or convenient for the conduct of the Operational Audit.	SC	
7.1.3	Without limiting clause 7.1.2, Water NSW must provide to IPART or the Auditor any information necessary or convenient for the conduct of the Operational Audit which IPART or the Auditor requests in writing, within any reasonable period of time specified by IPART or the Auditor in writing.	SC	
7.1.4	For the purpose of any Operational Audit or verifying a report on an Operational Audit, Water NSW must, within a reasonable period of time from receiving a request from IPART or the Auditor, permit IPART or the Auditor to: a) access any Works, premises or offices occupied by Water NSW; b) carry out inspections, measurements and tests on, or in relation to, any such Works, premises or offices; c) take on to any such premises, Works or offices any person or equipment necessary for the purpose of performing the Operational Audit or verifying any report on the Operational Audit; d) inspect and make copies of, and take extracts from, any books and records of Water NSW that are maintained in relation to the performance of Water NSW's obligations under this Licence (including the Reporting Manual); and e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with Water NSW, including Water NSW's officers and employees. <i>[Note: Water NSW is required under section 60 of the Act to pay to the Treasurer the cost (as certified by IPART) involved in and in connection with carrying out the Operational Audit of Water NSW.]</i>	SC	
7.2	Reporting in accordance with this Licence and the Reporting Manual		
7.2.1	Water NSW must comply with its reporting obligations set out in this Licence and in the Reporting Manual, including in relation to: a) water source protection and conservation; b) Bulk Water storage and transmission; c) Performance Standards; d) organisational systems management; e) Customer and stakeholder relations; and f) performance monitoring and reporting including: i) IPART performance indicators; and ii) the National Water Initiative Performance Indicators.	Audit	This is the first audit of this clause in this licence period.
7.2.2	Water NSW must maintain sufficient record systems that enable it to report accurately in accordance with clause 7.2.1.	Audit	This is the first audit of this clause in this licence period.

7.2.3	In the case of any ambiguity in the interpretation or application of any requirements in the Reporting Manual, IPART's interpretation or assessment will prevail.	NR	
	<i>[Note: The Reporting Manual identifies the details of when, what, to whom and how Water NSW must report to IPART and NSW Health. The Reporting Manual also specifies what and how reports and other information must be made publicly available.]</i>		
7.3	Provision of information to IPART and Auditor		
7.3.1	Water NSW must provide IPART or an Auditor with information relating to the performance of any of Water NSW's obligations under clause 7.2 (including providing IPART with physical and electronic access to the records required to be kept under clause 7.2) within a reasonable period of time from Water NSW receiving a request from IPART for that information.	SC	
7.3.2	Water NSW must provide IPART or an Auditor with such information as is reasonably required to enable IPART or an Auditor to conduct any review or investigation of Water NSW's obligations under this Licence within a reasonable period of time from Water NSW receiving a request from IPART for that information.	SC	
7.3.3	If Water NSW contracts out any of its activities to any person (including a subsidiary), it must take all reasonable steps to ensure that, if required by IPART, or any Auditor, any such persons provide information and do the things specified in this clause 7.3 as if that person were Water NSW.	SC	
7.3.4	Where this Licence requires Water NSW to provide information to IPART or an Auditor that is information to which: a) section 24FF of the IPART Act applies; or b) section 24FF of the IPART Act does not apply but IPART or the Auditor has agreed to treat the information as though section 24FF of the IPART Act applies to that information, Water NSW must, to the maximum extent permitted by the law, provide that information even if it is confidential.	SC	

Table 3 Recommendations / outstanding items from previous audits

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2016-17-03	Water Quality Management System clause 2.1.2 in the previous <i>Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017</i> (equivalent clause 2.1.4 in current licence)	By 30 June 2018, Water NSW undertakes a risk assessment to determine appropriate strategies and controls to address any current reliability concerns or potential failure of all such mixer or aerator assets within its portfolio. (SCA licence clause 2.1.2)	Our auditor noted that Water NSW had undertaken a workshop to identify the risks associated with its aerator assets. However, Water NSW had not fully documented appropriate strategies and controls for managing these risks, as follows: <ul style="list-style-type: none"> ▼ there is no planned maintenance task relating to aerator pipework and diffusers ▼ Water NSW inaccurately referenced condition based maintenance as a maintenance strategy as Water NSW does not currently undertake any condition based maintenance for the diffusers and pipework ▼ Water NSW had not documented the operational control to monitor the diffuser bubble pattern. 	Auditor to check completeness.
2016-17-04	Water Quality Management System clause 2.1.2 in the previous <i>Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017</i> (equivalent clause 2.1.4 in current licence)	By 31 December 2018, Water NSW implements appropriate strategies and controls to address any reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.	This recommendation is continuing until Water NSW has completed Recommendation 2016-17-03. The appropriate strategies and controls can be implemented after they have first been determined/documented.	Auditor to check completeness.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2018-01	<p>Water Quality Management System</p> <ul style="list-style-type: none"> ▼ clause 2.1.1 ▼ clause 2.1.3 ▼ clause 2.1.4 <p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 	By 30 September 2019, Water NSW should review and amend its Water Quality Management System to ensure that each water category covered by the WQMS addresses each element, component and activity of the Australian Drinking Water Guidelines framework.	New <u>priority</u> recommendation from 2018 audit.	<p>Auditor to check progress noting that the due date is outside of this audit period.</p> <p>Addressing this recommendation should improve Water NSW's compliance with clause 2.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 2.1.1.</p>
2018-02	<p>Water Quality Management System</p> <ul style="list-style-type: none"> ▼ clause 2.1.1 ▼ clause 2.1.3 ▼ clause 2.1.4 <p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 	By 30 September 2019, Water NSW should document its procedures and process to manage materials and chemicals used in its system where the water is supplied for a drinking water end-use.	New <u>priority</u> recommendation from 2018 audit.	<p>Auditor to check progress noting that the due date is outside of this audit period.</p> <p>Addressing this recommendation should improve Water NSW's compliance with clause 2.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 2.1.1.</p>
2018-03	<p>Water Quality Management System</p> <ul style="list-style-type: none"> ▼ clause 2.1.1 ▼ clause 2.1.3 ▼ clause 2.1.4 <p>Water Supply</p>	By 31 December 2019, Water NSW should review the operational and process control procedures underpinning its Water Quality Management System and:	New <u>priority</u> recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	<ul style="list-style-type: none"> ▼ clause 3.2.1 	<ul style="list-style-type: none"> a) identify the required operational procedures from catchment to consumer for processes and activities under its control b) develop a plan to compile this information c) commence implementation of the plan and document operational procedures for all processes and activities (eg, preventive measures, operational monitoring and verification procedures and maintenance requirements), and d) commence staff training to ensure staff are trained and proficient to implement the new operational procedures. 		Addressing this recommendation should improve Water NSW's compliance with clause 2.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 2.1.1.
2018-04	Water Quality Management System <ul style="list-style-type: none"> ▼ clause 2.1.2 	By 31 December 2019, Water NSW should review the manner in which it conducts all water utility risk assessments to ensure it meets the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.	New <u>priority</u> recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-05	Research on catchments <ul style="list-style-type: none"> ▼ clause 2.8.1 	By 31 December 2019, Water NSW should explicitly identify how the research program for each Declared Catchment Area relates to catchment management and catchment health.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-06	Catchment management <ul style="list-style-type: none"> ▼ clause 2.2.1 Catchment infrastructure works management	By 31 December 2019, Water NSW should revise the Asset Management System to ensure it is consistent with clause 5.1.1 in particular:	New <u>priority</u> recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	<ul style="list-style-type: none"> ▼ clause 2.4.1 <p>Construct, operate and maintain Water Management Works</p> <ul style="list-style-type: none"> ▼ clause 3.1.1 <p>Water Supplied Performance Standards</p> <ul style="list-style-type: none"> ▼ clause 4.2.3 <p>Asset Management System</p> <ul style="list-style-type: none"> ▼ clause 5.1.1 	<ul style="list-style-type: none"> ▼ the scope accurately reflects the licence requirements including the Design Criteria, and related requirements for water supply security, robustness and reliability are adequately incorporated within the system ▼ the correct stakeholders have been identified and that stakeholder requirements including those relating to supply interruptions are reflected ▼ identify whether any elements of the Asset Management System do not meet the requirements and intent of the Strategic Asset Management Plan and if found, make a plan to revise the relevant elements to ensure that the Asset Management System meets the requirements and intent of the Strategic Asset Management Plan ▼ revise the Fish River Water Supply Scheme Incident Management Plan so that it reflects stakeholder requirements, and ▼ identify if any other processes or documents for managing supply interruptions should be revised to meet stakeholder requirements and develop a plan and timeframe for revising these processes and documents. 		<p>Addressing this recommendation should improve Water NSW's compliance with clause 5.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 5.1.1.</p>
2018-07	<p>Catchment infrastructure works management</p> <ul style="list-style-type: none"> ▼ clause 2.4.1 	<p>By 31 December 2019, Water NSW should provide an updated plan for completion of Asset Class Standards with appropriate owners assigned to each action in the plan.</p>	<p>New recommendation from 2018 audit.</p>	<p>Auditor to check progress noting that the due date is outside of this audit period.</p>

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	<p>Construct, operate and maintain Water Management Works</p> <ul style="list-style-type: none"> ▼ clause 3.1.1 <p>Asset Management System</p> <ul style="list-style-type: none"> ▼ clause 5.1.2 			
2018-08	<p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 <p>Customer Supply Agreements – Customers other than Sydney Water</p> <ul style="list-style-type: none"> ▼ clauses 6.1.1 and 6.8.3 	<p>By 31 December 2019, Water NSW should ensure that all Customer Supply Agreement templates and relevant supporting processes are reviewed to ensure:</p> <ul style="list-style-type: none"> ▼ relevant and current regulatory instruments are included, including references to the Plumbing Code of Australia, and all requirements of clause 6.1.3 and clause 6.8.3 ▼ templates are kept under regular review ▼ users of the templates are prompted to check the most up to date version of the licence and other regulatory instruments, and ▼ users of Customer Supply Agreements, including the legal representatives who review them, are trained to use the template and do not use previous agreements. 	<p>New recommendation from 2018 audit.</p>	<p>Auditor to check progress noting that the due date is outside of this audit period.</p> <p>Addressing this recommendation should improve Water NSW's compliance with clause 6.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.1.</p>
2018-09	<p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 	<p>By 1 June 2019, commence re-negotiation of the Customer Supply Agreement with Wingecarribee Council, with the intent of including water quality reporting that meets the sampling and monitoring capability of the supply system.</p>	<p>New recommendation from 2018 audit.</p> <p>Recommendation related to material non-compliance.</p>	<p>Audit to check completeness.</p>

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	Customer Supply Agreements – Customers other than Sydney Water ▼ clause 6.1.2			Addressing this recommendation should improve Water NSW's compliance with clause 6.1.2. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.2.
2018-10	Water Supply ▼ clause 3.2.1 Customer Supply Agreements – Customers other than Sydney Water ▼ clauses 6.1.2 and 6.1.3	By 31 December 2019, Water NSW should undertake a risk-based review of Customer Supply Agreements across all types of customers (including all customers who are supplied drinking water) to ensure that the supply of water meets the terms and conditions of those agreements.	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period. Addressing this recommendation should improve Water NSW's compliance with clause 6.1.2. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.2.
2018-11	Water Supply ▼ clause 3.2.1 Customer Supply Agreements – Customers other than Sydney Water ▼ clause 6.1.2	By 30 June 2020, Water NSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (Recommendation 2017-18-10).	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
				Addressing this recommendation should improve Water NSW's compliance with clause 6.1.2. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.2.
2018-12	Water metering and monitoring ▼ clause 6.3.1	By 30 September 2019, Water NSW should set objectives for the accuracy of water take determination with respect to billing, account management and reporting.	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period.
2018-13	Water metering and monitoring ▼ clause 6.3.1	By 31 December 2019, Water NSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period. .
2018-14	Water metering and monitoring ▼ clause 6.3.2	By 31 December 2019, Water NSW should establish a register of ownership and responsibilities for all meters in which it has a joint interest.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-15	Customer advisory groups ▼ clauses 6.5.3 and 6.5.4	By 30 September 2019, Water NSW should ensure that a process is in place to record assessment and approval of nominations to the Customer Advisory Groups in accordance with reference to both the Customer Advisory Group Charter and requirements of the licence clause 6.5.4.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2018-16	Code of Practice on Payment Difficulties ▼ clause 6.8.2	By 31 December 2019, Water NSW should review the Code of Practice on Payment Difficulties to clarify procedures for all modes of identification of hardship (ie, self, community welfare organisations, and Water NSW).	New recommendation from 2018 audit.	Addressing this recommendation should improve Water NSW's compliance with clause 6.5.3. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.5.3. Auditor to check progress noting that the due date is outside of this audit period.
2018-17	Code of Practice on Payment Difficulties ▼ clause 6.8.4	By 30 September 2019, Water NSW should include a definition of financial hardship in the Debt Management Code of Practice. Water NSW should ensure that Customer Support Officers are trained in this definition and that records are kept to support when customers are first identified as experiencing financial hardship.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-18	Internal Complaints Handling Procedure ▼ clause 6.9.1	By 30 September 2019, Water NSW should ensure that a water quality category and associated issue descriptors are added to the customer complaint issues for capturing relevant information, including information that could signal contamination of the drinking water supply.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2018-19	Internal Complaints Handling Procedure ▼ clause 6.9.1	By 31 December 2019, Water NSW should ensure that Customer Service Officers are trained in responding to customer complaints and issues relating to water quality, including distinguishing whether the customer knows whether they are receiving potable or non-potable water.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-20	Roles and Responsibilities with Department on Industry ▼ clause 6.16.1	By 31 December 2019, Water NSW should review the roles and responsibilities in the Deed of Business Transfer (or the most recent variation of the Deed) for the conduct of the Conferred Functions specified in Schedule A of the licence, to clarify and confirm the roles and responsibilities with the Department of Industry – Water, and ensure it remains current in light of changes to the conferred functions.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

^a **Source:** IPART, *WaterNSW Operational Audit 2018, Report to the Minister*, February 2019 Water NSW - Status of Recommendations – 2017-18 Operational Audit is not due until 31 May 2019.

Table 4 Previous field verification locations for Water NSW

Audit year	Location	Facility
2018	Burrawang	Pump station
	Nepean	Dam
	Corrimal No. 3 shaft and associated transformer yard	Declared catchment area
Water NSW (State Water Corporation) Operating Licence 2013-2018		
2016-17	Griffith - Murrumbidgee, Beavers Creek, Tombullen Creek	Weirs, Outlet
2015-16	Burrinjuck Dam	Infrastructure
2014-15	Fish River	Water Supply
2013-14	Warren	Marebone Weir fishway
	Dubbo	Burrendong Dam floating curtain
Previous Licence		
2012-13	Dubbo	Burrendong Dam
	Macquarie River near Dubbo	Metering sites
2011-12	Fish River	Water Supply
	Duckmaloi	Water Treatment Plant
2010-11	Nil	-
Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017		
2016-17	Nepean	Catchment Areas
2015-16	Brayton	Catchment Areas
	Goulburn	Bradley Street Sewage Pumping Station
2014-15	Leura Falls	Catchment works
2013-14	Cataract Dam	Chemical dosing facility
		Outlet works
	Broughton's Pass	Weir
	Prospect Reservoir	Warragamba Pipeline Outlet Works
		Prospect RWPS (WP0903)
2012-13	Broughton's Pass to Prospect Reservoir	Upper Canal
	Prospect Reservoir	Prospect Reservoir
2011-12	Nil	-
2010-11	Nil	-

D Operational audit report 2019 – WaterNSW



2019 Operational Audit of WaterNSW

Final Audit Report

#14092-10-001 Version 3.1

Independent Pricing and Regulatory Tribunal

November 2019

Document History

2019 Operational Audit of WaterNSW

Final Audit Report

Independent Pricing and Regulatory Tribunal

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Glossary

Acronym/Term	Description
ADWG (2011)	<i>Australian Drinking Water Guidelines, 2011</i>
AGWR	<i>Australian Guidelines for Water Recycling</i>
AMP	Asset Management Plan
AMS	Asset Management System
CAG	Customer Advisory Group
CFO	Customer Field Officer
CSO	Customer Service Officer
CSR Water	Capture, Store and Release of Water by WaterNSW (refer <i>Operating Licence</i>)
DBP	Disinfection By-Product
DOI Water	Department of Industry – Water
DPIE	Department of Planning, Industry and Environment
DWQMS	Drinking Water Quality Management System
EMS	Environmental Management System
FMECA	Failure Mode Effects and Criticality Analysis
FRWSS	Fish River Water Supply System
IPART	The Independent Pricing and Regulatory Tribunal (NSW)
LWU	Local Water Utility
MoU	Memorandum of Understanding
NATA	National Association of Testing Authorities
NRAR	Natural Resources Access Regulator
OFI	Opportunity for Improvement
QAP	Quality Assurance Plan
RACS	Risk Assurance and Compliance System
SCADA	Supervisory Control and Data Acquisition
SOP	Standard Operating Procedure
WATHNET	Water Headworks Network simulation model
WAS	Water Accounting System
WLS	Water Licensing System
WQMS	Water Quality Management System
WSP	Water Sharing Plan
WSAA	Water Services Association of Australia
WTP	Water Treatment Plant

Executive Summary

Auditor Declaration

This report presents the findings of an Operational Audit of WaterNSW's compliance with the requirements of its Operating Licence during the period 1 July 2018 to 30 August 2019. The audit was undertaken by Cobbitty Consulting, in association with Viridis Consultants, for the Independent Pricing and Regulatory Tribunal (IPART).

The audit team confirms that:

- the auditors have seen sufficient evidence on which to base their conclusions;
- the audit findings accurately reflect the professional opinion of the auditors;
- the lead auditor and team members have conducted the audit, determined audit findings and prepared this report in accordance with the requirements of the *Audit Guideline – Public Water Utilities*¹ and IPART's *Request for Quote*.²
- the audit findings have not been unduly influenced by the utility and/or any of its associates.

Major Findings

The audit team found that WaterNSW had performed well against the audited obligations over the audit period. Thirty two (32) clauses of the Operating Licence were audited, the findings in respect of which can be summarised as follows:

- It was found that there was no requirement for compliance in respect of two (2) of the audited clauses during the audit period;
- Compliant (minor shortcomings) has been assigned in respect of three (3) clauses; and
- Compliant has been awarded to all of the remaining twenty-seven (27) audited clauses.

The identified shortcomings relate to the Water Quality Management System and its implementation.

The findings of the audit of performance against the audited Licence obligations are summarised in **Table E.1**. The assessment of progress in respect of previous audit recommendations is summarised in **Table E.2**.

¹ IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019.

² IPART, *Request for Quote – RFQ 19/80; 2019 Public Water Utility Audits*, undated.

Table E.1 Summary of Audit Findings

Licence Part	Clause/Obligation	Compliance Grade/Comment ³	
2. Water Source protection and conservation	2.1.1	Compliant (minor shortcomings) <i>Compliance with this obligation is dependent upon compliance with the remainder of clause 2.1. As minor shortcomings have been identified in respect of clauses 2.1.3 and 2.1.4, a technical shortcoming must be assessed.</i>	
	2.1.2	Compliant	
	2.1.3	Compliant (minor shortcomings) <i>The WQMS is generally consistent with the requirements of the ADWG; however, the Fish River verification monitoring plan is not clearly documented and there is an absence of information on the minimum qualifications for water treatment plant operators. These shortcomings are not considered to have compromised the ability of WaterNSW to achieve defined objectives or assure controlled processes in managing risks to water quality; the resultant risk to public health is considered low.</i>	
	2.1.4	Compliant (minor shortcomings) <i>It was not possible to audit the implementation the verification monitoring program due to inconsistency between the documented verification program and subsequent reporting of water quality results. These shortcomings are not considered to have compromised the ability of WaterNSW to achieve defined objectives or assure controlled processes in managing risks to water quality; any resultant risk to public health is considered low.</i>	
	2.2.1	Compliant	
	2.4.1	Compliant	
	2.5.1	Compliant	
	2.5.2	No Requirement	
	2.5.3	No Requirement	
	2.7.1	Compliant	
	2.7.2	Compliant	
	3. Bulk Water storage and transmission	3.1.1	Compliant
		3.3.1	Compliant
3.4.1		Compliant	
3.4.2		Compliant	
3.4.3		Compliant	
3.4.4		Compliant	

³ Comment provided where less than full compliance assessed.

Licence Part	Clause/Obligation	Compliance Grade/Comment ³
	3.4.5	Compliant
	3.4.6	Compliant
	3.4.7	Compliant
4. Performance Standards	4.2.2	Compliant
	4.2.3	Compliant
5. Organisational systems management	5.1.1	Compliant
	5.1.2	Compliant
	5.2.1	Compliant
	5.2.2	Compliant
6. Customer and stakeholder relations	6.2.1	Compliant
	6.10.1	Compliant
	6.10.2	Compliant
	6.11.1	Compliant
7. Performance monitoring and reporting	7.2.1	Compliant
	7.2.2	Compliant

Table E.2 Summary of Assessed Progress in Respect of Previous Audit Recommendations

Recommendation	Licence Reference ⁴ and Operational Issue	Status/Comment ⁵
2016/17-03	<i>Water Quality Management System (clause 2.1.4).</i> ⁶ By 30 June 2018, WaterNSW undertakes a risk assessment to determine appropriate strategies and controls to address any current reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.	Completed
2016/17-04	<i>Water Quality Management System (clause 2.1.4).</i> ⁶ By 31 December 2018, WaterNSW implements appropriate strategies and controls to address any reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.	Completed

⁴ Refer to the relevant section of this report and associated appendix for full details of previous recommendations.

⁵ Comment provided where less than recommendation has not been fully addressed (i.e. completed).

⁶ Recommendation originally raised in respect of clause 2.1.2 in the previous *Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017*; clause 2.1.4 is the equivalent clause in the current Licence.

Recommendation	Licence Reference ⁴ and Operational Issue	Status/Comment ⁵
2018-01	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4);</i> <i>Water Supply (clause 3.2.1):</i></p> <p>By 30 September 2019, WaterNSW should review and amend its Water Quality Management System to ensure that each water category covered by the WQMS addresses each element, component and activity of the Australian Drinking Water Guidelines framework.</p>	Completed
2018-02	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4);</i> <i>Water Supply (clause 3.2.1):</i></p> <p>By 30 September 2019, WaterNSW should document its procedures and process to manage materials and chemicals used in its system where the water is supplied for a drinking water end-use.</p>	Completed
2018-03	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4);</i> <i>Water Supply (clause 3.2.1):</i></p> <p>By 31 December 2019, WaterNSW should review the operational and process control procedures underpinning its Water Quality Management System and:</p> <ol style="list-style-type: none"> a) identify the required operational procedures from catchment to consumer for processes and activities under its control b) develop a plan to compile this information c) commence implementation of the plan and document operational procedures for all processes and activities (eg, preventive measures, operational monitoring and verification procedures and maintenance requirements), and d) commence staff training to ensure staff are trained and proficient to implement the new operational procedures. 	<p>Ongoing</p> <p><i>There was insufficient evidence to demonstrate that all operational and process control procedures underpinning the WQMS had been documented.</i></p>
2018-04	<p><i>Water Quality Management System (clause 2.1.2):</i></p> <p>By 31 December 2019, WaterNSW should review the manner in which it conducts all water utility risk assessments to ensure it meets the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.</p>	<p>Ongoing</p> <p><i>Although a review of the risk assessment had been commenced, additional actions are required to align the risk methodology with the requirements of elements 2 and 3 of the ADWG framework and the Licence obligation.</i></p>

Recommendation	Licence Reference ⁴ and Operational Issue	Status/Comment ⁵
2018-05	<p><i>Research on catchments (clause 2.8.1):</i></p> <p>By 31 December 2019, WaterNSW should explicitly identify how the research program for each Declared Catchment Area relates to catchment management and catchment health.</p>	Completed
2018-06	<p><i>Catchment management (clause 2.2.1); Catchment Infrastructure Works management (clause 2.4.1); Construct, maintain and operate Water Management Works (clause 3.1.1); Water Supplied Performance Standards (clause 4.2.3); Asset Management System (clause 5.1.1):</i></p> <p>By 31 December 2019, WaterNSW should revise the Asset Management System to ensure it is consistent with clause 5.1.1 in particular:</p> <ul style="list-style-type: none"> ▪ the scope accurately reflects the licence requirements including the Design Criteria, and related requirements for water supply security, robustness and reliability are adequately incorporated within the system ▪ the correct stakeholders have been identified and that stakeholder requirements including those relating to supply interruptions are reflected ▪ identify whether any elements of the Asset Management System do not meet the requirements and intent of the Strategic Asset Management Plan and if found, make a plan to revise the relevant elements to ensure that the Asset Management System meets the requirements and intent of the Strategic Asset Management Plan ▪ revise the Fish River Water Supply Scheme Incident Management Plan so that it reflects stakeholder requirements, and ▪ identify if any other processes or documents for managing supply interruptions should be revised to meet stakeholder requirements and develop a plan and timeframe for revising these processes and documents. 	Completed

Recommendation	Licence Reference ⁴ and Operational Issue	Status/Comment ⁵
2018-07	<p><i>Catchment Infrastructure Works management (clause 2.4.1);</i> <i>Construct, maintain and operate Water Management Works (clause 3.1.1);</i> <i>Asset Management System (clause 5.1.2):</i></p> <p>By 31 December 2019, WaterNSW should provide an updated plan for completion of Asset Class Standards with appropriate owners assigned to each action in the plan.</p>	Completed
2018-08	<p><i>Water Supply (clause 3.2.1);</i> <i>Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.1);</i> <i>Code of Practice on Payment Difficulties (clause 6.8.3):</i></p> <p>By 31 December 2019, WaterNSW should ensure that all Customer Supply Agreement templates and relevant supporting processes are reviewed to ensure:</p> <ul style="list-style-type: none"> ▪ relevant and current regulatory instruments are included, including references to the Plumbing Code of Australia, and all requirements of clause 6.1.3 and clause 6.8.3 ▪ templates are kept under regular review ▪ users of the templates are prompted to check the most up to date version of the licence and other regulatory instruments, and ▪ users of Customer Supply Agreements, including the legal representatives who review them, are trained to use the template and do not use previous agreements. 	Ongoing <i>Records were not available to demonstrate that users of Customer Supply Agreements have been trained in use of the Customer Supply Agreement template.</i>
2018-09	<p><i>Water Supply (clause 3.2.1);</i> <i>Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.2):</i></p> <p>By 1 June 2019, commence re-negotiation of the Customer Supply Agreement with Wingecarribee Council, with the intent of including water quality reporting that meets the sampling and monitoring capability of the supply system.</p>	Completed

Recommendation	Licence Reference ⁴ and Operational Issue	Status/Comment ⁵
2018-10	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clauses 6.1.2 and 6.1.3):</i></p> <p>By 31 December 2019, WaterNSW should undertake a risk-based review of Customer Supply Agreements across all types of customers (including all customers who are supplied drinking water) to ensure that the supply of water meets the terms and conditions of those agreements.</p>	<p>Ongoing</p> <p><i>Records were not available to demonstrate that a risk assessment of Customer Supply Contracts had been completed or that the outcomes of a risk assessment had been reflected in the terms and conditions of the Customer Supply Agreements. Furthermore, minor Customers are not captured in the Register of Customer Supply Agreements.</i></p>
2018-11	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.2):</i></p> <p>By 30 June 2020, WaterNSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (Recommendation 2018-10).</p>	<p>No action taken</p> <p><i>Until the risk review has been completed, no action can be taken in respect of developing and implementing processes to address identified gaps based on the outcomes of the review.</i></p>
2018-12	<p><i>Water metering and monitoring (clause 6.3.1):</i></p> <p>By 30 September 2019, WaterNSW should set objectives for the accuracy of water take determination with respect to billing, account management and reporting.</p>	<p>Completed</p>
2018-13	<p><i>Water metering and monitoring (clause 6.3.1):</i></p> <p>By 31 December 2019, WaterNSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.</p>	<p>Ongoing</p> <p><i>Action will not be completed until after Q4 billing is finalised.</i></p>
2018-14	<p><i>Water metering and monitoring (clause 6.3.2):</i></p> <p>By 31 December 2019, WaterNSW should establish a register of ownership and responsibilities for all meters in which it has a joint interest.</p>	<p>Completed</p>
2018-15	<p><i>Customer advisory groups (clauses 6.5.3 and 6.5.4):</i></p> <p>By 30 September 2019, WaterNSW should ensure that a process is in place to record assessment and approval of nominations to the Customer Advisory Groups in accordance with reference to both the Customer Advisory Group Charter and requirements of the licence clause 6.5.4.</p>	<p>Completed</p>

Recommendation	Licence Reference ⁴ and Operational Issue	Status/Comment ⁵
2018-16	<p><i>Code of Practice on Payment Difficulties (clause 6.8.2):</i></p> <p>By 31 December 2019, WaterNSW should review the Code of Practice on Payment Difficulties to clarify procedures for all modes of identification of hardship (ie, self, community welfare organisations, and Water NSW).</p>	Completed
2018-17	<p><i>Code of Practice on Payment Difficulties (clause 6.8.4):</i></p> <p>By 30 September 2019, WaterNSW should include a definition of financial hardship in the Debt Management Code of Practice. Water NSW should ensure that Customer Support Officers are trained in this definition and that records are kept to support when customers are first identified as experiencing financial hardship.</p>	Completed
2018-18	<p><i>Internal Complaints Handling Procedure (clause 6.9.1):</i></p> <p>By 30 September 2019, WaterNSW should ensure that a water quality category and associated issue descriptors are added to the customer complaint issues for capturing relevant information, including information that could signal contamination of the drinking water supply.</p>	Completed
2018-19	<p><i>Internal Complaints Handling Procedure (clause 6.9.1):</i></p> <p>By 31 December 2019, WaterNSW should ensure that Customer Service Officers are trained in responding to customer complaints and issues relating to water quality, including distinguishing whether the customer knows whether they are receiving potable or non-potable water.</p>	Completed
2018-20	<p><i>Roles and Responsibilities with Department of Industry (clause 6.16.1):</i></p> <p>By 31 December 2019, WaterNSW should review the roles and responsibilities in the Deed of Business Transfer (or the most recent variation of the Deed) for the conduct of the Conferred Functions specified in Schedule A of the licence, to clarify and confirm the roles and responsibilities with the Department of Industry – Water, and ensure it remains current in light of changes to the conferred functions.</p>	<p>Ongoing</p> <p><i>This recommendation is being addressed in conjunction with a review of the Licence and Deed of Business Transfer (and Variation thereto), which is ongoing.</i></p>

Recommendations

Recommendations arising from the audit are presented in **Table E.3**.

Table E.3 Audit Recommendations

Licence Part	Clause/Obligation	Recommendation
REC-WNSW-2019-01	2.1.3 and 2.1.4	<p>By 30 September 2020, WaterNSW must review the Fish River Water Supply System verification monitoring plan to:</p> <ul style="list-style-type: none"> ▪ identify the monitoring zones; ▪ specify the minimum of weekly testing of E. coli is undertaken in each monitoring zone in accordance with the ADWG requirements; ▪ review the implementation of the program to ensure that testing is undertaken in accordance with the monitoring plan; and ▪ establish review and reporting processes to confirm and report compliance with the program (e.g. reporting should verify the number of samples taken).
REC-WNSW-2019-02	2.1.3	<p>By 30 September 2020, WaterNSW must identify the minimum qualifications and competencies for personnel operating water treatment processes and incorporate these into the training processes such as the 'Mandatory Training Matrix'. The minimum qualifications and competencies should be based on industry standards such as WIOA Water Industry Operator Certification Scheme or similar.</p>

1. Introduction

1.1 Objectives

The objective of this audit was to assess, for the period from 1 July 2018 to 30 August 2019, WaterNSW's performance against the terms and conditions (obligations) of:

- the *Water NSW Operating Licence 2017-2022* (Operating Licence);⁷ and
- any other Ministerially-imposed requirements.

1.2 Audit Method

1.2.1 Audit Scope

The scope of the 2019 Operational Audit of WaterNSW is specified in detail in the *Request for Quote – RFQ 19/80; 2019 Public Water Utility Audits*; it comprised:

- audit of WaterNSW's compliance with the obligations and requirements set out in its Operating Licence;⁸ and
- assessment of WaterNSW's progress in addressing outstanding recommendations arising from previous audits.

As outlined in its *Audit Guideline – Public Water Utilities*,⁹ IPART adopts a risk-based approach in setting the scope of public water utility operational audits. The clauses/obligations against which WaterNSW's compliance has been assessed are identified in **Table 1.1**. Full details of the audit scope, as defined by IPART, are presented in **Appendix A**.

Table 1.1 Scope of 2019 Operational Audit of WaterNSW

Licence Part	Clause/Obligation
2. Water Source protection and conservation	2.1.1; 2.1.2; 2.1.3; 2.1.4; 2.2.1; 2.4.1; 2.5.1; 2.5.2; 2.5.3; 2.7.1; 2.7.2
3. Bulk Water storage and transmission	3.1.1; 3.3.1; 3.4.1; 3.4.2; 3.4.3; 3.4.4; 3.4.5; 3.4.6; 3.4.7
4. Performance standards	4.2.2; 4.2.3
5. Organisational systems management	5.1.1; 5.1.2; 5.2.1; 5.2.2
6. Customer and stakeholder relations	6.2.1; 6.10.1; 6.10.2; 6.11.1
7. Performance monitoring and reporting	7.2.1; 7.2.2

WaterNSW's progress in addressing recommendations from previous audits was also considered as part of the audit. Those recommendations are identified in **Table 1.2**.

⁷ It is noted that the Operating Licence was revised in February 2019.

⁸ Refer to **Section 1.3** for a discussion of the regulatory regime under which WaterNSW operates, including its operating licence.

⁹ IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019.

Table 1.2 Recommendations/Outstanding Items from Previous Audits included in the Audit Scope

Recommendation	Licence Reference ¹⁰ and Operational Issue
2016/17-03	<p><i>Water Quality Management System (clause 2.1.4):¹¹</i></p> <p>By 30 June 2018, WaterNSW undertakes a risk assessment to determine appropriate strategies and controls to address any current reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.</p>
2016/17-04	<p><i>Water Quality Management System (clause 2.1.4):⁶</i></p> <p>By 31 December 2018, WaterNSW implements appropriate strategies and controls to address any reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.</p>
2018-01	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4); Water Supply (clause 3.2.1):</i></p> <p>By 30 September 2019, WaterNSW should review and amend its Water Quality Management System to ensure that each water category covered by the WQMS addresses each element, component and activity of the Australian Drinking Water Guidelines framework.</p>
2018-02	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4); Water Supply (clause 3.2.1):</i></p> <p>By 30 September 2019, WaterNSW should document its procedures and process to manage materials and chemicals used in its system where the water is supplied for a drinking water end-use.</p>
2018-03	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4); Water Supply (clause 3.2.1):</i></p> <p>By 31 December 2019, WaterNSW should review the operational and process control procedures underpinning its Water Quality Management System and:</p> <ol style="list-style-type: none"> a) identify the required operational procedures from catchment to consumer for processes and activities under its control b) develop a plan to compile this information c) commence implementation of the plan and document operational procedures for all processes and activities (eg, preventive measures, operational monitoring and verification procedures and maintenance requirements), and d) commence staff training to ensure staff are trained and proficient to implement the new operational procedures.
2018-04	<p><i>Water Quality Management System (clause 2.1.2):</i></p> <p>By 31 December 2019, WaterNSW should review the manner in which it conducts all water utility risk assessments to ensure it meets the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.</p>
2018-05	<p><i>Research on catchments (clause 2.8.1):</i></p> <p>By 31 December 2019, WaterNSW should explicitly identify how the research program for each Declared Catchment Area relates to catchment management and catchment health.</p>

¹⁰ Refer to the relevant section of this report and associated appendix for full details of previous recommendations.

¹¹ Recommendation originally raised in respect of clause 2.1.2 in the previous *WaterNSW (Sydney Catchment Authority) Operating Licence 2012-2017*; clause 2.1.4 is the equivalent clause in the current Licence.

Recommendation	Licence Reference ¹⁰ and Operational Issue
2018-06	<p><i>Catchment management (clause 2.2.1); Catchment Infrastructure Works management (clause 2.4.1); Construct, maintain and operate Water Management Works (clause 3.1.1); Water Supplied Performance Standards (clause 4.2.3); Asset Management System (clause 5.1.1):</i></p> <p>By 31 December 2019, WaterNSW should revise the Asset Management System to ensure it is consistent with clause 5.1.1 in particular:</p> <ul style="list-style-type: none"> ▪ the scope accurately reflects the licence requirements including the Design Criteria, and related requirements for water supply security, robustness and reliability are adequately incorporated within the system ▪ the correct stakeholders have been identified and that stakeholder requirements including those relating to supply interruptions are reflected ▪ identify whether any elements of the Asset Management System do not meet the requirements and intent of the Strategic Asset Management Plan and if found, make a plan to revise the relevant elements to ensure that the Asset Management System meets the requirements and intent of the Strategic Asset Management Plan ▪ revise the Fish River Water Supply Scheme Incident Management Plan so that it reflects stakeholder requirements, and ▪ identify if any other processes or documents for managing supply interruptions should be revised to meet stakeholder requirements and develop a plan and timeframe for revising these processes and documents.
2018-07	<p><i>Catchment Infrastructure Works management (clause 2.4.1); Construct, maintain and operate Water Management Works (clause 3.1.1); Asset Management System (clause 5.1.2):</i></p> <p>By 31 December 2019, WaterNSW should provide an updated plan for completion of Asset Class Standards with appropriate owners assigned to each action in the plan.</p>
2018-08	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.1); Code of Practice on Payment Difficulties (clause 6.8.3):</i></p> <p>By 31 December 2019, WaterNSW should ensure that all Customer Supply Agreement templates and relevant supporting processes are reviewed to ensure:</p> <ul style="list-style-type: none"> ▪ relevant and current regulatory instruments are included, including references to the Plumbing Code of Australia, and all requirements of clause 6.1.3 and clause 6.8.3 ▪ templates are kept under regular review ▪ users of the templates are prompted to check the most up to date version of the licence and other regulatory instruments, and ▪ users of Customer Supply Agreements, including the legal representatives who review them, are trained to use the template and do not use previous agreements.
2018-09	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.2):</i></p> <p>By 1 June 2019, commence re-negotiation of the Customer Supply Agreement with Wingecarribee Council, with the intent of including water quality reporting that meets the sampling and monitoring capability of the supply system.</p>

Recommendation	Licence Reference ¹⁰ and Operational Issue
2018-10	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clauses 6.1.2 and 6.1.3):</i></p> <p>By 31 December 2019, WaterNSW should undertake a risk-based review of Customer Supply Agreements across all types of customers (including all customers who are supplied drinking water) to ensure that the supply of water meets the terms and conditions of those agreements.</p>
2018-11	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.2):</i></p> <p>By 30 June 2020, WaterNSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (Recommendation 2018-10).</p>
2018-12	<p><i>Water metering and monitoring (clause 6.3.1):</i></p> <p>By 30 September 2019, WaterNSW should set objectives for the accuracy of water take determination with respect to billing, account management and reporting.</p>
2018-13	<p><i>Water metering and monitoring (clause 6.3.1):</i></p> <p>By 31 December 2019, WaterNSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.</p>
2018-14	<p><i>Water metering and monitoring (clause 6.3.2):</i></p> <p>By 31 December 2019, WaterNSW should establish a register of ownership and responsibilities for all meters in which it has a joint interest.</p>
2018-15	<p><i>Customer advisory groups (clauses 6.5.3 and 6.5.4):</i></p> <p>By 30 September 2019, WaterNSW should ensure that a process is in place to record assessment and approval of nominations to the Customer Advisory Groups in accordance with reference to both the Customer Advisory Group Charter and requirements of the licence clause 6.5.4.</p>
2018-16	<p><i>Code of Practice on Payment Difficulties (clause 6.8.2):</i></p> <p>By 31 December 2019, WaterNSW should review the Code of Practice on Payment Difficulties to clarify procedures for all modes of identification of hardship (ie, self, community welfare organisations, and Water NSW).</p>
2018-17	<p><i>Code of Practice on Payment Difficulties (clause 6.8.4):</i></p> <p>By 30 September 2019, WaterNSW should include a definition of financial hardship in the Debt Management Code of Practice. Water NSW should ensure that Customer Support Officers are trained in this definition and that records are kept to support when customers are first identified as experiencing financial hardship.</p>
2018-18	<p><i>Internal Complaints Handling Procedure (clause 6.9.1):</i></p> <p>By 30 September 2019, WaterNSW should ensure that a water quality category and associated issue descriptors are added to the customer complaint issues for capturing relevant information, including information that could signal contamination of the drinking water supply.</p>
2018-19	<p><i>Internal Complaints Handling Procedure (clause 6.9.1):</i></p> <p>By 31 December 2019, WaterNSW should ensure that Customer Service Officers are trained in responding to customer complaints and issues relating to water quality, including distinguishing whether the customer knows whether they are receiving potable or non-potable water.</p>

Recommendation	Licence Reference ¹⁰ and Operational Issue
2018-20	<i>Roles and Responsibilities with Department of Industry (clause 6.16.1):</i> By 31 December 2019, WaterNSW should review the roles and responsibilities in the Deed of Business Transfer (or the most recent variation of the Deed) for the conduct of the Conferred Functions specified in Schedule A of the licence, to clarify and confirm the roles and responsibilities with the Department of Industry – Water, and ensure it remains current in light of changes to the conferred functions.

1.2.2 Audit Standard

The auditing principles/guidance presented in ISO 19011:2018 *Guidelines for auditing management systems* have been applied in conducting this audit. Guidance presented in the following standards was also considered where appropriate:

- ASAE 3100 (2008) *Compliance Engagements*;
- Auditing and Assurance Standard AUS 110 *Assurance Engagements other than Audits or Reviews of Historical Financial Information*; and
- International Standard on Quality Control ISQC 2009.

1.2.3 Audit Steps

The audit was undertaken in accordance with the methodology outlined in IPART’s *Audit Guideline – Public Water Utilities*.¹² The audit steps are identified in **Table 1.3**.

Table 1.3 Audit Steps¹³

Step	Description	Responsibility
Step 1	Audit scoping	IPART
Step 2	Appointment of the auditor	IPART
Step 3	Audit preparation	Auditor/Utility/IPART
Step 4	Audit interviews and Field verification site visits	Auditor/Utility (IPART observer)
Step 5	Audit assessment and reporting	Auditor/Utility/IPART
Step 6	Report to the Minister	IPART
Step 7	Report on audit recommendations	Utility

Audit interviews and field verification site visits were undertaken during the five (5) day period 16 September 2019 to 20 September 2019. Interviews were conducted with WaterNSW representatives at WaterNSW’s Parramatta offices. Field verification site visits were made to metering sites at the Farrer Memorial Agricultural High School, Calala and Chaffey Dam.

A site verification visit to Woronora Dam and the Lake Woronora Catchment was also proposed; however, heavy rainfall on the day prior led to closure of the catchment and cancellation of the visit. A briefing session in respect of catchment management and related activities was provided at the Parramatta offices instead.

¹² IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019.

¹³ IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019, section 3 and figure 3.1.

1.2.4 Audit Team

The audit team comprised of the following:

- Jim Sly – team lead and Lead Auditor;
- Karen Pither – Lead Auditor;
- Asoka Wijeratne – Lead Auditor and Lead Auditor providing audit support
- Tasleem Hasan –Lead Auditor providing audit support.

The allocation of responsibility for the various components of the audit (clauses audited by each auditor) was as nominated in **Table 1.4**.

Table 1.4 Allocation of Audit Responsibilities






Licence Part	Clause/Obligation	Lead Auditor
2. Water Source protection and conservation	2.1.1; 2.1.2; 2.1.3; 2.1.4 2.2.1 2.4.1 2.5.1; 2.5.2; 2.5.3 2.7.1; 2.7.2	Karen Pither Karen Pither/Asoka Wijeratne Jim Sly Jim Sly Jim Sly
3. Bulk Water storage and transmission	3.1.1 3.3.1 3.4.1; 3.4.2; 3.4.3; 3.4.4; 3.4.5 3.4.6; 3.4.7	Jim Sly Jim Sly Jim Sly Karen Pither
4. Performance standards	4.2.2 4.2.3	Karen Pither Jim Sly
5. Organisational systems management	5.1.1; 5.1.2 5.2.1; 5.2.2	Jim Sly Karen Pither/Asoka Wijeratne
6. Customer and stakeholder relations	6.2.1 6.10.1; 6.10.2 6.11.1	Jim Sly Jim Sly Jim Sly
7. Performance monitoring and reporting	7.2.1; 7.2.2	Jim Sly
Recommendations/Outstanding Items from Previous Audits	2016/17-03, 04 2018-01, 02, 03, 04 2018-05 2018-06, 07 2018-08, 09, 10, 11 2018-12, 13, 14 2018-15 2018-16, 17 2018-18, 19 2018-20	Karen Pither Karen Pither Karen Pither/Asoka Wijeratne Jim Sly Jim Sly Jim Sly Jim Sly Jim Sly Jim Sly Jim Sly

IPART representatives Jessica Hanna and Sarah Holdsworth attended throughout the audit as observers. A list of WaterNSW representatives that attended audit interviews and/or field verification visits is provided in **Appendix B**; WaterNSW’s Audit Coordination Team members Megan Patterson, Akash Agarwal and Ray Armstrong attended throughout the audit.

1.2.5 Audit Grades

Audit grades have been awarded in accordance with the guidance presented in the *Audit Guideline – Public Water Utilities*. The compliance grades used in this report are as identified in **Table 1.5**.

Table 1.5 Compliance Grades for Public Utilities¹⁴

Grades of compliance	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 that 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 assessment criterion within the audit period.

1.3 Regulatory Regime

WaterNSW is constituted under the *Water NSW Act 2014* and is a statutory State owned corporation pursuant to the *State Owned Corporations Act 1989*.

Pursuant to Section 11 of the *WaterNSW Act 2014*, WaterNSW can be granted one or more operating licences to authorise it to carry out its specified and other functions. For the purposes of this audit (which addresses the audit period 1 July 2018 to 30 August 2019), WaterNSW has been granted and has been operating under the provisions of the *Water NSW Operating Licence 2017-2022*.

It is noted that the Operating Licence was amended in February 2019 (i.e. during the audit period). The changes relate to:

¹⁴ IPART, *Audit Guideline; Public Water Utilities* (Issue PWUAG-Rev4), July 2019, figure 2.1.

- Clause 6.16 (Roles and Responsibilities with Department of Industry) – revised terminology;
- Clause 6.17 (Memorandum of understanding with Natural Resources Access Regulator) – new clause;
- Clause 8.1 (Definitions) – revised terminology; and
- Schedule A (Conferral of Functions) – revised details.

1.4 Quality Assurance Process

The quality assurance processes implemented in undertaking this audit have included:

- Peer review of the audit questionnaires prior to submission to IPART;
- Processes to control all documents used in the audit;
- Accuracy checks of reported data and the completeness of audit trails;
- Peer review of preliminary findings and audit assessments included in the Draft Reports;
- Quality review of the Draft Reports (both independently and by the Audit Team Leader);
- Peer review of the Revised Draft Reports, specifically the treatment of comments received on the Draft Report and the feasibility of recommendations and opportunities for continuous improvement; and
- Quality review of the Final Report (both independently and by the Audit Team Leader).

An independent peer review has been undertaken to ensure that the accuracy of each section of the report is checked through quality control steps and all audit judgements, conclusions and recommendations are validated. The independent review was undertaken by Bob Burford, who has held Exemplar Global lead auditor accreditation in respect of Drinking Water Quality Management Systems and ISO lead auditor certification in respect of Environmental Management Systems, Quality Management Systems, OHS Management Systems, Food Safety (Water) Management Systems and Information Security Management Systems.

As Audit Team Leader, Jim Sly has also reviewed the Audit Report prior to release.

2. Site Visit Report

2.1 Overview

As part of this audit, field verification site visits were made to a number of sites/facilities to verify how effectively WaterNSW is implementing the requirements of the Operating Licence in practice. These visits involved inspection of facilities, observation of activities being undertaken and discussions with field personnel.

Sites/facilities inspected for the purposes of this audit included:

- Metering sites at the Farrer Memorial Agricultural High School, Calala; and
- Chaffey Dam.

An overview of drought security works being implemented in the Peel Valley was provided at WaterNSW's Tamworth office prior to these inspections.

A site verification visit to Woronora Dam and the Lake Woronora Catchment was also proposed; however, heavy rainfall on the day prior led to closure of the catchment and cancellation of the visit. A briefing session in respect of catchment management and related activities was provided at the Parramatta offices instead. For the purposes of reporting, the briefing session is reported as a site visit.

A brief summary of the assets and/or activities inspected at each site, the issues reviewed and/or identified, and the observations made are set out in the following sections. More detailed discussion of specific aspects or issues is presented in **Section 3**.

2.2 Woronora Dam/Lake Woronora Catchment

2.2.1 Facility Description

Located about 50 kilometres south of Sydney, Woronora Dam is a mass gravity dam built between 1927 and 1941. It is 66 metres high and 390 metres in length.

Lake Woronora covers an area of approximately 4 square kilometres and has a total operating capacity of 71.8 gigalitres. It captures surface water from a catchment area of 75 square kilometres. Long wall coal mining is undertaken within the catchment.

2.2.2 Briefing Overview

The briefing comprised an overview of the dam and the routine operational tasks that are undertaken. An overview of the catchment and the associated management practices was provided. Environmental issues including bushfire management, biosecurity impacts, recreational area management and mining were also discussed.

2.2.3 Asset Management

From an operational perspective, 50-60 megalitres per day is typically released into supply from Woronora. However, security of supply management in accordance with the Design Criteria requires balancing between water sourced from Woronora and Prospect Reservoir.

There are two extraction points including variable release of environmental flows and draw-off for supply. There is provision to vary the offtake level, which is selected using a combination of drop boards and screens installed in the outlet structure. Outflow is controlled by ring-follower valves installed in the base of the outlet structure.

Daily operational tasks include routine dam surveillance, gallery inspections and checking of environmental flows.

WaterNSW has developed a mobile phone application called DamGuard for use in recording and communicating the results of its routine dam surveillance activities. An overview of DamGuard was provided; this is discussed further in Table 3.24.

2.2.4 Water Quality

WaterNSW gave a presentation on the operation and characteristics of the Woronora Dam. It was discussed that the destratification system is operated when needed and is usually switched off during winter months. The decision to operate the destratification system is made in consultation with Sydney Water. WaterNSW discussed the operation of the variable offtakes and how monthly data reporting and vertical profiles are used to manage any required changes.

WaterNSW discussed its flood prediction processes which are used to forecast rains and inflows into the dams. Where the forecast suggests significant rain, pre-event planning will be initiated in anticipation of increased turbidity.

WaterNSW provided aerial views of the Woronora Dam, and indicated the location of the monitoring instruments. The SCADA system and data trending were observed.

2.2.5 Catchment Management

WaterNSW presented an overview of its catchment management activities which are implemented through its *Catchment Protection Work Program*. The six initiatives include actions that address past, present and future water quality risks.

WaterNSW's Land Use Management activities include:

- reviewing and providing conditions of consent of new developments under its concurrence powers under the relevant state environmental planning policies;
- reviewing and assessing mining proposals;
- providing input into the content of planning instruments; and
- delivery of the land management objectives on land owned or leased by WaterNSW within the framework of the Asset Management System.

WaterNSW Water Quality Science activities include:

- reviewing the impact of its intervention programs; and
- identifying emerging issues that may affect water quality in the future.

WaterNSW's Community Education initiative was discussed. This initiative aims to improve the knowledge and capacity of people living inside and outside the declared catchments about water sources and how their activities impact on its quality.

2.2.6 Environment

Fire management

WaterNSW sits on the bushfire management committee administered by Rural Fire Services (RFS). Strategic fire management plans are in place for hazard reduction and fire suppression. WaterNSW generates an annual list of approved and non-approved chemicals, which is forwarded to RFS and the aircraft groups. WaterNSW has developed fire chemical buffer maps that denote where chemicals can be used.

Biosecurity

WaterNSW undertakes pest and weed control on its lands. Deer was discussed as an emerging pest problem. Pest culling activities are undertaken.

Recreation area management

WaterNSW manages specific recreation infrastructure at relevant dams and are required to maintain facilities. Some facilities are heritage listed and this needs to be considered. For sewage management, only pump out systems are used in special areas. Visual inspections are undertaken onsite to check volumes. Taps are spring loaded to prevent overflows. Where there is a campground, for example, Shoalhaven, inspections are more frequent. Fencing and signage are used to communicate requirements to visitors; fines and penalty infringements can be issued by authorised officers. WaterNSW participates in joint operations with National Parks, Police and Fisheries for managing illegal activities.

Mining

WaterNSW provided an overview of the long wall mining in the catchment and the potential impacts of the operational, proposed and closed long walls. WaterNSW provided a virtual tour of a watercourse below which long wall mining has been undertaken. Photographs of the area were presented; these demonstrated that WaterNSW continues to monitor the area to identify any change.

WaterNSW explained the process for the commencement of new long walls and how it is involved in applying conditions. It was noted that WaterNSW is providing submissions on the legislative framework for mining approvals.

2.3 Peel Valley (Tamworth) Drought Security Works

WaterNSW provided an overview of the current drought impact in the Peel Valley and drought security works that are being implemented.

The lowest rainfall and highest temperatures on record have occurred during the last two years, resulting in the worst drought on record. The catchment is dry resulting in negligible runoff from low intensity rainfall; inflow to Chaffey Reservoir is approximately half the previous worst case.

The Peel Valley (amongst others) is currently experiencing Stage 4 (critical) drought conditions under the NSW Extreme Events Policy. Forecasts in respect of both rainfall and temperature are unfavourable.

The current situation was summarised as follows:

- Peel Valley – Stage 4 drought with severe water shortage;
- Tamworth – level 5 restrictions;
- Chaffey Reservoir – 20% of active storage and currently releasing 42 megalitres per day;
- No allocation for general security access licences since October 2018;
- Reduced allocation for high priority (town, stock and domestic);
- Supply downstream of Dungowan will be restricted later in 2019 if dry conditions continue;
- Preserving water for critical human needs; all efforts being made to secure Tamworth’s supply; and
- Tamworth back-up plan was to source groundwater; however, this is not feasible due to insufficient sustainable capacity).

WaterNSW is now implementing drought security works comprising:

- Stage 1 – Installation of temporary weirs and pumping station, which will extend supply for approximately four months; and
- Stage 2 – Construction of permanent infrastructure, comprising a pipeline from Chaffey Dam to existing Dungowan pipeline that would ensure Tamworth does not run out of town water supply (under drought-of-record conditions) if constructed early enough.

Stage 1 pipeline and pumping station are currently being constructed; block weirs will be installed/ works will become operational at the end of November 2019. Stage 2, which will need to be implemented by March 2020 under worst case conditions, is being actively progressed in a manner that leaves decisions to proceed to the latest possible time.

Progress to date (at the time of briefing):

- Preliminary design, including Stage 2 route selection, substantially complete;
- Preferred contractor selected (for combined works) and negotiating D&C contract;
- Draft REF prepared and being finalised;
- Early procurement of materials in progress, where required;
- WaterNSW Board has approved;
- Program remains on schedule.

2.4 Metering Site

2.4.1 Facility Description/Inspection Overview

Two meter installations were inspected at the Farrer Memorial Agricultural High School, one on a groundwater bore and the second on an offtake from the Peel River.

An overview of the meter installations and the meter reading process was provided by a Customer Field Officer (CFO).

2.4.2 Observations

The NSW Government is implementing a non-urban water metering framework, which began in December 2018, as part of its Water Reform Action Plan. Under the framework there is a requirement for all meters to be pattern approved and to be installed by a Certified Meter Installer (CMI). The property owner (Customer) is responsible for the meter and having it installed by a CMI. Certificates of compliance issued by the CMI are submitted to the Water Reform Project; it is understood that, once the framework is more established, these certificates will be passed on to WaterNSW.

Both meter installations were fitted with pattern approved meters and appeared to have been installed in the appropriate configuration (upstream and downstream uninterrupted distances) for meter accuracy. When visiting to record meter readings, the CFO checks to ensure that the installation is secure, e.g. checks tamper evident seals on the meters. If a meter is found to be faulty, the Customer is notified (to arrange repair) and the CFO records the issue.

Meter readings are undertaken in accordance with a *Meter Reading Procedure* and other related procedures (refer Table 3.24 for further detail). Meter read frequency is identified in the Water Accounting System; however, additional reads may be required following a supplementary water event, during periods of high water take or in response to a special request (e.g. for solicitor enquiries).

The CFO runs a report from the Water Accounting System to determine the required meter reads and makes up a 'run book' in which the reads are recorded; a record is also kept in the CFO's diary. Records are entered into the Water Accounting System from the run book.

2.5 Chaffey Dam

2.5.1 Facility Description

Chaffey Dam is situated on the Peel River, 43 kilometres south-east of Tamworth and approximately 400 kilometres north of Sydney. It is comprised of a rock-fill embankment with a clay core; the rock wall is 443 metres long and 55.8 metres high.

The dam features a morning glory spillway which is integral with the outlet structure. It has a variable level outlet, with the draw-off level being selected by configuration of a series of drop boards and screens.

The dam has recently been upgraded (completed in late 2016) to provide increased storage capacity and meet current day dam safety standards. The dam wall was raised by 8 metres and the spillway by 6.5 metres, thereby increasing the total storage capacity to 100.5 gigalitres.

2.5.2 Inspection Overview

The site inspection comprised an overview of operational activities and inspection of the dam wall and spillway/outlet structure.

2.5.3 Asset Management

Tasks undertaken by site staff include daily operational inspection and dam surveillance activities. These activities are carried out in accordance with work orders which are scheduled on a weekly basis. Each work order is assigned a priority which guides implementation.

Work orders are managed on site via WaterNSW's Dynamics 365 maintenance management system. A StartCard application is used to record activity.

In addition to daily inspections, the dam surveillance regime includes weekly monitoring of groundwater levels and monthly piezometer readings. Since March 2019, all dam surveillance activities are managed (readings recorded and transmitted) using the DamGuard mobile phone application (refer Table 3.24). Prior to March, paper-based records were used.

A sample of maintenance records was sighted; these are referenced in Table 3.24.

Releases from the dam are based on the required flow as advised by River Operations. A documented request is received via email and acknowledged once the adjustment has been made. Valve settings are determined in accordance with discharge rating curve specific to the installed valve (in this case a DN600 cone valve).

3. Detailed Audit Findings

3.1 Overview


This section sets out the detailed findings of the audit for each audited clause of the *Operating Licence*. In each case the following is provided:

- the Licence requirement is defined;
- the risk that non-compliance with the requirement presents;
- the target for full compliance;
- the assessed level of compliance (Compliance grade);
- a summary of the reason for the assessed compliance grade;
- a list of the evidence reviewed in assessing compliance;
- discussion of the evidence reviewed and how it demonstrates/supports the assessed level of compliance;
- any recommendations (in the event that full compliance is not assessed); and
- any identified opportunities for improvement.

3.2 Water Source protection and conservation (Licence Part 2)

3.2.1 Water Quality Management System (clause 2.1)

Table 3.1 Water Quality Management System (sub-clause 2.1.1)

Sub-clause	Requirement	Compliance Grade
2.1.1	Water NSW must maintain a Water Quality Management System in accordance with this clause 2.1.	 Compliant (minor shortcomings)

Risk

Without a comprehensive water quality management system, there is a high risk that WaterNSW may not be able to effectively manage risks to water quality and protect public health.

Target for Full Compliance

Evidence that a Water Quality Management System has been established, maintained and kept up to date, and that it is consistent with the specific requirements of clauses 2.1.2, 2.1.3 and 2.1.4.

Obligation

WaterNSW is obliged to develop a water quality management system (WQMS) that manages the risk to the quality of water, and covers the categories of water required under the Licence. The WQMS must be current and include appropriate controls to reduce drinking water quality risks to an acceptable level.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *WQMSystem 2018* (CD2013 56v4), 2018.
- WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

Summary of reasons for grade

WaterNSW has established an overarching WQMS, consistent with the 12 elements from the ADWG, which it maintained during the audit period. A WQMS was also maintained for the Fish River Water Supply Scheme (FRWSS) during the audit period, which is also consistent with the 12 elements from the ADWG.

It was therefore assessed from an overall perspective that WaterNSW had demonstrated compliance with this obligation. However, in assessing compliance with the requirements of clauses 2.1.3 and 2.1.4 in detail, some minor shortcomings were identified. As compliance with this obligation is dependent upon compliance with the remainder of clause 2.1, a technical shortcoming must be assessed.

Accordingly, WaterNSW was assessed as Compliant (minor shortcomings) in relation to this obligation.

Discussion and notes

This licence clause requires WaterNSW to establish a WQMS that addresses the 12 elements of the ADWG Framework that adequately manages the risks to drinking water quality. WaterNSW has established an overarching *Water Quality Management System (WQMS)*¹⁵ that details the categories of water that are covered by the WQMS that are consistent with the licence requirements.

The auditors noted that the ‘*Water transferred from the Murray River to Broken Hill*’ is included within the scope of the WQMS; however, the WQMS does not address the ADWG requirements for this water category. IPART confirmed that this category is not required to be covered by the scope of the Water Quality Management System as this is not a “Supply” activity as defined in the Licence; therefore the ADWG requirements do not need to be addressed for this category. To reduce uncertainty it would be useful to include commentary within the WQMS to clarify why and how the ‘*Water transferred from the Murray River to Broken Hill*’ is captured under the WQMS (**OFI-WNSW-2019-01**).

The *Fish River Water Supply Drinking Water Quality Management System (FRWSS DWQMS)*¹⁶ was provided as evidence of the scheme specific WQMS for the FRWSS. The FRWSS DWQMS was current and up to date and was maintained through the audit period.

It was therefore assessed that, from an overall perspective, WaterNSW was compliant with this obligation in that it had maintained a WQMS in respect of both the Declared Catchment Areas (clause 2.1.2) and Non-Declared Catchment Areas (clause 2.1.3) and that it had implemented the WQMS (clause 2.1.4) during the audit period. However, detailed assessment revealed minor shortcomings in respect of the WQMS as applicable to the non-declared catchments and the implementation of the WQMS (principally in respect of the non-declared catchments). As compliance with clause 2.1.1 is dependent on compliance with the remainder of clause 2.1, a technical shortcoming must be assessed.

Recommendations

As the compliance grade for this obligation is a direct reflection of the compliance grades assessed in respect of clauses 2.1.3 and 2.1.4, there are no recommendations in respect of this obligation. Implementation of actions in response to recommendations **REC-WNSW-2019.01** and **REC-WNSW-2019.02** will address the currently identified shortcomings.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this sub-clause.

- **OFI-WNSW-2019-01:** Include commentary within the WQMS to clarify why and how the ‘*Water transferred from the Murray River to Broken Hill*’ is captured under the WQMS.


Supplemental information

No supplemental information is provided in respect of this obligation.

¹⁵ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

¹⁶ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

Table 3.2 Water Quality Management System (sub-clause 2.1.2)

Sub-clause	Requirement	Compliance Grade
2.1.2	<p>With respect to Declared Catchment Areas, Water NSW must maintain a Water Quality Management System that is consistent with either:</p> <ul style="list-style-type: none"> 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. <p><i>[Note: It is generally expected that for the Declared Catchment Areas Water NSW will develop a Water Quality Management System consistent with the Australian Drinking Water Guidelines. However, where NSW Health considers appropriate, the application of those Guidelines may be amended or added to, to take account of Water NSW's circumstances and/or policy and practices within New South Wales regarding Drinking Water quality.</i></p> <p><i>It is generally expected that Water NSW will manage the Declared Catchment Areas and the associated Catchment Infrastructure Works in light of its knowledge of the whole system for the Supply of Drinking Water (including the Bulk Water Supply System associated with Declared Catchment Areas together with each system for treating, storing and supplying Drinking Water of each Customer to whom Water NSW Supplies water which is sourced from Declared Catchment Areas). That is, Water NSW should have adequate systems and processes in place to manage Bulk Water quality to its water Supply Customers, taking into account the implementation of planning and risk management across the whole Drinking Water Supply system.]</i></p>	 Compliant
Risk	<p>Without a comprehensive water quality management system, there is a high risk that WaterNSW may not be able to effectively manage risks to water quality and protect public health.</p>	Target for Full Compliance
		<p>Evidence that a Water Quality Management System has been established, maintained and kept up to date, and that it is consistent with the ADWG and/or any other requirements specified or approved by NSW Health or IPART.</p>

Obligation

WaterNSW is obliged to establish a WQMS that includes adequate systems and processes in place to manage bulk water quality to its water Supply customers and the Supply of drinking water, taking into account the implementation of planning and risk management across the whole drinking water supply system. The WQMS must be current and cover the categories of water managed by WaterNSW that are captured under the operating licence.

Evidence sighted

General:

- Water response to 2019 Audit Questionnaire.
- WaterNSW, *WQMS System 2018* (CD2013 56v4), 2018.
- WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

Further evidence is listed by ADWG Element in the following.

Element 1:

- WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.
 - WaterNSW, *Compliance Management Framework* (Cd2018 13), 2017.
 - WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.
 - WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Water Quality Contacts List* (D2013 94543) undated.
 - WaterNSW, *ARK notes Contact list updates* (D2019 79751).
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Element 2:

- WaterNSW, *C2C Risk Review Process* (D2019 30124).
 - WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).
 - WaterNSW, *C2C Review Base Sheet (unknown)* Undated.
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Element 3:

- WaterNSW, *C2C Risk Review Process* (D2019 30124).
 - WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.
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Element 4:

- WaterNSW, *Procedures and Processes for managing WQ* (D2019 30924), 2019.
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130[v5]), May-19.
 - WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.
 - WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).
 - WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.
 - WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).
 - WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]), Jun-19.
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- WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
 - WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.
 - WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *4.4 Screenshot from EAMS - Prospect destratifier* (D2019 84485), Jun-19.
 - WaterNSW, *Maintenance Plan Data Entry Template* (D2018 16530).
 - WaterNSW, *Procurement Framework* (CD2016 77v2), 6-Jun-19.
 - WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.
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Element 5:

- WaterNSW, *Water Monitoring Program Manual* (CD2011 176v6), Jun-19.
 - WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).
 - WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
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Element 6:

- WaterNSW, *Water Quality Incident Response Protocol* (CD2004 183[v3]), Apr-18.
 - WaterNSW, *Water Quality Contact List* (CD2013 94543).
 - WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.
 - WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657).
 - WaterNSW, *Joint Communication Protocols - v1* (D2019 26923), Mar-19.
 - WaterNSW, *Contingency Plan Warragamba Rain V6* (D2016 39701).
 - WaterNSW, *Contingency Plan Warragamba Algae V4* (D2016 92951).
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Element 7:

- WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.
 - WaterNSW, *Water Quality Awareness - eLearning module* (all staff) (D2017 58449).
 - WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.
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Element 8:

- WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.
 - WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).
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Element 9:

- WaterNSW, *Science Program 2016-2020* (D2015 126524), 2016-2020.
 - WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Asset Change Management Procedure* (CD2016 57[v2]), Jul-19.
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Element 10:

- WaterNSW, *Controlled Document Procedure* (CD2010 135[v6])
- WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).
- WaterNSW, *Screenshot ARK Records Management System and Showing Key Contacts* (D2019 84701).

Element 11:

- WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
- WaterNSW, *Audit and Assurance Framework - UNDER REVIEW* (CD2015 55[v2]).
- WaterNSW, *WQMS Audit Program* (D2017 87415).
- WaterNSW *Screenshot-Aquality Assessment Tool Showing Status of Submission* (D2019 85083), undated.

Element 12:

- WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *Review Water Quality Management System - How to Guide* (D2019 64126).
- WaterNSW, *WQ Improvement Plan Apr 2019* (D2019 53719), Apr-19.
- WaterNSW, *Annual Review and Continual Improvement Cycle* (D2019 84711), undated.

Summary of reasons for grade

WaterNSW has established a WQMS that is generally consistent with the requirements of the ADWG for the categories of water supplied within the declared catchment. The WQMS details the systems and processes that are in place to adequately manage the risks associated with the categories of water captured under the WQMS. The systems and processes detailed within the WQMS include actions taken by WaterNSW to manage the quality of Bulk Water supplied to Customers and WaterNSW's obligations for planning and risk management in consideration of the catchment to tap approach across the whole Drinking Water Supply system within the Declared Catchment.

There are two open recommendations from the 2018 Operational Audit relating to Elements 2 and 3 (Recommendation 2018-04) and Element 4 (Recommendation 2018-03) that require WaterNSW to review the manner in which it conducts all water utility risk assessments. Additionally, WaterNSW was required to review the operational and process control procedures underpinning the WQMS, identify required operational procedures, and develop a plan for compiling them. These recommendations are not due to be completed until 31 December 2019; therefore assessment of WaterNSW's compliance with the implementation of Elements 2, 3 and 4 has been captured within the assessment of those recommendations, to prevent the development of new recommendations that would be addressed through closing out the previous recommendations.

WaterNSW has been assessed as Compliant for this Licence obligation.

Discussion and notes

The WQMS identifies the categories of water that are covered within its scope, which include drinking water and bulk water supplied for treatment. There are no categories of water identified in the WQMS that do not have drinking water as an end use, therefore the WQMS is required to be consistent with the ADWG. The principles of the ADWG have been applied to these categories, as well as the requirements for a relevant quality assurance program under section 25 of the *Public Health Act 2010* (NSW), where relevant. The *Australian Guidelines for Water Recycling* (AGWR) are not relevant to any of WaterNSW's operations.

As detailed in the assessment of clause 2.1.1, the 'Water transferred from the Murray River to Broken Hill' is included in the WQMS but is not required to be captured under the ADWG, as it does not meet the definition of 'Supply' under the Licence.

Maintenance of the WQMS to be consistent with each ADWG Element is discussed below.

Element 1:

Drinking Water Policy

The ADWG Framework requires a drinking water quality policy to be formulated, endorsed by senior executive, and implemented throughout the organisation. The policy must be visible and communicated, understood and implemented by employees.

WaterNSW provided the *Drinking Water Policy*¹⁷ which was approved by the Chief Executive Officer and Board of WaterNSW. The policy is up to date and current.

The policy applies to water supplied by WaterNSW as drinking water, or as bulk water with the final end use as drinking water (supplied by pipe or canal directly to a drinking water supplier). Where this policy applies, WaterNSW is committed to:

- effectively managing declared catchment areas and water management works in these areas to protect and promote water quality based on a multi-barrier approach; and
- supplying water that complies with appropriate water quality guidelines or standards to minimise risks to public health.

The WQMS states that the policy is published on the WaterNSW intranet and displayed at WaterNSW facilities to communicate its requirements to employees. The policy is also included in water quality awareness training to ensure that it is understood and employees are aware of their responsibilities for its implementation.

Regulatory and Formal Requirements

The ADWG Framework requires relevant regulatory and formal requirements to be identified and documented, responsibilities understood and communicated to employees, and requirements reviewed periodically to reflect any changes.

WaterNSW provided the *Compliance Management Framework*¹⁸ which details WaterNSW's '*Compliance Policy*' and the process for identifying obligations and maintaining an up to date register of obligations. The Framework also includes a process for assessing compliance risks and implementation of the compliance framework. The WQMS states that specific compliance obligations are communicated to relevant staff using the Risk Assurance and Compliance System (RACS). The WQMS states that the legal and other obligations are reviewed every six months and compliance is reported to the Board every six months. The Framework is reviewed every three years.

¹⁷ WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.

¹⁸ WaterNSW, *Compliance Management Framework* (CD2018 13), 2017.

Engaging Stakeholders

The ADWG Framework requires all stakeholders who could affect, or be affected by, decisions or activities of the drinking water supplier to be identified and appropriate mechanisms and documentation for stakeholder commitment and involvement to be developed. A list of relevant agencies needs to be updated regularly.

Stakeholder engagement activities are routinely undertaken by WaterNSW as part of the *Catchment Protection Work Program*¹⁹ and reported in annual catchment management reports. The *Catchment Protection Work Program* covering the Sydney Catchment Area includes, as one of its major tools for managing water quality risk, a sub-program entitled 'Engaged Communities'. The programs detailed in other parts of the *Catchment Protection Work Program* include consultation with each relevant community, for example, with local government for the Urban Stormwater Program and land owners for the Grazing and Erosion Program.

WaterNSW maintains a list²⁰ of water quality contacts and provided the *ARK notes Contact list updates*,²¹ which provides an example of how the stakeholder contacts list is updated and amended. The WQMS states that the stakeholder list is updated 'regularly'.

Element 2:

Water Supply System Analysis

The ADWG Framework requires the water supply system to be analysed by a team with appropriate knowledge and expertise. Pertinent information must be assembled, and key characteristics of the water supply system must be considered. A flow diagram must be constructed that shows the water supply system from catchment to consumer. The water supply system analysis must be periodically reviewed.

WaterNSW provided the *Water Quality Management System (WQMS)*²² which presents an overview on the water quality system analysis. The *C2C Risk Review Process*,²³ is referenced in the WQMS and details the catchment to customer risk review process. The *C2C Risk Review Process* includes a requirement to identify the risk review group, develop or update the schematics for each supply and to identify the data requirements needed for the review. The *C2C Risk Review Process* includes a requirement to develop a schedule for a 5 yearly full review of the risk assessment.

Assessment of Water Quality Data

The ADWG Framework requires the collection of historical data from source waters, treatment plants, and finished water supplied to customers. Exceedances must be identified and examined, and data should be assessed to identify trends and potential problems.

The *C2C Risk Review Process* includes a requirement to assemble all relevant material pertaining to incidents, WQ data; trends; CCP performance. The *WQ Data Review and Reporting Procedure*²⁴ provides guidance on extracting and reviewing data but does not link back directly to the risk assessment process. The *C2C Risk Review Process* and *WQ Data Review and Reporting Procedure* provide limited guidance on the types of catchment data, the parameters to be analysed and the dataset that should be included in the analysis. This could be improved by detailing within the *C2C Risk Review Process* or a standalone procedure, the process for conducting a water quality data assessment for risk assessment purposes. This should be considered when addressing previous Recommendation 2018-04 (**OFI-WNSW-2019-02**).

¹⁹ WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.

²⁰ WaterNSW, *Water Quality Contacts List* (D2013 94543) undated.

²¹ WaterNSW, *ARK notes Contact list updates* (D2019 79751).

²² WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

²³ WaterNSW, *C2C Risk Review Process* (D2019 30124).

²⁴ WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).

Hazard Identification and Risk Assessment

The ADWG Framework requires that the approach and methodology to be used for hazard identification and risk assessment should be defined, and the hazards, sources and hazardous events for each component of the water supply system should be documented. The level of risk for each identified hazard or hazardous event should be estimated and the major sources of uncertainty associated with each hazard and hazardous event evaluated. Significant risks should be determined and priorities for risk management documented. The hazard identification and risk assessment should be periodically reviewed and updated to incorporate any changes.

The *C2C Risk Review Process* includes an action to ‘set the risk assessment criteria’ with the risk matrix to be discussed and the likelihood and consequence category to be clearly defined, and a consensus to be reached on the risk matrix. The process includes two workshops, the first to discuss the over-arching issues and prioritise risk, and the second to discuss and resolve outstanding issues. Assessment of uncertainty is captured in the initial discussions. Whilst the *C2C Risk Review Process* and the WQMS mention risk prioritisation, there is no definition of ‘significant risk’. The level of significant risk should be defined to establish where a risk is unacceptable to the organisation, and this should drive the risk prioritisation process. Subsequent elements on the ADWG Framework assume that significant risk has been identified as part of the risk assessment process. The process for identifying significant risk and the subsequent prioritisation of risk should be detailed in the *C2C Risk Review Process* to ensure consistency across risk assessments. This should be considered when addressing previous Recommendation 2018-04 (**OFI-WNSW-2019-03**).

The *C2C Risk Review Process* includes a requirement to develop a schedule for a 5-yearly full review of the risk assessment and also states that ‘risks arising from any new hazards, hazardous-events and process changes will be reviewed as they arise on an ongoing basis by a JOG working group’.

Element 3:

Preventive Measures and Multiple Barriers

The ADWG Framework requires the identification and documentation of preventive measures for each significant hazard or hazardous event and estimation of residual risk. The need for additional preventive measures should be evaluated where improvement is required.

For each hazard/hazardous event row in the risk assessment, the C2C risk assessment²⁵ identifies the existing controls in the catchment, storage, delivery, treatment, and distribution systems. The risk assessment includes a column for ‘Proposed Controls’ which captures the improvements required. Additionally, the *C2C Risk Review Process*²⁶ includes a requirement to ‘Identify Improvement Actions’.

Critical Control Points

The ADWG Framework requires assessment of preventive measures from catchment to customer to identify critical control points (CCPs). Mechanisms for operational control should be established and the CCPs, critical limits and target criteria documented.

Within the declared catchment, CCPs have been developed for raw water supplies to Sydney Water and for the picnic areas. The CCPs are documented in the ‘CCP tables’ in *3.2 WQ Incident Response Protocol CCP tables*.²⁷ The CCP tables include the operational target criteria and critical limits and identify the mechanisms to achieve operational control, such as actions to be taken when operational parameters deviate from target levels and in response to an adjustment or critical limit trigger.

²⁵ WaterNSW, *C2C Review Base Sheet* (unknown) Undated.

²⁶ Sydney Water, *C2C Risk Review Process* (D2019 30124).

²⁷ WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.

CCPs for the picnic areas are captured in the Quality Assurance Plans (QAPs) developed under the *Public Health Act 2010*. Assessment of the QAPs was not included in the scope of this audit.

Element 4:

Operational Procedures

The ADWG framework requires procedures to be identified for processes and activities from catchment to consumer. Procedures should be compiled into an operations manual.

WaterNSW provided a list of operational procedures '*Procedures and Processes for managing WQ*'²⁸ that have been developed to manage its activities and processes. Review of the list confirmed that the procedures cover activities including catchments, raw water storages, operation of infrastructure, monitoring and inspection, incident management and consumer liaison. A number of operations and maintenance manuals were included on the list.

Example were provided to demonstrate that procedures are documented including:

- *Water Quality Data Review and Reporting Procedure*;²⁹
- *Materials and Chemicals with Drinking Water Supplies Procedure*;³⁰
- *Complaints and Compliments Handling Procedure*;³¹
- *Incident Management Procedure*;³² and
- *Controlled Document Procedure*.³³

A recommendation from the 2018 Operational Audit (Recommendation 2018-03) requires WaterNSW to (by 31 December 2019) review the operational and process control procedures underpinning its WQMS and commence implementation of the plan and document operational procedures for all processes and activities (e.g. preventive measures, operational monitoring and verification procedures and maintenance requirements). This audit reports on the progress in implementing that recommendation in lieu of making further recommendations for this element (refer Table 4.5).

Operational Monitoring

The ADWG Framework requires monitoring protocols to be developed to evaluate operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results. The protocols should be documented in an operational monitoring plan.

WaterNSW provided the *Water Monitoring Program Manual*³⁴ as evidence that operational monitoring has been compiled into a documented plan. The Manual includes monitoring across the declared catchment from catchment to tap, including the monitoring of CCPs and other measures of operational performance. The Manual includes the identification of operational parameters, target criteria and critical limits.

Corrective Action

The ADWG Framework requires the establishment and documentation of procedures for corrective action to control excursions in operational parameters and for rapid communication systems to deal with unexpected events.

²⁸ WaterNSW, *Procedures and Processes for managing WQ* (D2019 30924), 2019.

²⁹ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130[v5]), May-19.

³⁰ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.

³¹ WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).

³² WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.

³³ WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).

³⁴ WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]), Jun-19.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure*³⁵ which provides a framework for reviewing operational data and ensuring exceptions have been notified to the relevant person, including immediate verbal notification of water supply threats and development of suggested corrective actions. Verbal notifications are to be followed up by email and formal documentation of the event.

The *WQ Incident Response Protocol CCP tables*³⁶ include corrective actions to be taken in response to an exceedance of an operational parameter, an adjustment or a critical limit. Actions include communication (internal and external), operational changes and implementation of incident protocols.

Equipment Capability and Maintenance

The ADWG Framework requires water service providers to ensure that equipment performs adequately and provides sufficient flexibility and process control. Programs for regular inspection and maintenance of all equipment, including monitoring equipment should be established.

WaterNSW provided the WQMS³⁷ that states that ‘*Operations and Maintenance manuals have been developed for each major part of the water supply infrastructure.*’ Maintenance schedules have been captured in an Enterprise Asset Management (EAM) software framework with a screenshot³⁸ of an EAM entry as evidence of the establishment of the maintenance system. A spreadsheet³⁹ showing maintenance scheduling for a range of equipment types including analysers was provided to demonstrate that the maintenance plan covers monitoring equipment.

Materials and Chemicals

The ADWG Framework requires water service providers to ensure that only approved materials and chemicals are used and that documented procedures for evaluating chemicals, materials and suppliers are established.

WaterNSW provided the *Procurement Framework*⁴⁰ which includes a section relating to protecting water quality in procurement. The *Materials and Chemicals with Drinking Water Supplies Procedure*⁴¹ has been established for the purchase and use of materials and chemicals in contact with drinking water supplies and is referenced in the WQMS. The procedure covers water treatment chemicals, materials used in plumbing, cleaning products, firefighting chemicals, herbicides and pesticides that may be used by WaterNSW in and around its water supply systems. Standards for procurement of suitable materials are documented, in addition to requirements for clean-up of spills, selection of reputable suppliers, and processes for receipt of chemicals and materials. The procedure also includes a list of relevant approved chemicals.

Element 5:

Drinking Water Quality Monitoring

The ADWG Framework requires that the characteristics to be monitored in the distribution system and in water as supplied to the consumer should be determined and documented in a sampling plan for each characteristic, including the location and frequency of sampling. The monitoring data must be representative and reliable.

WaterNSW provided the *Water Monitoring Program Manual*⁴² which includes the monitoring of the private water supplies at picnic areas and rural dams, bulk water supplied for treatment and other

³⁵ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

³⁶ WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.

³⁷ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

³⁸ WaterNSW, *4.4 Screenshot from EAMS - Prospect destratifier* (D2019 84485), Jun-19.

³⁹ WaterNSW, *Maintenance Plan Data Entry Template* (D2018 16530).

⁴⁰ WaterNSW, *Procurement Framework* (CD2016 77v2), 6-Jun-19.

⁴¹ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.

⁴² WaterNSW, *Water Monitoring Program Manual* (CD2011 176v6), Jun-19.

monitoring that is outside of the WQMS. The Manual includes the characteristics to be monitored for the raw water supplied to customer run plants based on the water supply agreements and supply contracts. The characteristics include physical and chemical parameters, algal counts and microbiological indicators to provide an indication of potential problems within the water supply system. The Manual also specifies the frequency of monitoring for each characteristic.

Consumer Satisfaction

The ADWG Framework requires the establishment of a consumer complaint and response program that includes appropriate training of employees.

WaterNSW provided the *Complaints and Compliments Handling Procedure*⁴³ which includes additional requirements for immediate notification to the Customer Experience Service Improvement Specialist where a water quality complaint has been received.

The WQMS⁴⁴ includes details of customer communication in the form of Customer Advisory Groups (CAGs) in rural areas to consult with customers on the water delivery, pricing and levels of service.

The WQMS states that all WaterNSW staff have six monthly performance reviews and, where the position requires knowledge of water quality management or experience in incident management, the requirement will be recorded including proposed methods for obtaining the required skills or experience. The *Complaints and Compliments Handling Procedure* states that specific training for handling water quality complaints will be provided to all Customer Service Officers.

Short-term Evaluation of Results

The ADWG Framework requires the establishment of procedures for the daily review of drinking water quality monitoring data and consumer satisfaction, and the development of internal and external reporting mechanisms.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure*⁴⁵ as evidence of short-term review of performance. The procedure details the methodology for review of data as well as the preparation and timing of reports; for example, a 'Water Quality Report' is required to be prepared within eight days of a sampling event.

Corrective Action

The ADWG Framework requires the establishment of documented procedures for corrective action in response to non-conformance or consumer feedback. Rapid communication systems to deal with unexpected events also need to be established.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure* to demonstrate that a documented procedure for corrective action has been established. The *Water Quality Data Review and Reporting Procedure* details the process for actioning non-conformance identified in the data review process. The procedure establishes requirements for rapid communication of issues including immediate notification to relevant team members in response to abnormal results or exceedances of water quality targets.

Element 6:

Communication

The ADWG Framework requires that communication protocols should be defined with the involvement of relevant agencies and a contact list of key people, agencies and businesses should be prepared. A public and media communications strategy needs to be developed.

⁴³ WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5),.

⁴⁴ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁴⁵ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

WaterNSW provided the *Water Quality Incident Response Protocol*⁴⁶ which includes a flow diagram that details the protocol for notification of stakeholders including water filtration plants, stakeholders, customers and NSW Health, as well as internal stakeholders.

The *Contacts List*⁴⁷ includes internal contacts, Sydney Water contacts, water filtration plant contacts, local councils, NSW Health and other relevant stakeholders. The auditors noted that there were review comments indicating that a couple of the internal contacts may be out of date, additionally, there was no document history or review/approval dates on the list (**OFI-WNSW-2019-04**).

The WQMS states that ‘A Communications Coordinator is included on all incident management teams to coordinate messaging to external stakeholders, government, the media and staff.’ *Joint Communication Protocols*⁴⁸ have been developed with Sydney Water and NSW Health; these include information about developing communication materials in consultation with Sydney Water and NSW Health, including example scripts for a range of incident types to ensure readiness in the event of an incident or emergency. Whilst the *Joint Communication Protocols* are not a documented public and media communications strategy, they do meet the intent of the ADWG, which is to clearly define protocols for both internal and external communications in advance, with the involvement of relevant agencies, including health and other regulatory agencies..

Emergency Response Protocols

The ADWG Framework requires that potential incidents and emergencies should be defined, and procedures and response plans should be documented, with the involvement of relevant agencies. Employees must be trained, and emergency response plans regularly tested. Incidents or emergencies must be investigated, and protocols revised as necessary.

WaterNSW provided the *Incident Management Procedure*⁴⁹ which is WaterNSW’s approach for responding to and recovering from incidents. It includes an ‘all hazards approach’ and includes events that may arise from water quality monitoring results, customer complaints, severe weather warnings and other situations that may affect water quality or customers.

The procedure includes provisions for training, stating that key stakeholder training will be provided annually, and general incident management training will be ongoing. The Emergency Control Centre will be set up and tested annually. Staff members likely to be involved in reporting or managing water quality incidents are required to complete the water quality incident management training module. Mandatory training requirements are set for each role as shown in the mandatory training matrix.⁵⁰

The process for investigating incidents and emergencies is documented in the procedure which also identifies that the incident management framework will be reviewed after an incident, a major organisational change, an emergency exercise or at least every three years.

*Joint Communication Protocols*⁵¹ have been developed with Sydney Water and NSW Health to document the agreed communication and processes for managing incidents between the agencies. The protocol defines specific notifications and actions in response to water quality triggers, within the broader corporate *Incident Management Procedure*. Specific contingency plans^{52,53} have been prepared for likely scenarios such as inflow and algal events at Warragamba Dam.

⁴⁶ WaterNSW, *Water Quality Incident Response Protocol* (CD2004 183[v3]), Apr-18.

⁴⁷ WaterNSW, *Water Quality Contact List* (CD2013 94543).

⁴⁸ WaterNSW, *Joint Communication Protocols* - v1 (D2019 26923), Mar-19.

⁴⁹ WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.

⁵⁰ WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657).

⁵¹ WaterNSW, *Joint Communication Protocols* - v1 (D2019 26923), Mar-19.

⁵² WaterNSW, *Contingency Plan Warragamba Rain V6* (D2016 39701).

⁵³ WaterNSW, *Contingency Plan Warragamba Algae V4* (D2016 92951).

Element 7:

Employee Awareness and Training

The ADWG Framework requires mechanisms and communication procedures to be developed to increase employees' awareness of and participation in drinking water quality management.

WaterNSW has developed a *Water Quality Policy*⁵⁴ which underpins WaterNSW's approach to organisational awareness of water quality management. WaterNSW has developed a *Water Quality Awareness training module*⁵⁵ that is to be completed by all staff every two years. Water quality awareness is a mandatory training module in the *Mandatory Training Matrix*.⁵⁶

Employee Training

The ADWG Framework requires water service providers to ensure that employees, including contractors, maintain the appropriate experience and qualifications. Training needs should be identified and adequate resources made available to support training programs. Records of employee training must be kept and training programs documented.

WaterNSW provided the *Mandatory Training Matrix* which outlines the mandatory training for each employee. The requirements for contractor awareness inductions are included in the Contractor AMS e-learning module.⁵⁷

Element 8:

Community Consultation

The ADWG Framework requires effective community involvement processes to be assessed and a comprehensive strategy to be developed.

Community consultation and engagement activities are routinely undertaken by WaterNSW as part of the *Catchment Protection Work Program*⁵⁸ covering the Sydney Catchment Area. The *Catchment Protection Work Program* includes a section entitled 'Engaged Communities' as one of its major tools for managing water quality risk. To engage with communities, WaterNSW has developed education programs and has surveyed participants to confirm that they have an increased knowledge and understanding of the role of WaterNSW, catchment management and risks to water quality and quantity.

The programs detailed in other parts of the *Catchment Protection Work Program* include consultation with each relevant community, for example, with local government for the Urban Stormwater Program and landowners for the Grazing and Erosion Program to promote programs to improve catchment management and subsequently, drinking water quality.

Communication

The ADWG Framework requires the development of an active two-way communication program to inform consumers and promote awareness of drinking water quality.

The *Catchment Protection Work Program* identifies how WaterNSW gathers feedback from stakeholders relevant to its catchment management programs.

A PowerPoint presentation⁵⁹ was provided as evidence of WaterNSW's 'Levels of Service' Framework, which identifies the parameters that will be used to quantify customer's priorities. It includes gathering information from customers on their desired levels of service. The timeline included in the presentation indicates that a 20-year Infrastructure Strategy will be developed early

⁵⁴ WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.

⁵⁵ WaterNSW, *Water Quality Awareness - eLearning module* (all staff) (D2017 58449).

⁵⁶ WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.

⁵⁷ WaterNSW, *Contractor AMS e-learning module* (D2019 84669).

⁵⁸ WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.

⁵⁹ WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).

in 2020.

Element 9:

Investigative Studies and Research Monitoring

The ADWG Framework requires programs to be established to increase understanding of the water supply system. The information from these programs should be used to improve management of the water supply system.

WaterNSW provided details of its *Science Program*⁶⁰ which has been developed to build knowledge on catchment management strategies and evaluate interventions, water quality management, climate change, extreme events and emerging risks.

Validation of Processes

The ADWG Framework requires that processes and procedures need to be validated to ensure that they are effective in controlling hazards. Processes should be revalidated periodically or when variations in conditions occur.

The overarching *WQMS*⁶¹ mentions audits and review to verify the operation of treatment processes, however, it does not mention validation or revalidation of the water treatment processes (**OFI-WNSW-2019-05**).

Design of Equipment

The ADWG Framework requires that the selection and design of new equipment and infrastructure should be validated to ensure continuing reliability.

WaterNSW provided the *Asset Change Management Procedure*⁶² which covers the framework for initiating changes to infrastructure or new products and processes including stakeholder consultation and risk assessment. The procedure includes reference to a document, *CD2016/68 How to Guide - Design and Scope an ACR* which requires consideration of matters such as risk and contingencies, technical aspects, testing, and user requirements.

Element 10:

Management of Documentation and Records

The ADWG Framework requires information pertinent to all aspects of drinking water quality management to be documented. A document control system should be developed to ensure current versions are in use. A records management system should include details to ensure that employees are trained to fill out records. Processes should ensure the regular reviews of records and periodic review and revision of documentation.

WaterNSW provided the *Controlled Document Procedure*⁶³ which describes the process for creating a new document or a new version of an existing document; criteria for determining a controlled document; how to undertake a review; descriptions of the types of controlled documents; risk ranking; approval levels and archiving obsolete documents.

WaterNSW provided screenshots⁶⁴ demonstrating that all records must be stored in 'ARK', the official records management system for paper and electronic records. The screenshot states that "*All WaterNSW staff will be trained to be general users*", thereby providing evidence that there is a commitment to training staff to fill out records.

⁶⁰ WaterNSW, *Science Program 2016-2020* (D2015 126524), 2016-2020.

⁶¹ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁶² WaterNSW, *Asset Change Management Procedure* (CD2016 57[v2]), Jul-19.

⁶³ WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).

⁶⁴ WaterNSW, *Screenshot ARK Records Management System and Showing Key Contacts* (D2019 84701).

Reporting

The ADWG Framework requires procedures for effective internal and external reporting to be established and an annual report to be made available to consumers, regulatory authorities and stakeholders.

The overarching *WQMS*⁶⁵ details the Annual Review and Continual Improvement Cycle. WQMS reports include monthly management performance reports to the Executive, monthly dashboard reports, quarterly trend analysis reports, annual system health check reports to the Board and annual WQMS reports to IPART. The *Water Quality Data Review and Reporting Procedure*⁶⁶ specifies requirements for routine analysis and reporting and event reporting (section 1.2.8). Annual Water Quality Monitoring and Catchment Management reports are prepared by 30 November each year according to the Operating Licence and published on the WaterNSW website.

Element 11:

Long-term Evaluation of Results

The ADWG Framework requires the collection and evaluation of long-term data to assess performance and identify problems. The results should be documented and reported.

The overarching *WQMS*⁶⁷ states that long-term data analysis is reported in an annual report every two years, with the analysis encompassing a 10-year period. WaterNSW provided the *Water Quality Data Review and Reporting Procedure*⁶⁸ which outlines a process for extracting, analysing and reporting monitoring data.

Audit of Drinking Water Quality Management

The ADWG Framework requires processes for internal and external audits to be established, and audit results to be documented and communicated to management and relevant personnel.

WaterNSW provided the *Audit and Assurance Framework*⁶⁹ which details a process for internal and external audits and assurance activities. The *WQMS Audit Program*⁷⁰ details the frequencies of these processes. The Program includes three 'lines of defence', including process health checks, catchment audits, Aquality benchmarking, assurance audits, and external licence plan audits.

WaterNSW provided a submission⁷¹ to the Aquality assessment tool hosted by the Water Services Association of Australia (WSAA) for benchmarking of water quality management systems. WaterNSW states that it is planning to have the Aquality self-assessment reviewed by an independent consultant.

The WQMS states that performance against the audit schedule and close-out of recommendations is reported in monthly, quarterly and annual reporting.

During the audit interviews, WaterNSW indicated that the independent audits of the implementation of the Water Quality Management System are not undertaken as detailed in the Program, however system health checks were undertaken to meet the requirement for an 'internal audit'. It was explained that this was due to a disconnect in the internal terminology used when referring to 'internal audits' (**OFI-WNSW-2019-06**).

⁶⁵ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁶⁶ WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).

⁶⁷ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁶⁸ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

⁶⁹ WaterNSW, *Audit and Assurance Framework - UNDER REVIEW* (CD2015 55[v2]).

⁷⁰ WaterNSW, *WQMS Audit Program* (D2017 87415).

⁷¹ WaterNSW, *Screenshot-Aquality Assessment Tool Showing Status of Submission* (D2019 85083), undated.

Element 12:

Review by Senior Executive

The ADWG Framework requires the senior executive to review the effectiveness of the management system and evaluate the need for change.

The overarching WQMS⁷² details the *Annual Review and Continual Improvement Cycle*⁷³ which includes risk assessment activities, identification of improvement actions, reporting and review processes through an annual cycle. The *Annual Review and Continual Improvement Cycle* includes development of an Annual System Effectiveness and Health Check report to the Board on performance against targets, audit findings and if any changes to the WQMS are recommended in response to developments or changes in the operating environment or identified opportunities for improvement.

A *How To Guide*⁷⁴ was provided, which identifies triggers for review of the WQMS and regular annual reviews.

Drinking Water Quality Management Improvement Plan

The ADWG Framework requires a drinking water quality management improvement plan to be developed and communicated and implemented, and that improvements are monitored for effectiveness.

WaterNSW provided the *Water Quality Improvement Plan*⁷⁵ which details the improvement actions to be undertaken. WaterNSW reported that the improvement plan was restructured in April 2019 to allow for more regular updates, identify the source of improvement actions and remove business as usual activities. Progress against the *Water Quality Improvement Plan* is reported in monthly performance reports to the Executive, in the annual System Health Check report and forms the basis of the Annual WQMS report to IPART by 1 September each year.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunities for improvement have been identified in respect of this sub-clause:

Element 2:

- **OFI-WNSW-2019-02:** When addressing previous Recommendation 2018-04, consider developing specific guidance on undertaking a water quality data assessment for risk assessment purposes including, identifying all sources of data that should be considered, the parameters, timespan and the minimum standards for trending and analysis.
- **OFI-WNSW-2019-03:** When addressing previous Recommendation 2018-04, consider providing specific guidance on assessing significant risk and prioritisation, including the cut-off for significant risk and how the risk assessment framework should manage significant risk.

Element 6:

- **OFI-WNSW-2019-04:** Review and update the *Contacts List* to ensure it is current and include document management, including review dates to ensure all staff are using the most recent list and that the review dates are visible and auditable.

⁷² WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁷³ WaterNSW, *Annual Review and Continual Improvement Cycle* (D2019 84711), undated.

⁷⁴ WaterNSW, *Review Water Quality Management System - How to Guide* (D2019 64126).

⁷⁵ WaterNSW, *WQ Improvement Plan Apr 2019* (D2019 53719), Apr-19.

Element 9:

- **OFI WNSW-2019-05:** Include a commitment in the WQMS to validation and revalidation of the water treatment processes, including triggers for revalidation.


Element 11:

- **OFI-WNSW-2019-06:** Update the *WQMS Audit Program* to reflect the internal auditing processes relevant to the WQMS or the corporate terminology for auditing as appropriate.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.3 Water Quality Management System (sub-clause 2.1.3)

Sub-clause	Requirement	Compliance Grade
2.1.3	<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> <ul style="list-style-type: none"> a) in the case of water with the final end use as Drinking Water: <ul style="list-style-type: none"> i) a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW); ii) the Australian Drinking Water Guidelines; or iii) any other requirements as specified or approved by NSW Health or IPART, 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 2.1.3(a): <ul style="list-style-type: none"> i) the Australian Guidelines for Water Recycling; or ii) any other requirements as specified or approved by NSW Health or IPART. <p><i>[Note: It is generally expected that Water NSW will manage the water under its control in light of its knowledge of the downstream water supply system, including that of its Customers. Therefore the Water Quality Management System should be developed in consultation with the relevant Customers to whom it Supplies water.]</i></p>	 Compliant (minor shortcomings)
Risk	<p>Without a comprehensive water quality management system, there is a high risk that WaterNSW may not be able to effectively manage risks to water quality and protect public health.</p>	<p>Target for Full Compliance</p> <p>Evidence that a Water Quality Management System has been established, maintained and kept up to date, and that it is consistent with section 25 of the Public Health Act 2010, the ADWG, the AGWR and/or any other requirements as specified by NSW Health.</p>
Obligation	<p>WaterNSW is obliged to establish a WQMS that includes adequate systems and processes in place to manage bulk water quality to its water Supply customers and the Supply of drinking water, taking into account the implementation of planning and risk management across the whole drinking water supply system in the non-declared catchments. The WQMS must be current and cover the categories of water managed by WaterNSW that are captured under the operating licence.</p>	

Evidence sighted

General:

- Water response to 2019 Audit Questionnaire.
- WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

Further evidence is listed by ADWG Element in the following.

Element 1:

- WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.
- WaterNSW, *Compliance Management Framework* (Cd2018 13), 2017.
- WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.
- WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *Water Quality Contacts List* (D2013 94543) undated.
- WaterNSW, *ARK notes Contact list updates* (D2019 79751).

Element 2:

- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
- WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).
- WaterNSW, *C2C Review Base Sheet (unknown)* Undated.

Element 3:

- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
- *C2C Risk Review Process* (D2019 30124).
- WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.

Element 4:

- WaterNSW, *Procedures and Processes for managing WQ* (D2019 30924), 2019.
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130[v5]), May-19.
 - WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.
 - WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).
 - WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.
 - WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).
 - WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]), Jun-19.
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
 - WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.
 - WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
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- WaterNSW, *4.4 Screenshot from EAMS - Prospect destratifier* (D2019 84485), Jun-19.
 - WaterNSW, *Maintenance Plan Data Entry Template* (D2018 16530).
 - WaterNSW, *Procurement Framework* (CD2016 77v2), 6-Jun-19.
 - WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.
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Element 5:

- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
 - WaterNSW, *Water Monitoring Program Manual* (CD2011 176v6), Jun-19.
 - WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).
 - WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
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Element 6:

- WaterNSW, *Water Quality Incident Response Protocol* (CD2004 183[v3]), Apr-18.
 - WaterNSW, *Water Quality Contact List* (CD2013 94543).
 - WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.
 - WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657).
 - WaterNSW, *FRWS Scheme Incident Management Plan* (D2018 116921) March 2019.
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Element 7:

- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
 - WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.
 - WaterNSW, *Water Quality Awareness - eLearning module* (all staff) (D2017 58449).
 - WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.
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Element 8:

- WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).
 - WaterNSW, *FRWS Customer Operations Forum Meeting Minutes* (D2019 24471) 5 March 2019.
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Element 9:

- WaterNSW, *Science Program 2016-2020* (D2015 126524), 2016-2020.
 - WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Asset Change Management Procedure* (CD2016 57[v2]), Jul-19.
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Element 10:

- WaterNSW, *Controlled Document Procedure* (CD2010 135[v6])
 - WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Screenshot ARK Records Management System and Showing Key Contacts* (D2019 84701).
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- WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).
 - WaterNSW, Email -Response to PHU – request for annual report on Fish River (D2019 71255), 9 Jul-19.
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Element 11:

- WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
 - WaterNSW, *Audit and Assurance Framework - UNDER REVIEW* (CD2015 55[v2]).
 - WaterNSW, *WQMS Audit Program* (D2017 87415).
 - WaterNSW, *Screenshot-Aquality Assessment Tool Showing Status of Submission* (D2019 85083), undated.
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Element 12:

- WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Review Water Quality Management System - How to Guide* (D2019 64126).
 - WaterNSW, *WQ Improvement Plan Apr 2019* (D2019 53719), Apr-19.
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Summary of reasons for grade

WaterNSW has established a WQMS that is generally consistent with the requirements of the ADWG for the categories of water supplied within non-declared catchments; however, there are some minor shortcomings.

The minor shortcomings relate to the documentation of the Fish River Water Supply Scheme (FRWSS) verification monitoring plan and the absence of information on the minimum qualifications for water treatment plant operators. These shortcomings are not considered to have compromised the ability of WaterNSW to achieve defined objectives or assure controlled processes in managing risks to water quality; the resultant risk to public health is considered low.

The FRWSS verification monitoring plan does not include identification of supply zones to ensure that sample locations are representative and adequate to cover the complexity of the supply system. Additionally, without the identification of supply zones, it is not possible to assess whether the recommended minimum number of samples per supply zone is achieved.

The *WQMS* does not detail the minimum qualifications and competencies for operators with responsibilities for the FRWSS.

The auditors considered the shortcomings to be ‘minor’ as the verification monitoring program did specify an adequate number of samples based on the total population supplied by all zones and there are processes in place to train employees; however, the documentation did not specify the minimum competencies for water treatment plant operators.

There are two open recommendations from the 2018 Operational Audit relating to Elements 2 and 3 (Recommendation 2018-04) and Element 4 (Recommendation 2018-03) that require WaterNSW to review the manner in which it conducts all water utility risk assessments. Additionally, WaterNSW was required to review the operational and process control procedures underpinning the WQMS, identify required operational procedures, and develop a plan for compiling them. These recommendations are not due to be completed until 31 December 2019; therefore assessment of WaterNSW’s compliance with the implementation of Elements 2,3 and 4 has been captured within the assessment of those recommendations, to prevent the development of new recommendations that would be addressed through closing out the previous recommendations.

WaterNSW has been assessed as Compliant (with minor shortcomings) for this Licence obligation.

Discussion and notes

The WQMS identifies the categories of water that are covered within its scope, which include drinking water and bulk water supplied for treatment. There are no categories of water identified in the WQMS that do not have drinking water as an end use; therefore the WQMS is required to be consistent with the ADWG. The principles of the ADWG have been applied to these categories, as well as the requirements for a relevant quality assurance program under section 25 of the *Public Health Act 2010* (NSW), where relevant. The *Australian Guidelines for Water Recycling* (AGWR) are not relevant to any of the WaterNSW's operations.

As detailed in the assessment of clause 2.1.1 (refer Table 3.1), the 'Water transferred from the Murray River to Broken Hill' is included in the WQMS but is not required to be captured under the ADWG, as it does not meet the definition of 'Supply' under the Licence.

Maintenance of the WQMS to be consistent with each ADWG Element is discussed below.

Element 1:

Drinking Water Policy

The ADWG Framework requires a drinking water quality policy to be formulated, endorsed by senior executive, and implemented throughout the organisation. The policy must be visible and communicated, understood and implemented by employees.

WaterNSW provided the *Drinking Water Policy*⁷⁶ which was approved by the Chief Executive Officer and Board of WaterNSW. The policy is up to date and current.

The policy applies to water supplied by WaterNSW as drinking water, or as bulk water with the final end use as drinking water (supplied by pipe or canal directly to a drinking water supplier). When this policy applies, WaterNSW is committed to supplying water that complies with appropriate water quality guidelines or standards to minimise risks to public health.

The WQMS states that the policy is published on the WaterNSW intranet and displayed at WaterNSW facilities to communicate its requirements to employees. The policy is also included in water quality awareness training to ensure it is understood and employees are aware of their responsibilities for its implementation.

Regulatory and Formal Requirements

The ADWG Framework requires relevant regulatory and formal requirements to be identified and documented, responsibilities understood and communicated to employees and requirements reviewed periodically to reflect any changes.

WaterNSW provided the *Compliance Management Framework*⁷⁷ which details WaterNSW's 'Compliance Policy' and the process for identifying obligations and maintaining an up to date register of obligations. The Framework also includes a process for assessing compliance risks and implementation of the compliance framework. The WQMS states that specific compliance obligations are communicated to relevant staff using the Risk Assurance and Compliance System (RACS). The WQMS states that the legal and other obligations are reviewed every six months and compliance is reported to the Board every six months. The Framework is reviewed every three years.

Engaging Stakeholders

The ADWG Framework requires all stakeholders who could affect, or be affected by, decisions or

⁷⁶ WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.

⁷⁷ WaterNSW, *Compliance Management Framework* (Cd2018 13), 2017.

activities of the drinking water supplier to be identified and appropriate mechanisms and documentation for stakeholder commitment and involvement to be developed. A list of relevant agencies needs to be updated regularly.

WaterNSW maintains a list⁷⁸ of water quality contacts and provided the *ARK notes Contact list updates*,⁷⁹ which provides an example of how the stakeholder contacts list is updated and amended. The WQMS states that the stakeholder list is updated 'regularly'.

Element 2:

Water Supply System Analysis

The ADWG Framework requires the water supply system to be analysed by a team with appropriate knowledge and expertise. Pertinent information must be assembled and key characteristics of the water supply system to be considered. A flow diagram must be constructed that shows the water supply system from catchment to consumer. The water supply system analysis must be periodically reviewed.

WaterNSW provided the *Water Quality Management System (WQMS)*⁸⁰ which provides an overview on the water quality system analysis. The *Fish River Water Supply Drinking Water Quality Management System (FRWSS DWQMS)*⁸¹ was provided as evidence of the risk assessment process for the FRWSS. The *C2C Risk Review Process*⁸² is referenced in the overarching WQMS and the FRWSS DWQMS and details the catchment to customer risk review process. The *C2C Risk Review Process* includes a requirement to identify the risk review group, develop or update the schematics for each supply and to identify the data requirements needed for the review. The *C2C Risk Review Process* includes a requirement to develop a schedule for a 5 yearly full review of the risk assessment.

Assessment of Water Quality Data

The ADWG Framework requires the collection historical data from source waters, treatment plants and finished water supplied to customers. Exceedances must be examined, and data should be assessed to identify trends and potential problems.

The *C2C Risk Review Process* includes a requirement to assemble all relevant material pertaining to incidents, WQ data; trends; CCP performance. The *WQ Data Review and Reporting Procedure*⁸³ provides guidance on extracting and reviewing data but does not link back directly to the risk assessment process. The *C2C Risk Review Process* and *WQ Data Review and Reporting Procedure* provide limited guidance on the types of catchment and other data, the parameters to be analysed and the dataset that should be included in the analysis. This could be improved by detailing within the *C2C Risk Review Process* or a standalone procedure, the process for conducting a water quality data assessment for risk assessment purposes. This should be considered when addressing previous Recommendation 2018-04 (**OFI-WNSW-2019-02**).

Hazard Identification and Risk Assessment

The ADWG Framework requires that the approach and methodology to be used for hazard identification and risk assessment should be defined, and the hazards, sources and hazardous events for each component of the water supply system should be documented. The level of risk for each identified hazard or hazardous event should be estimated and the major sources of uncertainty associated with each hazard and hazardous event evaluated. Significant risks should be determined and priorities for risk management documented. The hazard identification and risk assessment should be periodically reviewed and updated to incorporate any changes.

⁷⁸ WaterNSW, *Water Quality Contacts List* (D2013 94543), undated.

⁷⁹ WaterNSW, *ARK notes Contact list updates* (D2019 79751).

⁸⁰ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁸¹ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

⁸² WaterNSW, *C2C Risk Review Process* (D2019 30124).

⁸³ WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).

The *C2C Risk Review Process* includes an action to ‘*set the risk assessment criteria*’ with the risk matrix to be discussed and the likelihood and consequence category to be clearly defined, and a consensus to be reached on the risk matrix. The process includes two workshops, the first to discuss the over-arching issues and prioritise risk, and the second to discuss and resolve outstanding issues. Assessment of uncertainty is captured in the initial discussions. Whilst the *C2C Risk Review Process* and the WQMS mention risk prioritisation, there is no definition of ‘significant risk’. The level of significant risk should be defined to establish where a risk is unacceptable to the organisation, and this should drive the risk prioritisation process. Subsequent elements on the ADWG Framework assume that significant risk has been identified as part of the risk assessment process. The process for identifying significant risk and the subsequent prioritisation of risk should be detailed in the *C2C Risk Review Process* to ensure consistency across risk assessments. This should be considered when addressing previous Recommendation 2018-04 (**OFI-WNSW-2019-03**).

The *C2C Risk Review Process* includes a requirement to develop a schedule for a 5-yearly full review of the risk assessment and also states that ‘*risks arising from any new hazards, hazardous-events and process changes will be reviewed as they arise on an ongoing basis by a JOG working group*’.

Element 3:

Preventive Measures and Multiple Barriers

The ADWG Framework requires the identification and documentation of preventive measures for each significant hazard or hazardous event and estimation of residual risk. The need for additional preventive measures should be evaluated where improvement is required.

The FRWSS DWQMS⁸⁴ provides a summary of the existing controls in the catchment, storage, delivery, treatment and distribution systems for each hazard/hazardous event row in the risk assessment. The risk assessment includes a column for ‘*Proposed Controls*’ which captures the improvements required. Additionally, the *C2C Risk Review Process*⁸⁵ includes a requirement to ‘*Identify Improvement Actions*’.

Critical Control Points

The ADWG Framework requires assessment of preventive measures from catchment to customer to identify critical control points (CCPs) Mechanisms for operational control should be established and the CCPs, critical limits and target criteria documented.

CCPs have been established for the FRWSS and these are documented in the FRWSS DWQMS.

Element 4:

Operational Procedures

The ADWG framework requires procedures to be identified for processes and activities from catchment to consumer. Procedures should be compiled into an operations manual.

WaterNSW provided a list of operational procedures ‘*Procedures and Processes for managing WQ*’⁸⁶ that have been developed to manage its activities and processes. Review of the list confirmed that the procedures cover activities including catchments, raw water storages, operation of infrastructure, monitoring and inspection, incident management and consumer liaison. A number of operations and maintenance manuals were included on the list.

Example were provided to demonstrate that procedures are documented including:

⁸⁴ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

⁸⁵ SydneyWater, *C2C Risk Review Process* (D2019 30124).

⁸⁶ WaterNSW, *Procedures and Processes for managing WQ* (D2019 30924), 2019

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- *Water Quality Data Review and Reporting Procedure*;⁸⁷
 - *Materials and Chemicals with Drinking Water Supplies Procedure*;⁸⁸
 - *Complaints and Compliments Handling Procedure*;⁸⁹
 - *Incident Management Procedure*;⁹⁰ and
 - *Controlled Document Procedure*.⁹¹

A recommendation from the 2018 Operational Audit (Recommendation 2018-03) requires WaterNSW to (by 31 December 2019) review the operational and process control procedures underpinning its WQMS and commence implementation of the plan and document operational procedures for all processes and activities (e.g. preventive measures, operational monitoring and verification procedures and maintenance requirements). This audit reports on the progress in implementing that recommendation in lieu of making further recommendations for this element (refer Table 4.5).

Operational Monitoring

The ADWG Framework requires monitoring protocols to be developed to evaluate operational performance of the water supply system, including the selection of operational parameters and criteria, and the routine analysis of results. The protocols should be documented in an operational monitoring plan.

WaterNSW provided the *Water Monitoring Program Manual*⁹² as evidence that operational monitoring has been compiled into a documented plan. The Manual includes monitoring the non-declared catchments from catchment to tap, including the monitoring of CCPs and other measures of operational performance. The Manual includes the identification of operational parameters, target criteria and critical limits for the FRWSS.

Corrective Action

The ADWG Framework requires the establishment and documentation of procedures for corrective action to control excursions in operational parameters and for rapid communication systems to deal with unexpected events.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure*⁹³ which provides a framework for reviewing operational data and ensuring exceptions have been notified to the relevant person, including immediate verbal notification of water supply threats and development of suggested corrective actions. Verbal notifications are to be followed up by email and formal documentation of the event.

The *WQ Incident Response Protocol CCP tables*⁹⁴ and the CCPs tables in the FRWSS DWQMS⁹⁵ include corrective actions to be taken in response to an adjustment or critical limit exceedance. Actions include communication (internal and external), operational changes and implementation of incident protocols.

Equipment Capability and Maintenance

The ADWG Framework requires water service provider to ensure that equipment performs adequately and provides sufficient flexibility and process control. Programs for regular inspection

⁸⁷ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130[v5]), May-19.

⁸⁸ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.

⁸⁹ WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).

⁹⁰ WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.

⁹¹ WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).

⁹² WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]), Jun-19.

⁹³ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

⁹⁴ WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.

⁹⁵ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

and maintenance of all equipment, including monitoring equipment should be established.

WaterNSW provided the *Water Quality Management System (WQMS)*⁹⁶ that states that ‘*Operations and Maintenance manuals have been developed for each major part of the water supply infrastructure.*’ Maintenance schedules have been captured in an Enterprise Asset Management (EAM) software framework with a screenshot⁹⁷ of an EAM entry as evidence of the establishment of the maintenance system. A spreadsheet⁹⁸ showing maintenance scheduling for a range of equipment types including analysers was provided to demonstrate that the maintenance plan covers monitoring equipment.

Materials and Chemicals

The ADWG Framework requires water service providers to ensure that only approved materials and chemicals are used and that documented procedures for evaluating chemicals, materials and suppliers are established.

WaterNSW provided *Procurement Framework*⁹⁹ which includes a section relating to protecting water quality in procurement. The *Materials and Chemicals with Drinking Water Supplies Procedure*¹⁰⁰ has been established for the purchase and use of materials and chemicals in contact with drinking water supplies, which is referenced in the WQMS. The procedure covers water treatment chemicals, materials used in plumbing, cleaning products, firefighting chemicals, herbicides and pesticides used across all of WaterNSW water supply systems. Standards for procurement of suitable materials are documented, in addition to requirements for clean-up of spills, selection of reputable suppliers, and processes for receipt of chemicals and materials. The procedure also includes a list of relevant approved chemicals.

Element 5:

Drinking Water Quality Monitoring

The ADWG Framework requires that the characteristics to be monitored in the distribution system and in water as supplied to the consumer should be determined and documented in a sampling plan for each characteristic, including the location and frequency of sampling. The monitoring data must be representative and reliable.

WaterNSW provided the *Water Monitoring Program Manual*¹⁰¹ which includes the monitoring of drinking water supplied under the FRWSS, private water supplies at picnic areas and rural dams, bulk water supplied for treatment and other monitoring that is outside of the WQMS. The Manual includes the characteristics to be monitored for chlorinated raw water supplied to FRWSS customers, based on the supply contracts. The characteristics include physical and chemical parameters, algal counts and microbiological indicators to provide an indication of potential problems within the water supply system. The Manual also specifies the frequency of monitoring for each characteristic.

The FRWSS DWQMS¹⁰² states that the scheme supplies a population of approximately 6,500. The ADWG (Table 9.4) recommends that *Escherichia coli* sampling for schemes with 5,000-100,000 people, should be undertaken weekly in each monitoring zone with an additional sampling per month for each zone. For monitoring zones with a population of <1000, a weekly sample should be taken in each zone (52 samples/year). The Monitoring Program identifies the following *E. coli* monitoring for the FRWSS:

- monthly at the filtration plant (12/year);

⁹⁶ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

⁹⁷ WaterNSW, *4.4 Screenshot from EAMS - Prospect destratifier* (D2019 84485), Jun-19.

⁹⁸ WaterNSW, *Maintenance Plan Data Entry Template* (D2018 16530).

⁹⁹ WaterNSW, *Procurement Framework* (CD2016 77v2), 6-Jun-19.

¹⁰⁰ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.

¹⁰¹ WaterNSW, *Water Monitoring Program Manual* (CD2011 176v6), Jun-19.

¹⁰² WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

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- fortnightly at the Rydal Reservoir (24/year); and
 - bi-monthly at six distribution sites (36/year).

The FRWSS DWQMS identifies the following townships/supply zones within the system:

- Direct supply customers (population 226);
- Marangaroo (population 100);
- Rydal (population 100);
- Wallerawang (population 2400);
- Lidsdale (population 100);
- Portland (population 2200);
- Cullen Bullen (population 200); and
- Glen Davis (population 100).

Whilst the recommended minimum number of annual samples are taken over the whole system, it does not appear that the recommended frequency of weekly sampling has been met. Additionally, the ‘monitoring zones’ have not been clearly specified and the recommended minimum frequency of weekly for ‘monitoring zones’ has not been met (**REC-WNSW-2019-01**).

Consumer Satisfaction

The ADWG Framework requires a consumer complaint and response program to be established, and that it includes appropriate training of employees.

The WQMS¹⁰³ includes details of customer communication in the form of Customer Advisory Groups (CAGs) to consult with customers on the water delivery, pricing and levels of service.

WaterNSW provided the *Complaints and Compliments Handling Procedure*¹⁰⁴ which includes additional requirements for immediate notification to the Customer Experience Service Improvement Specialist where a water quality complaint has been received.

The WQMS states that all WaterNSW staff have six monthly performance reviews and, where the position requires knowledge of water quality management or experience in incident management, the requirement will be recorded including proposed methods for obtaining the required skills or experience. The *Complaints and Compliments Handling Procedure* states that all Customer Service Officers will receive specific training in handling water quality complaints.

Short-term Evaluation of Results

The ADWG Framework requires the establishment of procedures for the daily review of drinking water quality monitoring data and consumer satisfaction, and the development of internal and external reporting mechanisms.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure*¹⁰⁵ as evidence of short-term review of performance. The procedure details the methodology for review of data as well as the preparation and timing of reports; for example, a ‘Water Quality Report’ is required to be prepared within eight days of a sampling event.

The auditors noted that the scope of the procedure appears to be limited to the raw water supply agreements; however, the details contained within the procedure include the picnic areas and is likely to include the FRWSS, but this is not specifically stated (**OFI-WNSW-2019-07**). The *Water Quality Data Review and Reporting Procedure* is referenced in the FRWSS DWQMS.

¹⁰³ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

¹⁰⁴ WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).

¹⁰⁵ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

Corrective Action

The ADWG Framework requires document procedures to be established for corrective action in response to non-conformance or consumer feedback. Rapid communication systems to deal with unexpected events also need to be established.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure* to demonstrate that a documented procedure for corrective action has been established. The *Water Quality Data Review and Reporting Procedure* details the process for actioning non-conformance identified in the data review process. The procedure establishes requirements for rapid communication of issues including immediate notification to relevant team members in response to abnormal results or exceedances of water quality targets.

Element 6:

Communication

The ADWG Framework requires that communication protocols should be defined with the involvement of relevant agencies and a contact list of key people, agencies and businesses should be prepared. A public and media communications strategy needs to be developed.

WaterNSW provided the *Water Quality Incident Response Protocol*,¹⁰⁶ which identifies the FRWSS and other categories of water within the non-declared catchment. The protocol includes a flow diagram that details the protocol for notification of stakeholders including stakeholders, customers and NSW Health, as well as internal stakeholders. WaterNSW provided the *Fish River Water Supply Scheme Incident Management Plan*¹⁰⁷ which details the methods of communication during an incident associated with the FRWSS. The *Fish River Water Supply Scheme Incident Management Plan* includes details of media communication and templates for communication during an incident and emergency meeting the intent of the ADWG, which is to clearly define protocols for both internal and external communications in advance, with the involvement of relevant agencies, including health and other regulatory agencies.

The *Fish River Water Supply Scheme Incident Management Plan* includes contacts relevant to the FRWSS. WaterNSW also provided the *Contacts List*,¹⁰⁸ which includes internal contacts, local councils, NSW Health and other relevant stakeholders. The auditors noted that there were review comments indicating that a couple of the internal contacts may be out of date; additionally, there was no document history or review/approval dates on the list (**OFI-WNSW-2019-04**).

Emergency Response Protocols

The ADWG Framework requires that potential incidents and emergencies should be defined and procedures and response plans should be documented with the involvement of relevant agencies. Employees must be trained and emergency response plans regularly tested. Incidents or emergencies must be investigated, and protocols revised as necessary.

WaterNSW provided the *Incident Management Procedure*¹⁰⁹ which is WaterNSW's approach for responding to and recovering from incidents. It includes an 'all hazards approach' and includes events that may arise from water quality monitoring results, customer complaints, severe weather warnings and other situations that may affect water quality or customers.

The procedure includes provision for training, stating that key stakeholder training will be provided annually, and general incident management training will be ongoing. The Emergency Control Centre will be set up and tested annually. Staff members likely to be involved in reporting or managing water quality incidents are required to complete the water quality incident

¹⁰⁶ WaterNSW, *Water Quality Incident Response Protocol* (CD2004 183[v3]), Apr-18.

¹⁰⁷ WaterNSW, *FRWS Scheme Incident Management Plan* (D2018 116921), March 2019.

¹⁰⁸ WaterNSW, *Water Quality Contact List* (CD2013 94543).

¹⁰⁹ WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.

management training module. Mandatory training requirements are set for each role as shown in the mandatory training matrix.¹¹⁰

The process for investigating incidents and emergencies is documented in the procedure which also identifies that the incident management framework will be reviewed after an incident, a major organisational change, an emergency exercise or at least every three years.

WaterNSW provided the *Fish River Water Supply Scheme Incident Management Plan* as evidence of the scheme specific incident management framework for the FRWSS.

Element 7:

Employee Awareness and Training

The ADWG Framework requires mechanisms and communication procedures to be developed to increase employee awareness of and participation in drinking water quality management.

WaterNSW has developed a *Water Quality Policy*¹¹¹ which underpins WaterNSW's approach to organisational awareness of water quality management. WaterNSW has developed a *Water Quality Awareness training module*¹¹² that is to be completed by all staff every two years. Water quality awareness is a mandatory training module in the *Mandatory Training Matrix*.¹¹³

Employee Training

The ADWG Framework requires water service providers to ensure that employees, including contractors, maintain the appropriate experience and qualifications. Training needs should be identified and adequate resources made available to support training programs. Records of employee training must be kept and training programs documented.

WaterNSW provided the *Mandatory Training Matrix* which outlines the mandatory training for each employee. The requirements for contractor awareness inductions are included in the *Contractor AMS e-learning module*.¹¹⁴ It was noted by the auditors that the matrix does not identify formal qualifications for personnel responsible for water treatment at FRWSS. Additionally, the FRWSS DWQMS does not mention formal qualifications for water treatment operators (**REC-WNSW-2019-02**).

Element 8:

Community Consultation

The ADWG Framework requires effective community involvement processes to be assessed and a comprehensive strategy to be developed.

Community consultation undertaken by WaterNSW is detailed in the FRWSS DWQMS. Lithgow Council takes the lead in community consultation with advice from WaterNSW. If there is a health concern, then any required communications with the general public will be undertaken collaboratively with Lithgow Council after consultation with NSW Health.

The FRWSS DWQMS states that WaterNSW maintains information on how the Greater Sydney water supply system works, water quality and quantity, current projects and consultation activities on its website and makes Annual Water Quality Monitoring and Catchment Management Activities reports available for download.

WaterNSW provided evidence¹¹⁵ of establishment of the FRWSS Customer Operations Forum. A Customer Advisory Group (CAG) has been established to provide a forum for customer

¹¹⁰ WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657).

¹¹¹ WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.

¹¹² WaterNSW, *Water Quality Awareness - eLearning module* (all staff) (D2017 58449).

¹¹³ WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.

¹¹⁴ WaterNSW, *Contractor AMS e-learning module* (D2019 84669).

¹¹⁵ WaterNSW, FRWS Customer Operations Forum Meeting Minutes (D2019 24471), 5 March 2019.

consultation on water delivery strategies, asset management, pricing and levels of service for water users.

Communication

The ADWG Framework requires an active two-way communication program to inform consumers and promote awareness of drinking water quality issues to be developed.

The FRWSS DWQMS states that the WaterNSW website has a feedback and complaints policy and a link to a customer feedback and complaints form. WaterNSW has a Customer Helpdesk dedicated to providing customers service. Feedback or complaints received via the Helpdesk or website that are of relevance to Lithgow Council are passed on and processed with the appropriate remediation if necessary.

A PowerPoint presentation¹¹⁶ was provided as evidence of WaterNSW's 'Levels of Service' Framework, which identifies the parameters that will be used to quantify customer's priorities. It includes gathering information from customers on their desired levels of service. The timeline presented in the presentation indicates that a 20-year Infrastructure Strategy will be developed early in 2020.

Element 9:

Investigative Studies and Research Monitoring

The ADWG Framework requires programs to be established to increase understanding of the water supply system. The information from the programs should be used to improve management of the water supply system.

WaterNSW provided details of its *Science Program*¹¹⁷ which has been developed to build knowledge on catchment management strategies and evaluation of interventions, water quality management, climate change, extreme events, and emerging risks.

Validation of Processes

The ADWG Framework requires processes and procedures to be developed to ensure that they are effective in controlling hazards. Processes should be revalidated periodically or when variations in conditions occur.

The overarching WQMS¹¹⁸ and FRWSS DWQMS¹¹⁹ mention audits and review to verify the operation of treatment processes, however, they do not mention validation or revalidation of the water treatment processes (**OFI-WNSW-2019-05**).

Design of Equipment

The ADWG Framework requires that the selection and design of new equipment and infrastructure should be validated to ensure continuing reliability. WaterNSW provided the *Asset Change Management Procedure*¹²⁰ which covers the framework for initiating changes to infrastructure or new products and processes including stakeholder consultation and risk assessment. The procedure includes reference to a document, *CD2016/68 How to Guide - Design and Scope an ACR* which requires consideration of matters such as risk and contingencies, technical aspects, testing, and user requirements.

¹¹⁶ WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).

¹¹⁷ WaterNSW, *Science Program 2016-2020* (D2015 126524), 2016-2020.

¹¹⁸ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

¹¹⁹ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

¹²⁰ WaterNSW, *Asset Change Management Procedure* (CD2016 57[v2]), Jul-19.

Element 10:

Management of Documentation and Records

The ADWG Framework requires information pertinent to all aspects of drinking water quality management to be documented. A records management system should include details to ensure that employees are trained to fill out records. Processes should ensure the regular reviews of records and periodic review and revision of documentation.

WaterNSW provided the *Controlled Document Procedure*¹²¹ which describes the process for creating a new document or a new version of an existing document; criteria for determining a controlled document; how to undertake a review; descriptions of the types of controlled documents; risk ranking; approval levels and archiving obsolete documents.

WaterNSW provided screenshots¹²² demonstrating that all records must be stored in ‘ARK’, the official records management system for paper and electronic records. The screenshot states that “*All WaterNSW staff will be trained to be general users*”, thereby providing evidence that there is a commitment to training staff to fill out records.

Reporting

The ADWG Framework requires procedures for effective internal and external reporting to be established and an annual report to be made available to consumers, regulatory authorities and stakeholders.

The overarching *WQMS*¹²³ details the Annual Review and Continual Improvement Cycle. WQMS reports include monthly management performance reports to the Executive, monthly dashboard reports, quarterly trend analysis reports, annual system health check reports to the Board, and annual WQMS reports to IPART. The *Water Quality Data Review and Reporting Procedure*¹²⁴ specifies requirements for routine analysis and reporting and event reporting (section 1.2.8). Annual Water Quality Monitoring and Catchment Management reports are prepared by 30 November each year according to the Operating Licence and published on the WaterNSW website.

WaterNSW prepared an annual report for the FRWSS and submitted it to NSW Health, which is in line with the guidance provided by NSW Health on its website and NSW Health’s email¹²⁵ to WaterNSW, which requested an annual review report for the FRWSS. The overarching WQMS and the FRWSS DWQMS do not identify the process of submitting an annual water quality report to NSW Health (**OFI-WNSW-2019-08**).

Element 11:

Long-term Evaluation of Results

The ADWG Framework requires the collection and evaluation of long-term data to assess performance and identify problems. The results should be documented and reported.

The overarching *WQMS* states that long terms data analysis s reported in an annual report every two years, with the analysis encompassing a 10-year period.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure*¹²⁶ which outlines a process for extracting, analysing and reporting monitoring data.

¹²¹ WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).

¹²² WaterNSW, *Screenshot ARK Records Management System and Showing Key Contacts* (D2019 84701).

¹²³ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

¹²⁴ WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012 130v5).

¹²⁵ WaterNSW, Email -Response to PHU – request for annual report on Fish River (D2019 71255), 9 Jul-19.

¹²⁶ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

Audit of Drinking Water Quality Management

The ADWG Framework requires processes for internal and external audits to be established, and audit results to be documented and communicated to management and relevant personnel.

WaterNSW provided the *Audit and Assurance Framework*¹²⁷ which details a process for internal and external audits and assurance activities. The *WQMS Audit Program*¹²⁸ details the frequencies of these processes. The Program includes three 'lines of defence', including process health checks, catchment audits, Aquality benchmarking, assurance audits, and external licence plan audits.

WaterNSW provided a submission¹²⁹ to the Aquality assessment tool hosted by the Water Services Association of Australia (WSAA) for benchmarking of water quality management systems. WaterNSW states that it is planning to have the Aquality self-assessment reviewed by an independent consultant.

The WQMS states that performance against the audit schedule and close-out of recommendations is reported in monthly, quarterly and annual reporting.

During the audit interviews, WaterNSW indicated that the independent audits of the implementation of the Water Quality Management System are not undertaken as detailed in the Program. It was explained that this was due to a disconnect in the internal terminology used when referring to 'internal audits' (**OFI-WNSW-2019-06**).

Element 12:

Review by Senior Executive

The ADWG Framework requires the senior executive to review the effectiveness of the management system and evaluate the need for change.

The overarching WQMS¹³⁰ details the *Annual review and Continual Improvement Cycle*¹³¹ which includes risk assessment activities, identification of improvement actions, reporting and review processes through an annual cycle. The *Annual Review and Continual Improvement Cycle* includes development of an Annual System Effectiveness and Health Check report to the Board on performance against targets, audit findings and if any changes to the WQMS are recommended in response to developments or changes in the operating environment or identified opportunities for improvement.

A *How To Guide*¹³² was provided, which identifies triggers for review of the WQMS and regular annual reviews.

The FRWSS DWQMS¹³³ states that the management system is reviewed annually.

Drinking Water Quality Management Improvement Plan

The ADWG Framework requires a drinking water quality management improvement plan to be developed and communicated and implemented, and that improvements are monitored for effectiveness.

WaterNSW provided the *Water Quality Improvement Plan*¹³⁴ which detail the improvement actions to be undertaken. WaterNSW reported that the improvement plan was restructured in April 2019 to allow for more regular updates, identify the source of improvement actions and remove business as usual activities. Progress against the *Water Quality Improvement Plan* is reported in monthly

¹²⁷ WaterNSW, *Audit and Assurance Framework* - UNDER REVIEW (CD2015 55[v2]).

¹²⁸ WaterNSW, *WQMS Audit Program* (D2017 87415).

¹²⁹ WaterNSW, *Screenshot-Aquality Assessment Tool Showing Status of Submission* (D2019 85083), undated.

¹³⁰ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

¹³¹ WaterNSW, *Annual Review and Continual Improvement Cycle* (D2019 84711), undated.

¹³² WaterNSW, *Review Water Quality Management System - How to Guide* (D2019 64126).

¹³³ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

¹³⁴ WaterNSW, *WQ Improvement Plan Apr 2019* (D2019 53719), Apr-19.

performance reports to the Executive, in the annual System Health Check report and forms the basis of the Annual WQMS report to IPART by 1 September each year.

Recommendations

The following recommendations are made in respect of this obligation:

Element 5:

- **REC-WNSW-2019-01:** By 30 September 2020, WaterNSW must review the Fish River Water Supply Scheme verification monitoring plan to:
 - identify the monitoring zones;
 - specify the minimum of weekly testing of E. coli is undertaken in each monitoring zone in accordance with the ADWG requirements;
 - review the implementation of the program to ensure that testing is undertaken in accordance with the monitoring plan; and
 - establish review and reporting processes to confirm and report compliance with the program (e.g. reporting should verify the number of samples taken).

Element 7:

- **REC-WNSW-2019-02:** By 30 September 2020, WaterNSW must identify the minimum qualifications and competencies for personnel operating water treatment processes and incorporate these into the training processes such as the 'Mandatory Training Matrix'. The minimum qualifications and competencies should be based on industry standards such as WIOA Water Industry Operator Certification Scheme or similar.
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Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

Element 2:

- **OFI-WNSW-2019-02:** When addressing previous Recommendation 2018-04, consider developing specific guidance on undertaking a water quality data assessment for risk assessment purposes including, identifying all sources of data that should be considered, the parameters, timespan and the minimum standards for trending and analysis.
- **OFI-WNSW-2019-03:** When addressing previous Recommendation 2018-04, consider providing specific guidance on assessing significant risk and prioritisation, including the cut-off for significant risk and how the risk assessment framework should manage significant risk.

Element 5:

- **OFI-WNSW-2019-07:** Review the scope of the *Water Quality Data Review and Reporting Procedure* to specify all categories of water covered by the operating licence.

Element 6:

- **OFI-WNSW-2019-04:** Review and update the *Contacts List* to ensure it is current and include document management, including review dates to ensure all staff are using the most recent list and that the review dates are visible and auditable.

Element 9:

- **OFI-WNSW-2019-05:** Include a commitment in the WQMS to validation and revalidation of the water treatment processes, including triggers for revalidation.
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Element 10:

- **OFI-WNSW-2019-08:** Document the process of preparing a drinking water annual review report and submitting it to NSW Health Public Health Unit in the WQMS or FRWSS DWQMS.


Element 11:

- **OFI-WNSW-2019-06:** Update the *WQMS Audit Program* to reflect the internal auditing processes relevant to the WQMS or the corporate terminology for auditing as appropriate.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.4 Water Quality Management System (sub-clause 2.1.4)

Sub-clause	Requirement	Compliance Grade
2.1.4	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.	 Compliant (minor shortcomings)

Risk

If the Water Quality Management System is not fully implemented, there is a high risk that WaterNSW may not be able to effectively manage risks to water quality and protect public health.

Target for Full Compliance

Evidence that the Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the System, including to the satisfaction of NSW Health.

Obligation

WaterNSW is obliged to fully implement its WQMS and relevant supporting processes to ensure that activities are undertaken as specified in the WQMS to manage risk to water quality. In order to demonstrate that the actions are being undertaken as per the WQMS, appropriate records must be maintained.

Evidence sighted

General:

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
- WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

Further evidence is listed by ADWG Element in the following.

Element 1:

- WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.
- WaterNSW, *Water Quality Awareness - eLearning module (all staff)* (D2017 58449).
- WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.
- WaterNSW, *Contractor AMS e-learning module* (D2019 84669).
- WaterNSW, *Email – New Mandatory Training (Water Quality)* (D2019 121176), 15 Jul-19.
- WaterNSW, *WQ Awareness (GEN10) Outstanding Training* (D2019 84668), 10-Jul-19.
- CCH Parliament, *Alert of Reg Changes* (D2019 83744), 20-Jul-18.
- WaterNSW, *Compliance Management Framework* (Cd2018 13), 2017.
- WaterNSW, *Legal Register Review*, 18 September 2019.
- WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.
- WaterNSW, *Annual Catchment Management Report 2017-18* (D2019 84679), 2017-18.

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- WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).
 - WaterNSW, *Water Quality Contacts List* (D2013 94543), undated.
 - WaterNSW, *ARK notes Contact list updates* (D2019 79751).
 - WaterNSW, *NSW Health thank you WS Quality Assurance Plans* (D2019 68208), 27-Jun-19.
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Element 2:

- WaterNSW, *G.Sydney WSS Schematic* (D2016 96321) (undated).
 - WaterNSW, *Blue Mountains WSS Schematic* (D2017 68141) (undated).
 - WaterNSW, *Oberon Handover Map* (unknown) (undated).
 - WaterNSW, *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (unknown)(undated).
 - WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated).
 - WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.
 - WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.
 - WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
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Element 3:

- WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated).
 - WaterNSW, *C2T MidTerm Review – Oberon-Lithgow 2018* (unknown)(undated).
 - WaterNSW, *C2C 5 yr Base Sheet* (unknown)(undated).
 - WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.
 - WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
 - WaterNSW, *Daily Turbidity Report - How-to Guide* (D2016 144707).
 - WaterNSW, *Qlty Water Quality Performance and Trend - Item 6.1* (D2019 75157), Aug-19.
 - WaterNSW, *Daily Maximum Turbidity at 7/22/2019 3:15 am* (D2019 84419), 22-Jul-19.
 - WaterNSW, *SCADA plots showing CCP alarms* (D2019 84421), 10-Sep-18.
 - WaterNSW, *FW MyWaterNSW Incident CCP change* (26 September 2019).
 - WaterNSW, *Daily Turbidity for 24 hrs to midnight on 25 July 2019* (D2019 84422), 25-Jul-19.
 - WaterNSW, *Screenshot: elevated turbidity at Avon picnic area* (D2019 85729).
 - WaterNSW, *Daily Turbidity for 24 hrs to midnight on 1 July 2019* (D2019 67905), 2-Jul-19.
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Element 4:

- WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130[v5]), May-19.
 - WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.
 - WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).
 - WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.
 - WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).
 - WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]), Jun-19.
 - WaterNSW, *Daily Turbidity Report - How-to Guide* (D2016 144707).
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- WaterNSW, *Qlty Water Quality Performance and Trend - Item 6.1* (D2019 75157), Aug-19.
 - WaterNSW, *Daily Maximum Turbidity at 7/22/2019 3:15 am* (D2019 84419), 22-Jul-19.
 - WaterNSW, *SCADA plots showing CCP alarms* (D2019 84421), 10-Sep-18.
 - WaterNSW, *Daily Turbidity for 24 hrs to midnight on 25 July 2019* (D2019 84422), 25-Jul-19.
 - WaterNSW, *Screenshot: elevated turbidity at Avon picnic area* (D2019 85729).
 - WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.
 - WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.
 - WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.
 - WaterNSW, *Lake Burrangorang WQ Report* (D2019 55608), 22-May-19.
 - WaterNSW, *4.4 Screenshot from EAMS - Prospect destratifier* (D2019 84485), Jun-19.
 - WaterNSW, *Maintenance Plan Data Entry Template* (D2018 16530).
 - WaterNSW, *Cordeaux River gauge site inspection report* (D2019 85699), 17-Jul-18.
 - WaterNSW, *Calibration asset condition assessment - Sheepwash Bridge* (D2019 84500), 25-Aug-18.
 - WaterNSW, *Procurement Framework* (CD2016 77v2), 6-Jun-19.
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Element 5:

- WaterNSW, *Water Monitoring Program Manual* (CD2011 176v6), Jun-19.
 - WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
 - WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).
 - WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.
 - WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.
 - WaterNSW, *Lake Burrangorang WQ Report* (D2019 55608), 22-May-19.
 - WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).
 - WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Customer Complaint Analysis* (D2019 84524).
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Element 6:

- WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.
 - WaterNSW, *Contingency Plan Warragamba Rain V6* (D2016 39701).
 - WaterNSW, *Contingency Plan Warragamba Algae V4* (D2016 92951).
 - WaterNSW, *Incidents and events 2018-19* (D2019 80108).
 - WaterNSW, *WQ incidents in RACS* (D2016 65686).
 - WaterNSW, *WQ incidents in RACS - Process system health check* (D2019 42424), 17-Apr-19.
 - WaterNSW, *Preliminary findings - Exercise Hume* (D2018 102331), 8-Jun-18.
 - WaterNSW, *Exercise Zombie Attendee List 2019* (D2019 51897), 24-May-19.
 - WaterNSW, *Exercise Equinox feed 16 Aug 2019* (D2019 80025).
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- WaterNSW, *Exercise Zombie Incident Report May 2019* (D2019 84654), 24-May-19.
 - WaterNSW, *Exercise Equinox attendee list* (D2019 86113), 16-Aug-19.
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Element 7:

- WaterNSW, *Intranet - Urban stormwater* (D2019 84990), 15-Aug-2019.
 - WaterNSW, *Cascades employee newsletter issue 18* (D2019 84952), Mar-19.
 - WaterNSW, *Comms Kit* (D2019 84950), Jun-19.
 - WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.
 - WaterNSW, *WQ Awareness - eLearning module (all staff)* (D2017 58449),.
 - WaterNSW, *Water Quality Incident Response eLearning Module - Selected Staff* (D2018 77988).
 - WaterNSW, *Contractor AMS e-learning module* (D2019 84669).
 - WaterNSW, *WQ Awareness Outstanding Training 19/07/10* (D2019 84668), 10-Jul-19.
 - WaterNSW, *Management monthly performance report* (D2019 42931).
 - WaterNSW, *Contractor AMS e-learning module* (D2019 84669).
 - Fit2work, *Qualification check fit2work* (D2019 87691), 20-Jul-19.
 - Fit2work, *Qualification check fit2work 2* (D2019 87692), 21-Aug-19.
 - WaterNSW, *Gallagher currency of qualifications* (D2019 87717).
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Element 8:

- WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.
 - WaterNSW, *Annual Catchment Management Report 2017-18* (D2019 84679), 2017-18.
 - WaterNSW, *WDR Community Update Summer 2019* (D2019 84684), Summer 2018-19.
 - WaterNSW, *Gsydney Customer Advisory Groups - Minutes - 4 March 2019* (D2019 29229), 3-Mar-19.
 - WaterNSW, *FRWS Customer Operations Forum Meeting Minutes 5 March 2019* (D2019 24471), 5-Mar-19.
 - WaterNSW, *HPE Records Manager Document: D2018/107828: Notification for Duckmaloi WTP Fluoridation Project-4 week prior to construction notice_FINAL and APPROVED_October 2018.*
 - WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).
 - WaterNSW, *Fish River & Blue Mountains Levels of Service Workshop* (D2018 86594), 9-Aug-18.
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Element 9:

- WaterNSW, *Science Program 2016-2020* (D2015 126524), 2016-2020.
 - WaterNSW, *Example ACR for additional water monitoring* (D2018 102353), 29-Jun-18
 - WaterNSW, *Taste and odour compound - Ozwater19 - Technical Paper Poster* (D2019 46213).
 - WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
 - WaterNSW, *Asset Change Management Procedure* (CD2016 57[v2]), Jul-19.
 - WaterNSW, *Example ACR for additional water monitoring* (D2018 102353), 29-Jun-18.
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- WaterNSW, *Terms of Reference* (D2019 33805).
 - WaterNSW, *Short Form ATS - Isle Utilities* (D2019 54557), 6-May-19.
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Element 10:

- WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).
 - WaterNSW, *Screenshot: ARK how to guides* (D2019 84700).
 - WaterNSW, *WQMS - Annual Review and Continual Improvement Cycle* (D2019 84711).
 - WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Annual Report on Water Quality Monitoring 2017-18 inc Appendices* (D2019 84725), 2017-18.
 - WaterNSW, *Board Annual WQ Monitoring report 16-17* (D2017 128518).
 - WaterNSW, *C2C Risk Assessment process system health check (Oberon)* (D2019 8974), 29-Jan-19.
 - WaterNSW, *WQ Incident Response Protocol – Process system health check* (D2019 42423), 17-Apr-19.
 - WaterNSW, *WQ incidents in RACS - Process system health check* (D2019 42424), 17-APR-19.
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Element 11:

- WaterNSW, *Annual Report on Water Quality Monitoring 2017-18 inc Appendices* (D2019 84725), 2017-18.
 - WaterNSW, *Board Annual WQ Monitoring report 16-17* (D2017 128518).
 - WaterNSW, *Audit and Assurance Framework - UNDER REVIEW* (CD2015 55[v2]).
 - WaterNSW, *WQMS Audit Program* (D2017 87415).
 - WaterNSW, *Tracker for Routine Water Quality Reports* (D2014/34965).
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Element 12:

- WaterNSW, *WQMS - Annual Review and Continual Improvement Cycle* (D2019 84711).
 - WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.
 - WaterNSW, *Review Water Quality Management System - How to Guide* (D2019 64126).
 - WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).
 - WaterNSW, *Annual Water Quality Management System Report 2017-18* (D2018 94745).
 - WaterNSW, *Annual System Health Check WQMS* (D2019 50781), Jun-19.
 - WaterNSW, *Board meeting annual system health check item 6.2* (D2019 87777), 13-Jun-19.
 - WaterNSW, *FRWS Annual Review of the DWQMS 2019* (D2019 79751), 9-Jul-19.
 - WaterNSW, *Annual Cyanobacteria Assessment and Item 6.3* (D2019 84967), 21-Aug-19.
 - WaterNSW, *WQ Improvement Plan Apr 2019* (D2019 53719), Apr-19.
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Summary of reasons for grade

WaterNSW provided evidence to demonstrate that it implemented its WQMS within the declared and non-declared catchments over the audit period. WaterNSW provided:

- evidence that it had undertaken the actions detailed within the WQMS to manage risk and meet the intent of the ADWG 12 Elements; and
- evidence of implementation of the actions taken, which demonstrated that water quality risks were managed to acceptable levels and public health was protected,

in relation to the categories of water supplied by WaterNSW. There were, however, some minor shortcomings.

The minor shortcomings relate to inconsistencies in the documentation of the implementation of the verification monitoring program and the absence of information on the number of samples taken which prevented the auditors from assessing the implementation of the program. The shortcoming is considered minor because WaterNSW provided evidence that it has undertaken verification monitoring and the results did not indicate any non-compliant results or a risk to public health.

There are two open recommendations from the 2018 Operational Audit relating to Elements 2 and 3 (Recommendation 2018-04) and Element 4 (Recommendation 2018-03). Previous Recommendation 2018-04 requires WaterNSW to review the manner in which it conducts all water utility risk assessments which has implications for implementation of Elements 2 and 3. Previous Recommendation 2018-03 requires WaterNSW to review the operational and process control procedures underpinning the WQMS and identify required operational procedures, develop a plan for compiling them and commence implementation of the plan. These recommendations are not due to be completed until 31 December 2019; therefore assessment of WaterNSW's compliance with the implementation of Elements 2, 3, and 4 has been captured within the assessment of those recommendations, to prevent the development of new recommendations that would be addressed through closing out the previous recommendations.

WaterNSW is assessed as Compliant (minor shortcomings) for this obligation.

Discussion and notes

Maintenance of the WQMS to be consistent with each ADWG Element is discussed below.

Element 1:

Drinking Water Policy

During the audit, the *Water Quality Policy*¹³⁵ was observed in WaterNSW's Head Office and is available to staff on the intranet under the 'documents/policies' section.

WaterNSW provided a PowerPoint Presentation¹³⁶ of the e-Learning module for water quality. The presentation includes details of the water quality policy, its scope, and how to locate it. The *Mandatory Training Matrix*¹³⁷ includes '*Water Quality Awareness*' as mandatory training for all employees. The requirements for contractor awareness inductions are included in the *Contractor AMS e-learning module*.¹³⁸

WaterNSW provided evidence¹³⁹ that it had transitioned to a new training system for water quality awareness in July 2019. A register¹⁴⁰ of outstanding training for water quality awareness was

¹³⁵ WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.

¹³⁶ WaterNSW, *Water Quality Awareness - eLearning module* (all staff) (D2017 58449).

¹³⁷ WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.

¹³⁸ WaterNSW, *Contractor AMS e-learning module* (D2019 84669).

¹³⁹ WaterNSW, Email – New Mandatory Training (Water Quality) (D2019 121176), 15 Jul-19.

¹⁴⁰ WaterNSW, *WQ Awareness (GEN10) Outstanding Training* (D2019 84668), 10-Jul-19.

provided, demonstrating review of compliance with the training requirements. Whilst the register indicated a number of team members were overdue for training, WaterNSW demonstrated that it had a process in place to progress completion of training.

Regulatory and Formal Requirements

WaterNSW manages its statutory and regulatory requirements via the Compliance Management Framework. WaterNSW subscribes to political and media news services and circulates details of changes as required. An example¹⁴¹ for the *Public Health Act* amendment from July 2018 was provided.

WaterNSW provided the *Compliance Management Framework*¹⁴² and an email¹⁴³ that detailed the review process undertaken to update the register in May 2019.

Engaging Stakeholders

Stakeholder engagement is part of the *Catchment Protection Work Program*¹⁴⁴ and reported in annual catchment management reports. The *Annual Catchment Management Report 2017-18*¹⁴⁵ provides examples of stakeholder engagement undertaken over the 17/18 financial year including:

- project agreements with landholders;
- delivery of workshops on land management with 120 land holders;
- consultation with councils on urban stormwater;
- Blue Mountains City Council development of a draft water sensitive cities transition strategy; and
- partnerships with DairyNSW, South Coast and Highlands Dairy Industry Group, dairy farmers, and SE Local Land Services.

A PowerPoint presentation¹⁴⁶ was provided as evidence of WaterNSW's 'Levels of Service' Framework, which details the stakeholder engagement undertaken in the development to the *20-year Infrastructure Strategy*.

WaterNSW maintains a list¹⁴⁷ of water quality contacts and provided the ARK notes Contact list updates¹⁴⁸ which provides an example of how the stakeholder contacts list is updated and amended.

WaterNSW provided evidence of engagement with NSW Health including:

- *NSW Health thank you WS Quality Assurance Plans*¹⁴⁹
- *FRWS - DWQ Management System provision to PHU*¹⁵⁰ and
- *PHU acknowledgement of FRWS - DWQ Management System*¹⁵¹

¹⁴¹ CCH Parliament, *Alert of Reg Changes* (D2019 83744), 20-Jul-18.

¹⁴² WaterNSW, *Compliance Management Framework* (Cd2018 13), 2017.

¹⁴³ WaterNSW, *Legal Register Review*, 18 September 2019.

¹⁴⁴ WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.

¹⁴⁵ WaterNSW, *Annual Catchment Management Report 2017-18* (D2019 84679), 2017-18.

¹⁴⁶ WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).

¹⁴⁷ WaterNSW, *Water Quality Contacts List* (D2013 94543), undated.

¹⁴⁸ WaterNSW, *ARK notes Contact list updates* (D2019 79751).

¹⁴⁹ WaterNSW, *NSW Health thank you WS Quality Assurance Plans* (D2019 68208), 27-Jun-19.

¹⁵⁰ WaterNSW, *FRWS - DWQ Management System provision to PHU* (D2019 68210), 3-Jul-19.

¹⁵¹ NSWHealth, *PHU acknowledgement of FRWS - DWQ Management System* (D2019 71253), 9-Jul-19.

Element 2:

Water Supply System Analysis

Schematic diagrams have been prepared for each supply system and are reviewed prior to undertaking Catchment to Customer Risk Assessments. WaterNSW provided the following schematics:

- *G.Sydney WSS Schematic*;¹⁵²
- *Blue Mountains WSS Schematic*;¹⁵³
- *'Oberon Handover Map'*.¹⁵⁴

During the review it was observed that the schematics do not include treatment processes such as destratification systems, which creates a risk of those processes being missed in the risk assessment. The schematic for the FRWSS contained discrepancies around the handover points to council. Additionally, the review process and document history are not captured on the schematics (**OFI-WNSW-2019-09**).

Assessment of Water Quality Data

Routine assessment of water quality data is via the *Water Quality Data Review and Reporting Procedure*, with reports provided to customers and stakeholders monthly for each storage with interim updates provided during events or incidents.

The *Mid-term C2C Risk Assessment 2018 - Oberon Supply*¹⁵⁵ report was provided as evidence of the risk assessment process; however, an assessment of water quality data was not included in the report and it was unclear what data analysis had been undertaken to inform the risk assessment.

The risk register, *Lithgow C2C MidTerm Review*¹⁵⁶ was provided as evidence of a risk review that was undertaken within the audit period. During the audit interviews it was discussed that this risk assessment had been reviewed to include new hazardous events associated with the reversal of flow in the distribution system. When reviewing the risk register, the scope of the review was not documented, and it was not clear if the whole risk register was reviewed or only partially. The evidence of water quality data assessment used to assess the risk was not documented. A number of *'Water Quality Reports'*^{157,158} were provided, however, it was unclear which of these were used to inform the risk assessment.

The *C2C Risk Review Process*,¹⁵⁹ the overarching WQMS, and the FRWSS DWQMS do not explicitly detail the requirements for assessment of water quality data. Therefore, WaterNSW was not found to be non-compliant with the requirement to implement the Water Quality Management System; however, as has been suggested in OFI-WNSW-2019-02, the *C2C Risk Review Process* does need to be reviewed to include the requirements for assessment of water quality data.

Furthermore, as review of the risk assessment process is also captured in a recommendation (Recommendation 2018-04) from the 2018 Operational Audit, that is due to be completed by 31 December 2019. This audit reports on the progress in implementing that recommendation in lieu of making further recommendations for this element (refer Table 4.6).

¹⁵² WaterNSW, *G.Sydney WSS Schematic* (D2016 96321) (undated).

¹⁵³ WaterNSW, *Blue Mountains WSS Schematic* (D2017 68141) (undated).

¹⁵⁴ WaterNSW, *Oberon Handover Map* (unknown) (undated).

¹⁵⁵ WaterNSW, *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (unknown)(undated).

¹⁵⁶ WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated).

¹⁵⁷ WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.

¹⁵⁸ WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.

¹⁵⁹ WaterNSW, *C2C Risk Review Process* (D2019 30124).

Hazard Identification and Risk Assessment

The following documents were provided by WaterNSW as evidence of implementing the risk assessment process:

- WaterNSW, *Fish River Supply Scheme Water Quality Management System*,¹⁶⁰
- *Lithgow C2C MidTerm Review*¹⁶¹ Spreadsheet;
- *Mid-term C2C Risk Assessment 2018 - Oberon Supply*¹⁶² (Drinking Water Quality Catchment-to-Customer Risk Assessment Report); and
- *C2T MidTerm Review – Oberon-Lithgow 2018*.¹⁶³

In reviewing the provided evidence, the auditors found a number of inconsistencies. Table 4 of the FRWSS DWQMS, identifies the list of medium to high risks identified in the Fish River Water Supply Scheme (FRWSS) C2C assessment process, however, when the auditors reviewed the risk register spreadsheets provided, the corresponding hazardous events could not be located in a risk register:

- Poor control/management of pre-chlorination causes excessive DBPs in water supply; and
- Poor control/management of filtration reduces *Cryptosporidium* treatment effectiveness which impacts drinking water supply.

Additionally, the *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (Drinking Water Quality Catchment-to-Customer Risk Assessment Report) indicates that 23 hazardous events emanated from the treatment processes, however, there are only 6 treatment hazardous events on the *Lithgow C2C MidTerm Review* and *C2T MidTerm Review – Oberon-Lithgow 2018*. On the risk registers, there is no information to indicate when hazardous events were added, removed or reviewed, therefore it is unclear if there is another risk assessment register that covers the operation of the Duckmooli Treatment Plant, or if a large number of treatment hazardous events have been removed from the risk register.

In assessing compliance of this element, the auditors have considered that the FRWSS DWQMS indicates that the treatment risks have been assessed; however, the process for documenting the risk assessment needs to be improved. As review of the risk assessment process is captured in a recommendation (Recommendation 2018-04) from the 2018 Operational Audit, that is due to be completed by 31 December 2019. This audit reports on the progress in implementing that recommendation in lieu of making further recommendations for this element (refer Table 4.6).

Element 3:

Preventive Measures and Multiple Barriers

Preventive measures are identified in the C2C Risk Registers:

- *Lithgow C2C MidTerm Review*¹⁶⁴ Spreadsheet;
- *C2T MidTerm Review – Oberon-Lithgow 2018*;¹⁶⁵ and
- *CRC 5yr review base sheet*.¹⁶⁶

Additionally, the FRWSS DWQMS and the *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (*Drinking Water Quality Catchment-to-Customer Risk Assessment Report*) detail a range of preventive

¹⁶⁰ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

¹⁶¹ WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated).

¹⁶² WaterNSW, *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (unknown)(undated).

¹⁶³ WaterNSW, *C2T MidTerm Review – Oberon-Lithgow 2018* (unknown)(undated).

¹⁶⁴ WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated).

¹⁶⁵ WaterNSW, *C2T MidTerm Review – Oberon-Lithgow 2018* (unknown)(undated).

¹⁶⁶ WaterNSW, *C2C 5 yr Base Sheet* (unknown)(undated).

measures that were identified in the risk assessment.

A recommendation from a previous audit (Recommendation 2018-03) requires WaterNSW (by 31 December 2019) to review the operational and process control procedures underpinning its Water Quality Management System and commence implementation of the plan and document operational procedures for all processes and activities (e.g. preventive measures, operational monitoring and verification procedures and maintenance requirements). This audit will report on the progress in implementing that recommendation in lieu of making further recommendations for this element.

Critical Control Points

Within the declared catchment, CCPs have been developed for raw water supplies to Sydney Water and for the picnic areas, which are documented in the 'CCP tables' in 3.2 *WQ Incident Response Protocol CCP tables*.¹⁶⁷ CCPs have been established for the FRWSS and these are documented in the FRWSS DWQMS.¹⁶⁸ Monitoring of CCPs is undertaken and captured in WaterNSW's record keeping systems.

Evidence of CCP implementation include:

- *Daily Turbidity Report - How-to Guide*;¹⁶⁹
- *Qly Water Quality Performance and Trend - Item 6.1*;¹⁷⁰
- *Daily Maximum Turbidity at 7/22/2019 3:15 am*;¹⁷¹
- *SCADA plots showing CCP alarms*;¹⁷²
- *Daily Turbidity for 24 hrs to midnight on 25 July 2019*;¹⁷³ and
- *Screenshot: elevated turbidity at Avon picnic area*.¹⁷⁴

During the audit interviews, WaterNSW demonstrated the SCADA system, showing the critical limits, alarms and alerts set in the SCADA system.

During the audit a spike in turbidity was noted in July 2019 at the Turbidity CCP on the Woronora Dam outlet, indicating that the instrument was not operational for a number of days.

WaterNSW provided an email¹⁷⁵ that demonstrated that WaterNSW took action to monitor alternative sensors and made internal notifications of the issue. There were no notifications made to Sydney Water; a process to notify Sydney Water if the primary CCP monitoring process is not implemented should be developed (**OFI-WNSW-2019-010**).

WaterNSW verbally confirmed that CCPs are protected in SCADA, and changes to the SCADA limits can only be changed by a SCADA administrator and are tracked through the MyWaterNSW system. An example¹⁷⁶ of the CCP change process was provided.

Element 4:

Operational Procedures

Examples of operational procedures were provided to demonstrate that procedures are documented and implemented including:

¹⁶⁷ WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.

¹⁶⁸ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

¹⁶⁹ WaterNSW, *Daily Turbidity Report - How-to Guide* (D2016 144707).

¹⁷⁰ WaterNSW, *Qly Water Quality Performance and Trend - Item 6.1* (D2019 75157), Aug-19.

¹⁷¹ WaterNSW, *Daily Maximum Turbidity at 7/22/2019 3:15 am* (D2019 84419), 22-Jul-19.

¹⁷² WaterNSW, *SCADA plots showing CCP alarms* (D2019 84421), 10-Sep-18.

¹⁷³ WaterNSW, *Daily Turbidity for 24 hrs to midnight on 25 July 2019* (D2019 84422), 25-Jul-19.

¹⁷⁴ WaterNSW, *Screenshot: elevated turbidity at Avon picnic area* (D2019 85729).

¹⁷⁵ WaterNSW, *Daily Turbidity for 24 hrs to midnight on 1 July 2019* (D2019 67905), 2 Jul-19.

¹⁷⁶ WaterNSW, *FW MyWaterNSW Incident CCP change* (26 September 2019).

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- *Water Quality Data Review and Reporting Procedure*¹⁷⁷ - examples of the preparation of monthly water quality reports in accordance with the procedure were provided and the details are discussed elsewhere in this report;
 - *Materials and Chemicals with Drinking Water Supplies Procedure*;¹⁷⁸
 - *Complaints and Compliments Handling Procedure*;¹⁷⁹
 - *Incident Management Procedure*;¹⁸⁰ and
 - *Controlled Document Procedure*¹⁸¹ - examples of documents provided as evidence of the implementation of the procedure.

The preparation of procedures is captured in a recommendation (Recommendation 2018-03) from a previous audit, that is due to be completed by 31 December 2019. This audit will report on the progress in implementing that recommendation in lieu of making further recommendations for this element.

Operational Monitoring

The *Water Monitoring Program Manual*¹⁸² includes monitoring across the declared catchment from catchment to tap, including the monitoring of CCPs and other measures of operational performance. The Manual includes the identification of operational parameters, target criteria and critical limits.

WaterNSW demonstrated its water quality database during the audit interviews. The auditors observed the collection of operational data, retrieval of data from the database and extraction of data for reporting purposes. The raw water turbidity monitoring data from the Woronora site was displayed. Review of the data presented indicated that the *Water Monitoring Program Manual* minimum number of samples required by the *Water Monitoring Program Manual* had been collected.

Evidence of operational monitoring being implemented includes:

- *Daily Turbidity Report - How-to Guide*;¹⁸³
- *Qly Water Quality Performance and Trend - Item 6.1*;¹⁸⁴
- *Daily Maximum Turbidity at 7/22/2019 3:15 am*;¹⁸⁵
- *SCADA plots showing CCP alarms*;¹⁸⁶
- *Daily Turbidity for 24 hrs to midnight on 25 July 2019*;¹⁸⁷ and
- *Screenshot: elevated turbidity at Avon picnic area*.¹⁸⁸

The *Daily Maximum Turbidity at 7/22/2019 3:15 am* shows how the daily maximum turbidity readings across sites are collated and reported. The *SCADA plots showing CCP alarms* is an email containing SCADA Plots over 24 hours for Prospect HPR1 and Liverpool Dam communicated on 10/9/2018. *Daily Turbidity for 24 hrs to midnight on 25 July 2019* is an email which reported the performance of the raw water turbidity over a period of 24 hours on 25 July 2019.

¹⁷⁷ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130[v5]), May-19.

¹⁷⁸ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.

¹⁷⁹ WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).

¹⁸⁰ WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.

¹⁸¹ WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).

¹⁸² WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]), Jun-19.

¹⁸³ WaterNSW, *Daily Turbidity Report - How-to Guide* (D2016 144707).

¹⁸⁴ WaterNSW, *Qly Water Quality Performance and Trend - Item 6.1* (D2019 75157), Aug-19.

¹⁸⁵ WaterNSW, *Daily Maximum Turbidity at 7/22/2019 3:15 am* (D2019 84419), 22-Jul-19.

¹⁸⁶ WaterNSW, *SCADA plots showing CCP alarms* (D2019 84421), 10-Sep-18.

¹⁸⁷ WaterNSW, *Daily Turbidity for 24 hrs to midnight on 25 July 2019* (D2019 84422), 25-Jul-19.

¹⁸⁸ WaterNSW, *Screenshot: elevated turbidity at Avon picnic area* (D2019 85729).

Corrective Action

The *WQ Incident Response Protocol CCP tables*¹⁸⁹ detail corrective actions to be taken in response to deviation from operational limits. The *Screenshot: elevated turbidity at Avon picnic area* details the corrective actions taken in response to a high chlorine concentration at the Avon Picnic area. The screen shot of the Risk, Assurance and Compliance System (RACS), shows the corrective actions to be taken included turbidity checks, flushing of reticulation lines and investigation for breaks in the network.

Under the *Water Quality Data Review and Reporting Procedure*¹⁹⁰ monthly water quality reports are prepared. WaterNSW provided the *Fish River Drinking Water Quality Report*¹⁹¹, *Lake Oberon and Duckmaloi Weir WQ Report*¹⁹² (June 2019) and *Lake Burragarang WQ Report*¹⁹³ (May 2019). These reports include a section relating to proposed actions, actions being taken, special monitoring undertaken and any configuration changes.

Equipment Capability and Maintenance

Maintenance schedules have been captured in an Enterprise Asset Management (EAM) software framework with a screenshot¹⁹⁴ of an EAM entry as evidence of the establishment of the maintenance system. The *Maintenance Plan Data Entry Template*¹⁹⁵ shows the maintenance schedule for a range of equipment which includes the frequencies, job codes, types of job (e.g. major service overhaul, minor test, minor inspection) and locations.

*Cordeaux River gauge site inspection report*¹⁹⁶ shows the record of an annual inspection of the concrete V-notch at the Cordeaux River Weir, undertaken on 17/7/18. The inspection included calibration of instruments, sensors, an asset condition report of a range of equipment types including batteries, compressors, loggers etc. Photos were included on the record.

The *Calibration asset condition assessment - Sheepwash Bridge*¹⁹⁷ records the annual inspection and condition report undertaken on 24/8/18.

Materials and Chemicals

The *Procurement Framework*¹⁹⁸ and the *Materials and Chemicals with Drinking Water Supplies Procedure*¹⁹⁹ have been established for the purchase and use of materials and chemicals in contact with drinking water supplies. Records of implementation of the process include:

- *IXOM Laverton Liquid Chlorine - AWWA Conformance*;²⁰⁰
- *IXOM delivery docket 3 drums chlorine*;²⁰¹
- *IXON CA certification*;²⁰²
- *IXOM delivery docket 1500L Sodium Hypochlorite*.²⁰³

¹⁸⁹ WaterNSW, *3.2 WQ Incident Response Protocol CCP tables* (D2019 84356), Feb-19.

¹⁹⁰ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

¹⁹¹ WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.

¹⁹² WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.

¹⁹³ WaterNSW, *Lake Burragarang WQ Report* (D2019 55608), 22-May-19.

¹⁹⁴ WaterNSW, *4.4 Screenshot from EAMS - Prospect destratifier* (D2019 84485), Jun-19.

¹⁹⁵ WaterNSW, *Maintenance Plan Data Entry Template* (D2018 16530).

¹⁹⁶ WaterNSW, *Cordeaux River gauge site inspection report* (D2019 85699), 17-Jul-18.

¹⁹⁷ WaterNSW, *Calibration asset condition assessment - Sheepwash Bridge* (D2019 84500), 25-Aug-18.

¹⁹⁸ WaterNSW, *Procurement Framework* (CD2016 77v2), 6-Jun-19.

¹⁹⁹ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019 36), 2019.

²⁰⁰ IXOM, *IXOM Laverton Liquid Chlorine - AWWA Conformance* (Updated) (D2019 88227), 11-Apr-19.

²⁰¹ IXOM, *IXOM delivery docket 3 drums chlorine* (D2019 88400), 15-Jun-19.

²⁰² IXOM, *IXON CA certification* (D2019 88401), Sep-18.

²⁰³ IXOM, *IXOM delivery docket 1500L Sodium Hypochlorite* (D2019 88403), 6-Apr-19.

Element 5:

Drinking Water Quality Monitoring is detailed in the *Water Monitoring Program Manual*²⁰⁴ and the *Fish River Supply Water Quality Management System* (FRWSS DWQMS).²⁰⁵ The results of verification monitoring are collated into the monthly water quality reports prepared under the *Water Quality Data Review and Reporting Procedure*.²⁰⁶ Monthly reports provided as evidence of implementation of the water monitoring program included the *Fish River Drinking Water Quality Report*²⁰⁷, *Lake Oberon and Duckmaloi Weir WQ Report*²⁰⁸ (June 2019) and *Lake Burrangorang WQ Report*²⁰⁹ (May 2019).

The *Water Monitoring Program Manual* indicates that monthly testing of *E. coli* is undertaken at the Fish River reticulation sites; however, Page 3 of the *Fish River Drinking Water Quality Report* indicates that weekly monitoring of *E. coli* is undertaken at seven sites but the report does not detail the number of samples taken, only that *E. coli* was not detected. Additionally, the *Fish River Water Quality Report* does not detail the sampling at the filtration plant, which is required under the monitoring program. Based on these inconsistencies and the lack of documentation around the number of samples taken, the auditors could not audit the implementation of the FRWSS verification monitoring program. A recommendation has been identified to improve documentation of the verification monitoring program for the FRWSS and subsequent reporting of the implementation of the program (**REC-WNSW-2019-01**) (refer also to Table 3.3).

The 'background' sections of the *Lake Burrangorang WQ Report* and *Lake Oberon and Duckmaloi Weir WQ Report* details monitoring in accordance with the *Water Monitoring Program Manual*.

Consumer Satisfaction

The *Complaints and Compliments Handling Procedure*²¹⁰ and WQMS²¹¹ includes details of management of customer complaints. *Customer Complaint Analysis*²¹² provides an overview of complaints received. The report shows a breakdown of complaints by categories such as billing, service and delivery; however, there is no category for water quality (**OFI-WNSW-2019-11**). It is noted that, during the audit period, a water quality complaint category was added to the customer complaint management process and staff trained accordingly, pursuant to previous Recommendations 2018-18 and 2018-19 (refer Table 4.20 and Table 4.21).

Short-term Evaluation of Results

WaterNSW provided the *Water Quality Data Review and Reporting Procedure* as evidence of short-term review of performance. Monthly reports provided evidence of short-term evaluation of results - *Fish River Drinking Water Quality Report*, *Lake Oberon and Duckmaloi Weir WQ Report* (June 2019) and *Lake Burrangorang WQ Report* (May 2019).

Corrective Action

Under the *Water Quality Data Review and Reporting Procedure* monthly water quality reports are prepared. WaterNSW provided the *Fish River Drinking Water Quality Report*, *Lake Oberon and Duckmaloi Weir WQ Report* (June 2019) and *Lake Burrangorang WQ Report* (May 2019). The reports include a section relating to proposed actions, actions being taken, special monitoring undertaken and any configuration changes.

²⁰⁴ WaterNSW, *Water Monitoring Program Manual* (CD2011 176v6), Jun-19.

²⁰⁵ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

²⁰⁶ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

²⁰⁷ WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.

²⁰⁸ WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.

²⁰⁹ WaterNSW, *Lake Burrangorang WQ Report* (D2019 55608), 22-May-19.

²¹⁰ WaterNSW, *Complaints and Compliments Handling Procedure* (CD2007 13v5).

²¹¹ WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

²¹² WaterNSW, *Customer Complaint Analysis* (D2019 84524).

Element 6:

Communication

*Water Quality Incident Response Protocol*²¹³ and *Joint Communication Protocols*²¹⁴ details agreed communication. The *Water Quality Contacts List*²¹⁵ includes the list of stakeholders for managing incidents.

Emergency Response Protocols

*Incident Management Procedure*²¹⁶ details the incident management framework with specific contingency plans^{217,218} for likely scenarios such as inflow and algal events at Warragamba Dam. A document, *Incidents and events 2018-19*²¹⁹ provides a list of water quality events that occurred in the 2018-2019 financial year. The list includes the details of incidents, potential consequences and the results of the root cause analysis.

The spreadsheet, *WQ incidents in RACS*,²²⁰ details the recording of water quality incidents from August 2018 – July 2019, with a total of 47 incidents occurring over the period.

*WQ incidents in RACS - Process system health check*²²¹ provides details of an internal ‘health check’ of the collection of details of incidents. The check found that the RACS system is not fully functional and that some of the review processes continue to rely on manual processes (**OFI-WNSW-2019-12**).

Incident exercises were undertaken including ‘Zombie’ on 24 May 2019 and ‘Equinox’ on 16 August 2019. The Zombie exercise was based around a planned release of carp herpes virus (CyHV-3) into Wingecarribee Reservoir. The scenario was designed to test preparedness for assessing and responding to potential water quality hazard events. The outcomes and opportunities for improvement are documented in a debrief report. Equinox was designed to assess the preparedness for managing water quality impacts from heavy rainfall and inflows.

Zombie included stakeholders from WaterNSW, EPA, Sydney Water, DPI Fisheries, Department of Agriculture and Water Resources. Equinox included stakeholders from WaterNSW, Sydney Water and NSW Health.

Evidence of incident exercise included:

- *Preliminary findings - Exercise Hume*,²²²
- *Exercise Zombie Attendee List 2019*,²²³
- *Exercise Equinox feed 16 Aug 2019*,²²⁴
- *Exercise Zombie Incident Report May 2019*,²²⁵ and
- *Exercise Equinox attendee list*.²²⁶

²¹³ WaterNSW, *Water Quality Incident Response Protocol* (CD2004 183[v3]), Apr-18.

²¹⁴ WaterNSW, *Joint Communication Protocols - v1* (D2019 26923), Mar-19.

²¹⁵ WaterNSW, *Water Quality Contact List* (CD2013 94543).

²¹⁶ WaterNSW, *Incident Management Procedure* (CD2017 180), Nov-18.

²¹⁷ WaterNSW, *Contingency Plan Warragamba Rain V6* (D2016 39701).

²¹⁸ WaterNSW, *Contingency Plan Warragamba Algae V4* (D2016 92951).

²¹⁹ WaterNSW, *Incidents and events 2018-19* (D2019 80108).

²²⁰ WaterNSW, *WQ incidents in RACS* (D2016 65686).

²²¹ WaterNSW, *WQ incidents in RACS - Process system health check* (D2019 42424), 17-Apr-19.

²²² WaterNSW, *Preliminary findings - Exercise Hume* (D2018 102331), 8-Jun-18.

²²³ WaterNSW, *Exercise Zombie Attendee List 2019* (D2019 51897), 24-May-19.

²²⁴ WaterNSW, *Exercise Equinox feed 16 Aug 2019* (D2019 80025).

²²⁵ WaterNSW, *Exercise Zombie Incident Report May 2019* (D2019 84654), 24-May-19.

²²⁶ WaterNSW, *Exercise Equinox attendee list* (D2019 86113), 16-Aug-19.

Element 7:

Employee Awareness and Training

An intranet screenshot²²⁷ was provided as evidence of targeted awareness activities for staff on urban stormwater, as a top source of pollution in the catchment. *The Cascades employee newsletter issue 18*²²⁸ was provided as evidence of engagement with employees. The newsletter provided an overview of the ‘Zombie’ incident exercise, WaterNSW news and media updates. A monthly communication summary²²⁹ for June 2019 was provided that communicated to staff safety messages, updates on drought, continuous improvement, strategic planning, business achievements, customer updates, and business performance including water quality incidents and training.

Employee Training

The *Mandatory Training Matrix*²³⁰ details the training module that is required to be undertaken by WaterNSW staff. WaterNSW provided the following evidence of training:

- *WQ Awareness - eLearning module (all staff)*;²³¹
- *Water Quality Incident Response eLearning Module - Selected Staff*;²³²
- *Contractor AMS e-learning module*;²³³
- *WQ Awareness Outstanding Training 19/07/10*;²³⁴
- *Water Quality Awareness training module*;²³⁵ and
- *Management monthly performance report*;²³⁶

WaterNSW provided evidence that qualification and competency checks were undertaken for staff members:

- *Qualification check fit2work*;²³⁷
- *Qualification check fit2work*;²³⁸ and
- *Gallagher currency of qualifications*.²³⁹

Element 8:

Community Consultation

Community consultation and engagement activities are routinely undertaken by WaterNSW as part of the *Catchment Protection Work Program*²⁴⁰ and reported in annual catchment management reports.²⁴¹ WaterNSW provided evidence of consultation with relevant communities, for example, with local government for the *Urban Stormwater Program* and landowners for the *Grazing and Erosion Program*. Examples of community consultation undertaken include:

²²⁷ WaterNSW, *Intranet - Urban stormwater* (D2019 84990), 15-Aug-2019.

²²⁸ WaterNSW, *Cascades employee newsletter issue 18* (D2019 84952), Mar-19.

²²⁹ WaterNSW, *Comms Kit* (D2019 84950), Jun-19.

²³⁰ WaterNSW, *Mandatory Training Matrix 2019 incl Positions* (D2019 84657), 2019.

²³¹ WaterNSW, *WQ Awareness - eLearning module (all staff)* (D2017 58449).

²³² WaterNSW, *Water Quality Incident Response eLearning Module - Selected Staff* (D2018 77988).

²³³ WaterNSW, *Contractor AMS e-learning module* (D2019 84669).

²³⁴ WaterNSW, *WQ Awareness Outstanding Training 19/07/10* (D2019 84668), 10-Jul-19.

²³⁵ WaterNSW, *Water Quality Awareness - eLearning module (all staff)* (D2017 58449).

²³⁶ WaterNSW, *Management monthly performance report* (D2019 42931).

²³⁷ Fit2work, *Qualification check fit2work* (D2019 87691), 20-Jul-19.

²³⁸ Fit2work, *Qualification check fit2work 2* (D2019 87692), 21-Aug-19.

²³⁹ WaterNSW, *Gallagher currency of qualifications* (D2019 87717).

²⁴⁰ WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.

²⁴¹ WaterNSW, *Annual Catchment Management Report 2017-18* (D2019 84679), 2017-18.

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- *WDR Community Update Summer 2019*;²⁴²
 - *Gsydney Customer Advisory Groups - Minutes - 4 March 2019*;²⁴³
 - *FRWS Customer Operations Forum Meeting Minutes 5 March 2019*;²⁴⁴
 - *Notification for Duckmaloi WTP Fluoridation Project-4 week prior to construction notice Email*.²⁴⁵

Communication

The *Catchment Protection Work Program* identifies how WaterNSW gathers feedback from stakeholder relevant to its catchment management programs. PowerPoint presentations^{246,247} and emailed invitation and agenda²⁴⁸ were provided as evidence of communication with customers on WaterNSW's 'Levels of Service' Framework and the development of a 20-year Infrastructure Strategy to be developed early in 2020.

Element 9:

Investigative Studies and Research Monitoring

The WaterNSW *Science Program*²⁴⁹ includes research on catchment management strategies and evaluation of interventions, water quality management, climate change and extreme events and emerging risks.

Naegleria fowleri was identified as an emerging pathogen risk during the C2C assessment process. The risk is highest if a water body has a high temperature for an extended period of time. Temperature monitoring was implemented at four metropolitan rural picnic area supplies and fourteen rural water supplies and results used to determine high risk sites for ongoing monitoring. WaterNSW provided an *Example ACR for additional water monitoring*²⁵⁰ which showed an asset change request to undertake more frequent temperature samples in 14 dams.

An Ozwater Technical Poster²⁵¹ providing the results of research undertaken to understand biovolume of carp in water storages and simulated water quality impacts of decaying fish.

Validation of Processes

The overarching WQMS²⁵² and FRWSS DWQMS²⁵³ mentions audits and review to verify the operation of treatment processes, however it does not mention validation or revalidation of the water treatment processes (**OFI-WNSW-2019-05**).

Design of Equipment

The *Asset Change Management Procedure*²⁵⁴ details the risk-based process for authorising changes to assets and related information/systems. A record of an asset change request²⁵⁵ was provided as evidence of the implementation of the *Asset Change Management Procedure*.

*Terms of Reference*²⁵⁶ details the establishment of a joint working group between Sydney Water and

²⁴² WaterNSW, *WDR Community Update Summer 2019* (D2019 84684), Summer 2018-19.

²⁴³ WaterNSW, *Gsydney Customer Advisory Groups - Minutes - 4 March 2019* (D2019 29229), 3-Mar-19.

²⁴⁴ WaterNSW, *FRWS Customer Operations Forum Meeting Minutes 5 March 2019* (D2019 24471), 5-Mar-19.

²⁴⁵ WaterNSW, *HPE Records Manager Document: D2018/107828: Notification for Duckmaloi WTP Fluoridation Project-4 week prior to construction notice_FINAL and APPROVED_October 2018*.

²⁴⁶ WaterNSW, *Levels of Service - Project Overview - Water Quality* (D2017-128499).

²⁴⁷ WaterNSW, *Fish River & Blue Mountains Levels of Service Workshop* (D2018 86594), 9-Aug-18.

²⁴⁸ WaterNSW, *Fish River & Blue Mountains Levels of Service Workshop* (D2018 86594), 9-Aug-18.

²⁴⁹ WaterNSW, *Science Program 2016-2020* (D2015 126524), 2016-2020.

²⁵⁰ WaterNSW, *Example ACR for additional water monitoring* (D2018 102353), 29-Jun-18.

²⁵¹ WaterNSW, *Taste and odour compound - Ozwater19 - Technical Paper Poster* (D2019 46213).

²⁵² WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

²⁵³ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

²⁵⁴ WaterNSW, *Asset Change Management Procedure* (CD2016 57[v2]), Jul-19.

²⁵⁵ WaterNSW, *Example ACR for additional water monitoring* (D2018 102353), 29-Jun-18.

WaterNSW to identify, trial and recommend commissioning of a robust hydrocarbon analyser at Broughton Pass and Upper Canal.

*Short Form ATS - Isle Utilities*²⁵⁷ provides a record of engagement of a consultant to evaluate hydrocarbon testing equipment.

Element 10:

Management of Documentation and Records

The *Controlled Document Procedure*²⁵⁸ describes the process for managing documents and records.

A screenshot of a *'How-to Guide'*²⁵⁹ was provided to demonstrate how WaterNSW staff have been trained in using ARK, and included links to a number of guides on implementing document management requirements using the ARK system.

During the audit interviews, WaterNSW demonstrated the search and retrieval of documents and records via use of the intranet search engine and ARK.

Reporting

The *Annual Review and Continual Improvement Cycle*²⁶⁰ is detailed in the overarching WQMS.²⁶¹ The following examples of reporting were provided as evidence of implementation:

- *Annual Report on Water Quality Monitoring 2017-18;*²⁶²
 - *WaterNSW, Board Annual WQ Monitoring report 16-17;*²⁶³
 - *C2C Risk Assessment process system health check (Oberon);*²⁶⁴
 - *WQ Incident Response Protocol - Process system health check;*²⁶⁵
 - *WQ incidents in RACS - Process system health check;*²⁶⁶ and
 - *Daily Turbidity Report - Process system health check.*²⁶⁷
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Element 11:

Long-term Evaluation of Results

The ADWG Framework requires the collection and evaluation of long-term data to assess performance and identify problems. The results should be documented and reported.

The overarching WQMS states that long term data analysis is reported in an annual report every two years, with the analysis encompassing a 10-year period.

WaterNSW provided the *Water Quality Data Review and Reporting Procedure*²⁶⁸ which outlines a process for extracting, analysing and reporting monitoring data. The procedure refers to *Tracker for Routine Water Quality Reports* (D2014/34965)²⁶⁹ which was provided as evidence of the implementation of reporting.

²⁵⁶ WaterNSW, *Terms of Reference* (D2019 33805).

²⁵⁷ WaterNSW, *Short Form ATS - Isle Utilities* (D2019 54557), 6-May-19.

²⁵⁸ WaterNSW, *Controlled Document Procedure* (CD2010 135[v6]).

²⁵⁹ WaterNSW, *Screenshot: ARK how to guides* (D2019 84700).

²⁶⁰ WaterNSW, *WQMS - Annual Review and Continual Improvement Cycle* (D2019 84711).

²⁶¹ WaterNSW, *WQMS System 2018_UNDER REVIEW* (CD2013 56v5), 2019.

²⁶² WaterNSW, *Annual Report on Water Quality Monitoring 2017-18* inc Appendices (D2019 84725), 2017-18.

²⁶³ WaterNSW, *Board Annual WQ Monitoring report 16-17* (D2017 128518).

²⁶⁴ WaterNSW, *C2C Risk Assessment process system health check (Oberon)* (D2019 8974), 29-Jan-19.

²⁶⁵ WaterNSW, *WQ Incident Response Protocol - Process system health check* (D2019 42423), 17-Apr-19.

²⁶⁶ WaterNSW, *WQ incidents in RACS - Process system health check* (D2019 42424), 17-Apr-19.

²⁶⁷ WaterNSW, *Daily Turbidity Report - Process system health check* (D2019 62287), 5-Jun-19.

²⁶⁸ WaterNSW, *Water Quality Data Review and Reporting Procedure* (CD2012 130v5).

²⁶⁹ WaterNSW, *Tracker for Routine Water Quality Reports* (D2014/34965).

Examples of long-term evaluation of results were provided including:

- *Annual Report on Water Quality Monitoring 2017-18;*²⁷⁰ and
- *WaterNSW, Board Annual WQ Monitoring report 16-17.*²⁷¹

Audit of Drinking Water Quality Management

The *Audit and Assurance Framework*²⁷² details a process for internal and external audits and assurance activities. The *WQMS Audit Program*²⁷³ details the frequencies of these processes.

WaterNSW conducted a number of system health checks.

The *Audit and Assurance Framework* includes ‘some examples of internal audits include:

- *Risk based Internal Audit, 3-year program delivered through to the Board Audit and Risk Committee*
- *Fraud and Corruption Spot Audit*
- *Special engagement requested by Management/ Board Audit and Risk Committee /Independent Board.’*

During the audit interviews, WaterNSW indicated that the independent audits of the implementation of the WQMS are not undertaken as detailed in the Program and that ‘system health checks’ fulfilled the requirement to undertake internal audits (**OFI-WNSW-2019-06**).

Element 12:

Review by Senior Executive

The *Annual Review and Continual Improvement Cycle*²⁷⁴ is detailed in the overarching WQMS.²⁷⁵ Triggers for review are detailed in a ‘How To Guide’²⁷⁶. The FRWSS DWQMS²⁷⁷ states that the management system is reviewed annually.

Evidence that senior management reviews are undertaken include:

- *Annual Water Quality Management System Report 2017-18;*²⁷⁸
- *Annual System Health Check WQMS;*²⁷⁹
- *Board meeting annual system health check item 6.2;*²⁸⁰
- *FRWS Annual Review of the DWQMS 2019;*²⁸¹ and
- *Annual Cyanobacteria Assessment and Item 6.3;*²⁸²
- *Drinking Water Quality Management Improvement Plan.*

The *Water Quality Improvement Plan*²⁸³ details the improvement actions to be undertaken. Review of the improvement plan indicated that WaterNSW has progressed implementing the improvement plan, having closed out a number of improvements over the audit period. A number of improvements are in progress.

²⁷⁰ WaterNSW, *Annual Report on Water Quality Monitoring 2017-18* inc Appendices (D2019 84725), 2017-18.

²⁷¹ WaterNSW, *Board Annual WQ Monitoring report 16-17* (D2017 128518).

²⁷² WaterNSW, *Audit and Assurance Framework - UNDER REVIEW* (CD2015 55[v2]).

²⁷³ WaterNSW, *WQMS Audit Program* (D2017 87415)

²⁷⁴ WaterNSW, *WQMS - Annual Review and Continual Improvement Cycle* (D2019 84711).

²⁷⁵ WaterNSW, *WQMS System 2018 - UNDER REVIEW* (CD2013 56v5), 2019.

²⁷⁶ WaterNSW, *Review Water Quality Management System - How to Guide* (D2019 64126).

²⁷⁷ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129).

²⁷⁸ WaterNSW, *Annual Water Quality Management System Report 2017-18* (D2018 94745).

²⁷⁹ WaterNSW, *Annual System Health Check WQMS* (D2019 50781), Jun-19.

²⁸⁰ WaterNSW, *Board meeting annual system health check item 6.2* (D2019 87777), 13-Jun-19.

²⁸¹ WaterNSW, *FRWS Annual Review of the DWQMS 2019* (D2019 79751), 9-Jul-19.

²⁸² WaterNSW, *Annual Cyanobacteria Assessment and Item 6.3* (D2019 84967), 21-Aug-19.

²⁸³ WaterNSW, *WQ Improvement Plan Apr 2019* (D2019 53719), Apr-19.

Recommendations

The following recommendations are made in respect of this obligation:

Element 5:

- **REC-WNSW-2019-01:** By 30 September 2020, WaterNSW must review the Fish River Water Supply Scheme verification monitoring plan to:
 - identify the monitoring zones;
 - specify the minimum of weekly testing of E. coli is undertaken in each monitoring zone in accordance with the ADWG requirements;
 - review the implementation of the program to ensure that testing is undertaken in accordance with the monitoring plan; and
 - establish review and reporting processes to confirm and report compliance with the program (e.g. reporting should verify the number of samples taken).

Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

Element 2:

- **OFI-WNSW-2019-02:** When addressing previous Recommendation 2018-04, consider developing specific guidance on undertaking a water quality data assessment for risk assessment purposes including, identifying all sources of data that should be considered, the parameters, timespan and the minimum standards for trending and analysis.
- **OFI-WNSW-2019-09:** Update schematics to capture relevant system components including destratification systems. Consider identifying the schematics as controlled documents with version control and review dates.

Element 4:

- **OFI-WNSW-2019-10:** Establish processes for notifying Sydney Water when the primary CCP cannot be monitored.

Element 5

- **OFI-WNSW-2019-11:** Ensure that future analysis of customer complaints includes the identification and analysis of water quality complaints, to improve understanding of the nature of those complaints and to trigger any required improvement actions in respect of water quality.

Element 6:

- **OFI-WNSW-2019-12:** Review and improve the functionality of the RACS process for recording water quality incidents to reduce reliance on manual processes (e.g. spreadsheets).

Element 9:

- **OFI-WNSW-2019-05:** Include a commitment in the WQMS to validation and revalidation of water treatment processes, including triggers for revalidation.

Element 11:


- **OFI-WNSW-2019-06:** Update the WQMS Audit Program to reflect the internal auditing processes relevant to the WQMS or the corporate terminology for auditing as appropriate.

Supplemental information

No supplemental information is provided in respect of this obligation.

3.2.2 Catchment management (clause 2.2)

Table 3.5 Catchment management (sub-clause 2.2.1)

Sub-clause	Requirement	Compliance Grade
2.2.1	Water NSW must manage and protect the Declared Catchment Areas in a manner that is consistent with its objectives and functions under the Act, the Water Quality Management System required under Clause 2.1 of this Licence, the Asset Management System required under Clause 5.1 of this Licence, and the Environmental Management System required under Clause 5.2 of this Licence.	 Compliant
Risk	Target for Full Compliance	
Ineffective management of catchment areas impacts the first barrier for water quality protection and therefore represents a high risk to water quality, public health and the environment.	Evidence that WaterNSW has managed and protected catchment areas consistent with its objectives and functions under the Act, the Water Quality Management System, the Asset Management System and the Environmental Management System.	
Obligation		
WaterNSW is obligated to develop and implement strategies within the declared catchment areas to manage the risk to water quality and the environment including identifying sources of hazards and hazardous events and establishing preventive measures to reduce risk.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Water Quality Policy</i> (CD2014 5[v4]), 21-Dec-17. ▪ WaterNSW, <i>Strategic Asset Management Policy</i> (CD2015 436[v6]). ▪ WaterNSW, <i>Asset Management Policy</i> (CD2015 488[v3]), Sep-18. ▪ WaterNSW, <i>Environment Policy</i> (CD2015 593[v2]), 31-Oct-18. ▪ WaterNSW, <i>Environmental Incident Management Policy</i> (CD2016 6[v2]). ▪ WaterNSW, <i>Catchment Protection Work Program FY 2019</i> (D2018 65756), 2018-19. ▪ WaterNSW, <i>Prepare Catchment Protection Work Program - Procedure</i> (CD2019 30). ▪ WaterNSW, <i>CATCHMENT PROTECTION - Joint Team Tracker - Jan 2019 till Present</i> (D2019 57084), 2019. ▪ WaterNSW, <i>Annual Catchment Management Report- Enforcement and Surveillance Progress Report</i> (D2019 18968), 30-Jun-19. ▪ WaterNSW, <i>NorBE Tool Training - Wollondilly Shire Council - Attendance Sheet</i> (D2019 14117), 13-Feb-19. ▪ WaterNSW, <i>NorBE Tool Training - Shoalhaven City Council - Attendance Sheet</i> (D2019 70850), 11-Jul 19. ▪ Planning & Environment NSW Government, <i>SORAC Meeting 51 Papers</i> (D2019 63245), 		

27-Jun-19.

- WaterNSW, *Notes from SORAC Meeting 51* (D2019 67968), 27-Jun-19.
- WaterNSW, *Procedures for Responding to Mining Matters* (CD2016 90[v1]), Oct-18.
- WaterNSW, *Fire Management for Water Quality and Quantity - Policy & Implementation Guideline* (CD2011 130[v2]), Dec-17.
- WaterNSW, *WaterNSW Bushfire Operational Protocol* (D2016 112894[v4]), 2018-19.
- Wollondilly/Wingecarribee Bush Fire Management Committees, *BFMC Minutes* 08.03.2018 (D2018 62991), 8-Mar-18.
- NSW Rural Fire Service, *BFMC and FAFT Minutes* (D2019 47880), 13-May-19.
- WaterNSW, *Contract Management Plan Rural Fire Service 2019* (D2019 60524), 2019.
- WaterNSW, *ELA Form for Minor Works - Fire* (D2019 61847[v3]), 13-Sep-19.
- WaterNSW, *Recreation Area and Catchment Closures flow chart and Checklist* (D2013 4324).
- WaterNSW, *Procedure - Entry to Special Areas and WaterNSW lands managed by Catchment Assets* (D2013 45681).
- WaterNSW, *Work Instruction - Catchment Assets WaterNSW managed lands - condition assessment and notification* (D2013 47596).
- WaterNSW, *Water NSW Pest and Weed Management Strategy for Sydney Catchment Area* (D2014 46115).
- WaterNSW, *WaterNSW Approved Fire Fighting Chemicals 2018-19* (D2015 108080), 2018-19.
- WaterNSW, *Roads - Completed Inspections - FY19 - Report from ARK records* (D2019 85000), 13-Aug 19.
- WaterNSW, *Land Management Database Slashing Program Dashboard FY19* (D2019 85014), 2019.
- WaterNSW, *Land Management Database Fence and Gate - Condition Report Data - FY19* (D2019 85014), 2019.
- WaterNSW, *SAMP - Referencing Page Land AMS Mapping - FY19* (D2019 85031), 2019.
- WaterNSW *AMS - Mapping of Land Asset Alignment to SAMP - Roads - Access Management - Biosecurity* (D2019 85-33 CD2016 56v2), 2019.
- WaterNSW, *Catchment Stakeholders 2019* (D2019 85976), 2019.
- WaterNSW, *Email: Draper to Council - request for Camden Local Government Area Community within the Lets Connect Document* (D2019 86978), 11-Apr-19.
- WaterNSW, *Preparation - WaterNSW - Builders Camden Council BBQ Breakfast - Fig Tree Park* (D2019 87003), 11-Apr-19.
- WaterNSW, *Completion of Education - Camden Council LGA - Builders and Developers - Controlled Area - Upper Canal* (D2019 87027), 11-Apr-19.
- WaterNSW, *Email: Draper Approval - Approach BCF - Educational Purposes* (D2019 87045), 8-May-19.
- SE Local Land Services, *Regional Weeds Committee* (D2019 67582), 14-May-19.
- SE Local Land Services, *RPAC Meeting 26Nov18 Final Draft Minutes* (D2019 67634), 26-Nov-18.
- SE Local Land Services, *Shoalhaven Wild Dog Plan Meeting* (D2019 67670), 20-May-19.

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- WaterNSW, *Updated invitation with note Southern Hi-t Plan Review* (D2019 67695), 4-Jul-19.
 - SE Local Land Services, *Taralga Southern Highland Wild Dog Plan Working Committee Meeting* (D2019 67699), 8-Aug-17.
 - WaterNSW, *IWSMP Meeting Agenda* (D2019 67715), 20-Jun-19.
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Summary of reasons for grade

WaterNSW has established and implemented a process for identifying catchment risks and implementing preventive measures to manage the risks. WaterNSW provided evidence of the establishment of relevant policies, strategies, procedures and work instructions to implement catchment management activities. Records were provided to demonstrate implementation of the established processes.

The catchment management processes implemented by WaterNSW are integrated with the catchment to tap risk assessment detailed in the WQMS, and deliver on the objectives of the EMS. Management of the physical assets, including catchment land, is undertaken in accordance with the Asset Management System and the more specific arrangements detailed in the Catchment Asset Class Strategy.

WaterNSW has been assessed as *Compliant* with this licence clause.

Discussion and notes

Policies have been developed to underpin the establishment of management systems that contribute to catchment management:

- *Water Quality Policy*;²⁸⁴
- *Strategic Asset Management Policy*;²⁸⁵
- *Asset Management Policy*;²⁸⁶
- *Environment Policy*;²⁸⁷ and
- *Environmental Incident Management Policy*.²⁸⁸

Management systems (water quality, asset management and environment) are in place and cover the declared catchments, as discussed in detail under the relevant clauses. For example, from an asset management perspective, the *Strategic Asset Management Plan* (SAMP) identifies “Manage and Protect Declared Catchment Areas” as one of the asset management objectives. WaterNSW has developed a Catchment Asset Class Strategy which sets out its strategic approach to the management of its catchment assets, including the land over which it holds management jurisdiction.

WaterNSW has developed a *Catchment Protection Work Program* (CPWP)²⁸⁹ that sets out the key management and protection activities within the Declared Catchment Area. The process for developing the CPWP is outlined in the *Prepare Catchment Protection Work Program – Procedure*.²⁹⁰

The *Catchment Protection Work Program* is prepared each year, which identifies the key initiatives for managing and protecting the Declared Catchment Area. The six broad initiatives are:

²⁸⁴ WaterNSW, *Water Quality Policy* (CD2014 5[v4]), 21-Dec-17.

²⁸⁵ WaterNSW, *Strategic Asset Management Policy* (CD2015 436[v6]).

²⁸⁶ WaterNSW, *Asset Management Policy* (CD2015 488[v3]), Sep-18.

²⁸⁷ WaterNSW, *Environment Policy* (CD2015 593[v2]), 31-Oct-18.

²⁸⁸ WaterNSW, *Environmental Incident Management Policy* (CD2016 6[v2]).

²⁸⁹ WaterNSW, *Catchment Protection Work Program FY 2019* (D2018 65756), 2018-19.

²⁹⁰ WaterNSW, *Prepare Catchment Protection Work Program - Procedure* (CD2019 30).

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- Improved Practices;
 - Land Management;
 - Water Quality Science;
 - Enforcement and Surveillance;
 - Land Use Planning; and
 - Engaged Communities.

WaterNSW has direct responsibilities as a land and asset owner within the Declared Catchment Area, and as a joint manager of the Special Areas. However, the majority of the land within the Declared Catchment Area is held by other parties and WaterNSW must work with a range of stakeholders to protect and manage land in the declared catchment.

There are four key focus areas within the Improved Practices initiatives under the CPWP including the Grazing and Erosion Program, Urban Stormwater Program, Dairy Program and Economic Appraisal Program.

The Land Management initiative involves (for example) mapping of assets, development of work programs, raising and completion of work orders, condition assessments and inspections of completed work in accordance with the requirements and procedures of the Asset Management System. Activities include land maintenance (slashing of grass and vegetation), inspection and maintenance of unsealed roads, maintenance of recreational facilities, and maintenance of barriers and fences.

Land Use Planning activities undertaken under the CPWP are tracked using the *Catchment Protection Joint Team Tracker*.²⁹¹ Implementation and compliance with the CPWP are evaluated through the *Annual Catchment Management Report- Enforcement and Surveillance Progress Report*.²⁹² WaterNSW reviews the progress of CPWP in December each year and advises the Board on progress. WaterNSW reports annually on all catchment activities completed within the financial year and any variances against the plan; the report is provided to the WaterNSW Board and IPART.

Development Control

New development within the Declared Catchment Area requires development consent and WaterNSW is involved in the development assessment process predominantly through use of the NorBE tests which requires all proposed developments in the declared catchment to have a neutral or beneficial effect on water quality. WaterNSW works with councils and consultants to implement this process. Relevant evidence of implementation includes:

- *NorBE Tool Training - Wollondilly Shire Council - Attendance Sheet*,²⁹³
- *NorBE Tool Training - Shoalhaven City Council - Attendance Sheet*.²⁹⁴

The NorBE user guide and NorBE assessment guidelines are available on the WaterNSW website.

WaterNSW also is a concurrence agency for complex development applications in the declared catchment and has indicated that it assesses approximately 150 applications per year. State Significant Development (SSD) applications are also subject to the NorBE test, and this is assessed by the Department of Planning, Industry and Environment (DPIE), based partly on advice from WaterNSW. Evidence provided that is relevant to these activities includes:

²⁹¹ WaterNSW, *CATCHMENT PROTECTION - Joint Team Tracker - Jan 2019 till Present* (D2019 57084), 2019.

²⁹² WaterNSW, *Annual Catchment Management Report- Enforcement and Surveillance Progress Report* (D2019 18968), 30-Jun-19.

²⁹³ WaterNSW, *NorBE Tool Training - Wollondilly Shire Council - Attendance Sheet* (D2019 14117), 13-Feb-19.

²⁹⁴ WaterNSW, *NorBE Tool Training - Shoalhaven City Council - Attendance Sheet* (D2019 70850), 11-Jul-19.

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- *SORAC Meeting 51 Papers*;²⁹⁵ and
 - *Notes from SORAC Meeting 51*.²⁹⁶

Mining

WaterNSW provides advice to inform decision-making on existing and new mining projects. This advice is based on the WaterNSW Mining Principles, which are published on the WaterNSW website. WaterNSW has established the *Procedures for Responding to Mining Matters*²⁹⁷ which outlines the process to assess mining and coal seam gas proposal against the defined Mining Principles.

Fire Management

WaterNSW participates in interagency committees constituted under the *Rural Fires Act 1997* and *Biosecurity Act 2015* to ensure that proposed works are communicated and feed into regional priorities. WaterNSW has a partnership with the Rural Fire Services (RFS) to deliver fire management on WaterNSW land within the Special Areas and at other WaterNSW land in the catchment. WaterNSW has established the *Fire Management for Water Quality and Quantity - Policy & Implementation Guideline*²⁹⁸ which outlines the bushfire management principles and strategies. Evidence of implementation of bushfire management activities include:

- *WaterNSW, WaterNSW Bushfire Operational Protocol*;²⁹⁹
- *Bush Fire Management Committees, BFMC Minutes 08.03.2018*;³⁰⁰
- *BFMC and FAFT Minutes*;³⁰¹
- *Contract Management Plan Rural Fire Service 2019*;³⁰² and
- *ELA Form for Minor Works – Fire*.³⁰³

Documented procedures

Documented strategies, procedures and work instructions have been developed for a range of catchment activities. Examples provided include:

- *Recreation Area and Catchment Closures flow chart and Checklist*;³⁰⁴
- *Procedure - Entry to Special Areas and WaterNSW lands managed by Catchment Assets*;³⁰⁵
- *Work Instruction - Catchment Assets WaterNSW managed lands - condition assessment and notification*;³⁰⁶
- *Water NSW Pest and Weed Management Strategy for Sydney Catchment Area*;³⁰⁷ and
- *WaterNSW Approved Fire Fighting Chemicals 2018-19*.³⁰⁸

Evidence of implementation includes:

²⁹⁵ Planning & Environment NSW Government, *SORAC Meeting 51 Papers* (D2019 63245), 27-Jun-19.

²⁹⁶ WaterNSW, *Notes from SORAC Meeting 51* (D2019 67968), 27-Jun-19.

²⁹⁷ WaterNSW, *Procedures for Responding to Mining Matters* (CD2016 90[v1]), Oct-18.

²⁹⁸ WaterNSW, *Fire Management for Water Quality and Quantity - Policy & Implementation Guideline* (CD2011 130[v2]), Dec-17.

²⁹⁹ WaterNSW, *WaterNSW Bushfire Operational Protocol* (D2016 112894[v4]), 2018-19.

³⁰⁰ Wollondilly/Wingecarribee Bush Fire Management Committees, *BFMC Minutes 08.03.2018* (D2018 62991), 8-Mar-18.

³⁰¹ NSW Rural Fire Service, *BFMC and FAFT Minutes* (D2019 47880), 13-May-19.

³⁰² WaterNSW, *Contract Management Plan Rural Fire Service 2019* (D2019 60524), 2019.

³⁰³ WaterNSW, *ELA Form for Minor Works - Fire* (D2019 61847[v3]), 13-Sep-19.

³⁰⁴ WaterNSW, *Recreation Area and Catchment Closures flow chart and Checklist* (D2013 4324).

³⁰⁵ WaterNSW, *Procedure - Entry to Special Areas and WaterNSW lands managed by Catchment Assets* (D2013 45681).

³⁰⁶ WaterNSW, *Work Instruction - Catchment Assets WaterNSW managed lands - condition assessment and notification* (D2013 47596).

³⁰⁷ WaterNSW, *Water NSW Pest and Weed Management Strategy for Sydney Catchment Area* (D2014 46115).

³⁰⁸ WaterNSW, *WaterNSW Approved Fire Fighting Chemicals 2018-19* (D2015 108080), 2018-19.

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- *Roads - Completed Inspections - FY19 - Report from ARK records;*³⁰⁹
 - *Land Management Database Slashing Program Dashboard FY19;*³¹⁰
 - *Land Management Database Fence and Gate - Condition Report Data - FY19;*³¹¹
 - *SAMP - Referencing Page Land AMS Mapping - FY19;*³¹² and
 - *AMS - Mapping of Land Asset Alignment to SAMP - Roads - Access Management – Biosecurity.*³¹³

Stakeholder Engagement

Examples of WaterNSW's engagement with stakeholders across a range of catchment activities include:

- register of *Catchment Stakeholders;*³¹⁴
- *Email: Draper to Council - request for Camden Local Government Area Community within the Lets Connect Document;*³¹⁵
- *Preparation - WaterNSW - Builders Camden Council BBQ Breakfast - Fig Tree Park;*³¹⁶
- *Completion of Education - Camden Council LGA - Builders and Developers - Controlled Area - Upper Canal;*³¹⁷
- *Email: Draper Approval - Approach BCF - Educational Purposes;*³¹⁸
- *Regional Weeds Committee;*³¹⁹
- *RPAC Meeting 26Nov18 Final Draft Minutes;*³²⁰
- *Shoalhaven Wild Dog Plan Meeting;*³²¹
- *Updated invitation with note Southern Hi-t Plan Review;*³²²
- *Taralga Southern Highland Wild Dog Plan Working Committee Meeting;*³²³
- *IWSMP Meeting Agenda.*³²⁴

Recommendations

There are no recommendations in respect of this obligation.

³⁰⁹ WaterNSW, *Roads - Completed Inspections - FY19 - Report from ARK records* (D2019 85000), 13-Aug-19.

³¹⁰ WaterNSW, *Land Management Database Slashing Program Dashboard FY19* (D2019 85014), 2019.

³¹¹ WaterNSW, *Land Management Database Fence and Gate - Condition Report Data - FY19* (D2019 85014), 2019.

³¹² WaterNSW, *SAMP - Referencing Page Land AMS Mapping - FY19* (D2019 85031), 2019.

³¹³ WaterNSW *AMS - Mapping of Land Asset Alignment to SAMP - Roads - Access Management - Biosecurity* (D2019 85-33 CD2016 56v2), 2019.

³¹⁴ WaterNSW, *Catchment Stakeholders 2019* (D2019 85976), 2019.

³¹⁵ WaterNSW, *Email: Draper to Council - request for Camden Local Government Area Community within the Lets Connect Document* (D2019 86978), 11-Apr-19.

³¹⁶ WaterNSW, *Preparation - WaterNSW - Builders Camden Council BBQ Breakfast - Fig Tree Park* (D2019 87003), 11-Apr-19.

³¹⁷ WaterNSW, *Completion of Education - Camden Council LGA - Builders and Developers - Controlled Area - Upper Canal* (D2019 87027), 11-Apr-19.

³¹⁸ WaterNSW, *Email: Draper Approval - Approach BCF - Educational Purposes* (D2019 87045), 8-May-19.

³¹⁹ SE Local Land Services, *Regional Weeds Committee* (D2019 67582), 14-May-19.

³²⁰ SE Local Land Services, *RPAC Meeting 26Nov18 Final Draft Minutes* (D2019 67634), 26-Nov-18.

³²¹ SE Local Land Services, *Shoalhaven Wild Dog Plan Meeting* (D2019 67670), 20-May-19.

³²² WaterNSW, *Updated invitation with note Southern Hi-t Plan Review* (D2019 67695), 4-Jul-19.

³²³ SE Local Land Services, *Taralga Southern Highland Wild Dog Plan Working Committee Meeting* (D2019 67699), 8-Aug-17.

³²⁴ WaterNSW, *IWSMP Meeting Agenda* (D2019 67715), 20-Jun-19.

Opportunities for improvement


No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

3.2.3 Catchment Infrastructure Works management (clause 2.4)

Table 3.6 Catchment Infrastructure Works management (sub-clause 2.4.1)

Sub-clause	Requirement	Compliance Grade
2.4.1	Water NSW must ensure that, in Declared Catchment Areas, the Catchment Infrastructure Works are operated and managed consistently with the Design Criteria and the Asset Management System referred to in clause 5.1.	 Compliant
Risk	Target for Full Compliance	
This requirement represents a high operational risk. Operation and management of the Catchment Infrastructure Works in accordance with the Design Criteria and the Asset Management System is essential to ensuring the continuity of water supply.	Evidence that the Catchment Infrastructure Works were operated and managed consistent with the Design Criteria and the Asset Management System during the audit period.	
Obligation		
This obligation requires WaterNSW to operate the infrastructure works within the Declared Catchment Areas consistently with the Design Criteria and in accordance with the Asset Management System.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, Greater Sydney's water supply system yield, May 2018, available at: https://www.waternsw.com.au/_data/assets/pdf_file/0014/132035/Greater-Sydneys-water-supply-system-yield-2018.pdf. ▪ WaterNSW, <i>Strategic Asset Management Plan; Asset Management System Manual</i> (CD2015/436) (Version 6), April 2019. ▪ Document: <i>Asset Class Strategies Development Plan</i> (D2019/79611), Revision August 2019. ▪ MS Excel workbook: <i>Greater Sydney Storage System Nomograph 181218</i> (D2018 139745). ▪ MS Excel workbook: <i>MASTER SCHEDULE - WARRA PL OUTAGE ON_600GL_MWP_130619</i> (D2019 60949). ▪ MS Excel workbook: <i>Shoalhaven Transfers Schedule 09012019</i> (D2019/2745). ▪ Document: <i>Briefing Note - Shoalhaven System Outage Program 2019</i> (D2019/26174). ▪ Document (email): <i>WaterNSW Planned Weekly Pumping for the Next 4 Weeks 27-12-18</i> (D2019/3916). ▪ Document: <i>Medium Term Risks in the Greater Sydney System Summer 2018</i> (D2018/138696). ▪ Document: <i>Water Security Status Report April 2019</i> (D2019/84301). ▪ PowerPoint presentation: <i>Greater Sydney System; Quarterly Planning Meeting - April 2019</i> (D2019/35848). ▪ Document: <i>WNSW Executive - Monthly Meeting - 4 and 5 Feb 19 - System Operations and Water Delivery</i> (D2019/1015). 		

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- WaterNSW, *Protocol for Managing Supply Interruptions in Greater Sydney* (CD2019/140) (Revision 1), July 2019.
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Summary of reasons for grade

WaterNSW demonstrated that it had continued to operate and manage the Catchment Infrastructure Works consistently with the Design Criteria and in accordance the Asset Management System during the audit period. The Design Criteria are reflected in scheduling tools that have been developed using the WATHNET system model. These scheduling tools have been used to determine water source and transmission arrangements subject to constraints in place at the time.

Infrastructure availability is a key input to the scheduling process. The requirement for life cycle management of the assets (which includes maintenance and renewal), as defined by the Asset Management System, means that outages for maintenance and/or renewal or development works must be considered as part of the operating regime. WaterNSW demonstrated that infrastructure outage requirements are taken into account as part of the scheduling process.

On this basis, WaterNSW is considered to have demonstrated compliance with this obligation.

Discussion and notes

Catchment Infrastructure Works are defined in the *Water NSW Act 2014* as:

- “(a) water storages, water mains, or connected or associated works, or
 - (b) monitoring devices in, under, over or near any works referred to in paragraph (a), or
 - (c) any works ancillary or antecedent to any works referred to in paragraph (a) or (b), or
 - (d) hydro-electric plants or associated infrastructure or works,
- and includes anything prescribed by the regulations as being within this definition, but excludes anything prescribed by the regulations as being outside this definition.”

In its response to the Audit Questionnaire, WaterNSW advised that the Design Criteria are documented with the *System Yield Review Report*,³²⁵ which is available on its website. The Design Criteria, which reflect the length and frequency of water restrictions that is regarded as ‘acceptable’, as well as ensuring that water supplies are not depleted, are defined as:

- *Security – storages should not approach emptiness (defined as 5% of water in the storage) more often than 0.001% of the time, or one chance in 100,000 in any one month.*
- *Robustness – imposed water restrictions should not occur more often than once in every ten years on average; that is, restrictions are not too frequent.*
- *Reliability – imposed water restrictions should not last longer than 3% of the time on average, or 3 months in 100 months.”*

Operation and management of the system (Catchment Infrastructure) in accordance with the Design Criteria is identified as one of the WaterNSW’s asset management objectives in the *Strategic Asset Management Plan (SAMP)*.³²⁶ Compliance with the Design Criteria is also identified as a key aspect of meeting the level of service requirements of Sydney Water, WaterNSW’s principal customer within the Declared Catchment Area.³²⁷

³²⁵ WaterNSW, Greater Sydney’s water supply system yield, May 2018, available at:

https://www.waternsw.com.au/data/assets/pdf_file/0014/132035/Greater-Sydneys-water-supply-system-yield-2018.pdf.

³²⁶ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019, appendix E.

³²⁷ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019, section 4.1.3.

Asset Class Strategies provide high level strategic direction in respect of the whole-of-life cycle management of a group of similar assets. Many of the Asset Class Strategies referred to in the *Asset Class Strategies Development Plan*³²⁸ relate to the Catchment Infrastructure Works in the Declared Catchment Area. These include strategies in respect of (for example) Dam Structures, Tunnels, Canals, SCADA & Process Control, and Catchment. Although not all Asset Class Strategies have yet been fully developed, those related to critical assets have predominantly been completed and a plan for completion of the remainder is being actively implemented (refer Table 4.9).

In respect of operation of the Catchment Infrastructure Works, WaterNSW further advised that:

“System operating rules as detailed in the Metro Water Plan 2017 are incorporated into the WATHNET yield model. In addition to the key drought response measures (also included in the Water Sharing Plan) such as Shoalhaven Transfers, a set of operating principles in the form of a draw down chart guides decision making in regard to source selection. The draw down chart is integrated into WNSW Operational tools to ensure the system is managed following the hierarchy of objectives used to determine yield.

The impact of outages is assessed using the WATHNET model to understand the potential impact on drought response.”

The principal objectives in implementing the system operating rules are to:

- maintain equal supply security across all zones;
- maintain environmental flows; and
- avoid spills.

WaterNSW implements the system operating rules using tools including the following, which as noted by WaterNSW, have been developed using the WATHNET model:

- a System Nomograph (MS Excel workbook)³²⁹ – this is the principal tool used for operational management of the system. It includes a chart for each water supply dam, showing capacity (%) and volume available for the full range of water levels for each dam from full to empty; constraints on various supply modes are also shown.
- a Master Schedule (MS Excel workbook)³³⁰ – this tool is used to model the system over the short term (12 months). Using information regarding infrastructure availability and other relevant inputs, it allows the impact of various source selection options on storage balances to be assessed, thereby providing planning to ensure that supply security is optimised across all storages and the likelihood of spills is minimised.
- A Shoalhaven Transfers Schedule (MS Excel workbook) – this tool is used to schedule transfers from the Shoalhaven System such that its use is optimised.

These scheduling tools are used to determine water source and transmission arrangements subject to constraints including water source and infrastructure availability during any period of the time.

As examples:

- the *Briefing Note - Shoalhaven System Outage Program 2019*³³¹ details the proposed outage program for the Shoalhaven Scheme. Proposed outage programs identify infrastructure availability, which a key input to the scheduling tools; and
- the *WaterNSW Planned Weekly Pumping for the Next 4 Weeks 27-12-18* is an example of an instruction, which reflects the outcome of the scheduling process.³³²

³²⁸ Document: *Asset Class Strategies Development Plan* (D2019/79611), Revision August 2019.

³²⁹ MS Excel workbook: *Greater Sydney Storage System Nomograph 181218* (D2018 139745).

³³⁰ MS Excel workbook: *MASTER SCHEDULE - WARRA PL OUTAGE ON_600GL_MWP_130619* (D2019 60949).

³³¹ Document: *Briefing Note - Shoalhaven System Outage Program 2019* (D2019/26174).

³³² Document (email): *WaterNSW Planned Weekly Pumping for the Next 4 Weeks 27-12-18* (D2019/3916).

Seasonal risk assessments (e.g. *Greater Sydney Water Supply System Seasonal Risk Assessment Summer 2018–19*)³³³ and monthly *Water Security Reports* (e.g. for May 2019)³³⁴ outline key risks and strategies in place to optimise system operations in the context of drought response, medium term operations, water quality and compliance with Raw Water Supply Agreements and the availability of assets. Each of these instruments addresses system operation and associated risks on a zone by zone basis.

Quarterly planning meetings are held to assess operational status and plan operations for the ensuing period. The presentation provided for the *Greater Sydney System; Quarterly Planning Meeting* conducted in April 2019³³⁵ (for example) addressed issues including: seasonal rainfall outlook; the demand profile; the estimated timing for drought triggers; water quality in storages; and the major outage program. Information provided in respect of the major outage program was used to inform decisions regarding its implementation.

WaterNSW provided a sample of monthly KPI reporting³³⁶ provided to monthly Executive meetings. The report discusses performance against the system draw down chart, which has been developed using the WATHNET model and reflects the system operating rules, and the management actions identified.

WaterNSW now has in place a *Protocol for Managing Supply Interruptions in Greater Sydney*,³³⁷ which identifies the levels of service obligations for each customer, together with the actions to be taken in respect of both planned and unplanned interruptions. In each case, these refer to the relevant supply agreement and operating protocols.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

³³³ Document: *Medium Term Risks in the Greater Sydney System Summer 2018* (D2018/138696).

³³⁴ Document: *Water Security Status Report April 2019* (D2019/84301).


³³⁵ PowerPoint presentation: *Greater Sydney System; Quarterly Planning Meeting - April 2019* (D2019/35848).

³³⁶ Document: *WNSW Executive Monthly Meeting - 4 and 5 Feb 19 - System Operations and Water Delivery* (D2019/1015).

³³⁷ WaterNSW, *Protocol for Managing Supply Interruptions in Greater Sydney* (CD2019/140) (Revision 1), July 2019.

3.2.4 Calculating System Yield (clause 2.5)

Table 3.7 Calculating System Yield (sub-clause 2.5.1)

Sub-clause	Requirement	Compliance Grade
2.5.1	<p>Water NSW must recalculate the System Yield in respect of a Declared Catchment Area on the occurrence of any one or more of the following events:</p> <ol style="list-style-type: none"> the conclusion of any drought event affecting the Declared Catchment Area; the commencement of any modification or augmentation to the Catchment Infrastructure Works or Customers' infrastructure, that will have a significant impact on Water NSW's Supply of water in respect of the Declared Catchment Area; any material change to the operating rules of the Catchment Infrastructure Works in respect of the Declared Catchment Area; or any material change to the Design Criteria in respect of the Declared Catchment Area. 	 Compliant
Risk	Target for Full Compliance	
This requirement represents a high operational risk. Any of the nominated events may, singularly or collectively, have a significant impact on the System Yield, which may in turn require a change to system operations.	Evidence the WaterNSW had re-calculated the System Yield if any of the nominated events had occurred.	
Obligation		
<p>This obligation requires WaterNSW to recalculate the System Yield in respect of the Declared Catchment Area if any one or more of four trigger events occurs. These triggers include: conclusion of a drought event; modification or augmentation of catchment infrastructure; changes to the operating rules; or changes to the Design Criteria.</p> <p>System Yield is the maximum amount of water that can be supplied annually in the long term, taking into account the constraints imposed in respect of operation of the system.</p>		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ Letter dated 27 August 2019 from NRAR to WaterNSW (re: <i>Suspension of the operation of clause 30 of the Metro Water Sharing Plan and amendment of conditions 14 and 15 of 10CA117211</i>) (OUT19-11560). ▪ NSW Government, <i>Water Sharing Plan for Greater Metropolitan Region Unregulated River Water Sources 2011</i>, available at: https://www.legislation.nsw.gov.au/#/view/regulation/2011/112. ▪ NSW Government, <i>Metropolitan Water Plan 2017</i>, available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/About-us/Metropolitan-Water/2017-Metropolitan-Water-Plan.pdf?la=en. 		

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- DPI Office of Water, *Sydney Catchment Authority; Water Licences and Approvals Package*, May 2012 (D2013/95242).
 - MS Excel workbook: *Greater Sydney Storage System Nomograph 150719* (D2019/73578).
 - Document (email): *WaterNSW Planned Weekly Pumping for the Next 4 Weeks 27-12-18* (D2019/3916).
 - MS Excel workbook: *Shoalhaven Transfers Schedule 09012019* (D2019/2745).
 - Document: *Briefing Note - Shoalhaven System Outage Program 2019* (D2019/26174).
 - WaterNSW, *Submission: Sydney water supply system yield update August 2019*, 29 August 2019.
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Summary of reasons for grade

WaterNSW advised that the System Yield had been recalculated immediately prior to the end of the audit period after advice of a change in configuration of the catchment infrastructure was received from the Natural Resource Access Regulator on 27 August 2019. WaterNSW demonstrated, by the provision of a submission paper in respect of the recalculation, that the recalculation had been completed.

Accordingly, WaterNSW is considered to have demonstrated compliance with this obligation.

Discussion and notes

During the audit interviews, WaterNSW advised that recalculation of the System Yield had been triggered just prior to the end of the audit period.

On 27 August 2019, WaterNSW was advised by the Natural Resources Access Regulator (NRAR)³³⁸ of a decision to suspend the operation of clause 30 of the *Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources 2011*.³³⁹ Clause 30 of the *Water Sharing Plan* details the Transfer rules from the Shoalhaven River Water Source to the Upper Nepean and Upstream Warragamba Water Source.

Conditions 14 and 15 of water supply work and water use approval 10CA117211 were amended to implement this decision. WaterNSW advised that these amendments, which increase the operating volume of Tallowa Dam from one metre below Full Supply Level (FSL) to three metres below Full Supply Level, constituted a change in the configuration of the catchment infrastructure, thereby triggering recalculation of the System Yield. More specifically, WaterNSW interpreted this increase in operating volume (volume of available water) as the commencement of a modification to the Catchment Infrastructure Works, thereby triggering recalculation pursuant to part b) of this obligation.

In respect of the other events that require recalculation of the System Yield, during the audit period there was:

- no conclusion of drought;
 - no change to the operating rules, which include:
 - System Operating Rules set out in the *Metropolitan Water Plan 2017*;³⁴⁰
 - associated Work Approvals and Operating Protocols;³⁴¹
 - Storage Balancing Rules as per *Nomograph*;³⁴² and
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³³⁸ Letter dated 27 August 2019 from NRAR to WaterNSW (re: *Suspension of the operation of clause 30 of the Metro Water Sharing Plan and amendment of conditions 14 and 15 of 10CA117211*) (OUT19-11560).

³³⁹ NSW Government, *Water Sharing Plan for Greater Metropolitan Region Unregulated River Water Sources 2011*, available at: <https://www.legislation.nsw.gov.au/#/view/regulation/2011/112>.

³⁴⁰ NSW Government, *Metropolitan Water Plan 2017*, available at: <https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/About-us/Metropolitan-Water/2017-Metropolitan-Water-Plan.pdf?la=en>.

³⁴¹ DPI Office of Water, *Sydney Catchment Authority; Water Licences and Approvals Package* (D2013/95242), May 2012.

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- operating rules and agreement with Origin Energy in respect of Shoalhaven Transfers.^{343,344,345}

- no change to the Design Criteria.

Accordingly, a recalculation of System Yield was not triggered on any of these bases.

WaterNSW provided a copy of a Submission paper dated 29 August 2019,³⁴⁶ which detailed:

- the reasons why the System Yield had been recalculated;
- the operating rules and system information used for yield estimation; and
- the outcomes of the recalculation.

The recalculation resulted in no change in the System Yield, which remained at 570 gigalitres per annum (GL/a).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

³⁴² MS Excel workbook: *Greater Sydney Storage System Nomograph 150719* (D2019/73578).


³⁴³ Document: *Briefing Note - Shoalhaven System Outage Program 2019* (D2019/26174).

³⁴⁴ MS Excel workbook: *Shoalhaven Transfers Schedule 09012019* (D2019/2745).

³⁴⁵ Document (email): *WaterNSW Planned Weekly Pumping For The Next 4 Weeks 27-12-18* (D2019/3916).

³⁴⁶ WaterNSW, *Submission: Sydney water supply system yield update August 2019*, 29 August 2019.

Table 3.8 Calculating System Yield (sub-clause 2.5.2)

Sub-clause	Requirement	Compliance Grade
2.5.2	<p>In accordance with the Reporting Manual, 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>	 No Requirement
Risk	<p>This requirement represents a moderate short-term, but potentially high long-term risk. Whilst changes to the System Yield may not affect effective operation of the water supply system in the short-term, it is essential that the Minister is aware of any changes that may adversely impact the future availability of water.</p>	<p>Target for Full Compliance</p> <p>Evidence that the Minister has been advised of any changes to the System Yield or if WaterNSW considers that demand may exceed the System Yield.</p>
Obligation	<p>This obligation requires WaterNSW to notify the Minister of any changes to the calculated System Yield or upon identifying that the future demand for water will exceed the System Yield.</p>	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Submission: Sydney water supply system yield update August 2019</i>, 29 August 2019. ▪ Letter dated 27 August 2019 from NRAR to WaterNSW (re: <i>Suspension of the operation of clause 30 of the Metro Water Sharing Plan and amendment of conditions 14 and 15 of 10CA117211</i>) (OUT19-11560). 	
Summary of reasons for grade	<p>Whilst recalculation was triggered within the audit period, such recalculation resulted in no change to the System Yield. Accordingly, there was no requirement to notify the Minister pursuant to this obligation.</p> <p>Furthermore, as the estimate of system demand was not updated during the audit period and there was no change to the System Yield, there was no requirement for WaterNSW to notify the Minister that it considers that future demand for Bulk Water may exceed the System Yield, or when any such exceedance might occur.</p>	

Discussion and notes

As reported in Table 3.7, a recalculation of System Yield was triggered just prior to the end of the audit period; more specifically by advice received by WaterNSW on 27 August 2019.

Recalculation resulted in no change to the System Yield, which remained at 570 gigalitres per annum (GL/a). The recalculation was detailed in a Submission paper³⁴⁷ dated 29 August 2019.

WaterNSW advised that reporting in respect of the recalculation was in progress. Given the timing, it would have been impractical for WaterNSW to have notified the Minister prior to the end of the audit period (30 August 2019).

It is noted that this obligation requires that the Minister be notified of any changes to the System Yield. Whilst it is considered appropriate that the Minister be notified of the outcome of the recalculation given that it was triggered following a decision made by the NSW Cabinet,³⁴⁸ for the purposes of this requirement, notification was not required as there had been no change in the System Yield.

Accordingly, it is assessed that from both a practical and technical perspective, there was no requirement to notify the Minister of any change to the System Yield.

WaterNSW advised that the estimate of system demand will be updated as part of a review to inform development of the next (2022) Metropolitan Water Plan. Given that, at this stage, there has been no change in either the demand estimate or System Yield, there has been no requirement for WaterNSW to notify the Minister that it considers that future demand for Bulk Water may exceed the System Yield, or when any such exceedance might occur.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.


Supplemental information

No supplemental information is provided in respect of this obligation.

³⁴⁷ WaterNSW, *Submission: Sydney water supply system yield update August 2019*, 29 August 2019.

³⁴⁸ Letter dated 27 August 2019 from NRAR to WaterNSW (re: *Suspension of the operation of clause 30 of the Metro Water Sharing Plan and amendment of conditions 14 and 15 of 10CA117211*) (OUT19-11560).

Table 3.9 Calculating System Yield (sub-clause 2.5.3)

Sub-clause	Requirement	Compliance Grade
2.5.3	As soon as practicable after advising the Minister of any changes to the System Yield under clause 2.5.2, Water NSW must, in accordance with the Reporting Manual, make details of those changes and the reasons for those changes available free of charge on its website for downloading by any person.	 No Requirement
<p>Risk</p> <p>This requirement represents a low risk. Whilst changes to the System Yield may be of interest to some members of the public, availability will not affect effective operation of the water supply system. Failure to make changes to the System Yield available may have an impact (albeit minimal) on WaterNSW’s public relations.</p>		<p>Target for Full Compliance</p> <p>Evidence that details of any changes and reasons for the changes to the System Yield have been made available to the public in accordance with the Reporting Manual as soon as practicable after advising the Minister.</p>
<p>Obligation</p> <p>This obligation requires WaterNSW to provide information regarding any changes to the System Yield and the reasons for the changes available on its website, as soon as practicable after advising the Minister of the change.</p>		
<p>Evidence sighted</p> <ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ PowerPoint presentation: <i>2019 IPART Operational Audit; Calculation of Yield</i>. 		
<p>Summary of reasons for grade</p> <p>There was change to the System Yield during the audit period and consequently no requirement for WaterNSW to notify the Minister of any such change pursuant to clause 2.5.2. Accordingly, there was no requirement for WaterNSW to make details of any changes, and the reasons for such changes, available on its website.</p>		
<p>Discussion and notes</p> <p>As reported in Table 3.8, there was no requirement for WaterNSW to notify the Minister pursuant to clause 2.5.2 during the audit period. Furthermore, it is considered impractical for WaterNSW to have notified the Minister of the outcomes of a recalculation of the System Yield (no change) that had been undertaken just prior to the end of the audit period.</p> <p>On this basis, there was no requirement for WaterNSW to make details of any changes to the System Yield and the reasons for such changes available on its website. Notwithstanding, WaterNSW indicated that it would report on the recalculation of the System Yield in accordance with the Reporting Manual.</p>		
<p>Recommendations</p> <p>There are no recommendations in respect of this obligation.</p>		

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.


Supplemental information

It is noted that, whilst there was no requirement for WaterNSW to publish details of a change to System Yield on its website during the audit period, details of the last change remain available on the website.³⁴⁹

³⁴⁹ WaterNSW, Greater Sydney's water supply system yield, May 2018, available at:
https://www.watnsw.com.au/_data/assets/pdf_file/0014/132035/Greater-Sydneys-water-supply-system-yield-2018.pdf.

3.2.5 Water conservation (clause 2.7)

Table 3.10 Water conservation (sub-clause 2.7.1)

Sub-clause	Requirement	Compliance Grade
2.7.1	By 1 November 2018, or by a later date as approved by IPART, Water NSW must submit to IPART, a report outlining Water NSW's water conservation strategy in relation to its operations under this Licence (Water Conservation Strategy).	 Compliant
Risk	Target for Full Compliance	
Failure to have an effective Water Conservation Strategy in place presents a high risk that WaterNSW's operations may not be optimal in respect of water conservation.	Evidence that a report outlining WaterNSW's Water Conservation Strategy had been submitted to IPART by 1 November 2018, or later approved date.	
Obligation		
This obligation requires WaterNSW to submit a report outlining its water conservation strategy in relation to its operations under this Licence to IPART. Such report was to be submitted by 1 November 2018, or later approved date.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Water Conservation Strategy</i>, October 2018 (D2018/110791). ▪ Email dated 1 November 2018 from WaterNSW to IPART (re: <i>HPE Records Manager Document: D2018/110791: WaterNSW Water Conservation Strategy</i>), including report as an attachment (D2019/67522). 		
Summary of reasons for grade		
WaterNSW demonstrated that it had prepared a report outlining its water conservation strategy in relation to its operations under this Licence and submitted it to IPART on 1 November 2018. Accordingly, WaterNSW is considered to have demonstrated compliance with this obligation.		
Discussion and notes		
WaterNSW provided a copy of the <i>Water Conservation Strategy</i> , ³⁵⁰ a report which outlines its water conservation strategy in relation to its operations under this Licence.		
WaterNSW also provided a copy of email correspondence to IPART, ³⁵¹ which demonstrated that the Water Conservation Strategy was submitted to IPART on 1 November 2018. This is consistent with the requirements of this obligation.		
Recommendations		
There are no recommendations in respect of this obligation.		

³⁵⁰ WaterNSW, *Water Conservation Strategy*, October 2018 (D2018/110791).

³⁵¹ Email dated 1 November 2018 from WaterNSW to IPART (re: *HPE Records Manager Document: D2018/110791: WaterNSW Water Conservation Strategy*), including report as an attachment (D2019/67522).


Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.11 Water conservation (sub-clause 2.7.2)

Sub-clause	Requirement	Compliance Grade
2.7.2	The Water Conservation Strategy must include: <ul style="list-style-type: none"> a) identification and documentation of existing water conservation activities; b) a process for identifying additional options for conserving water; c) a process for comparing these options; and d) a process for selecting options for implementation. 	 Compliant
Risk Failure to have an effective Water Conservation Strategy in place presents a high risk that WaterNSW's operations may not be optimal in respect of water conservation. Furthermore, it is essential that appropriate processes are in place for the identification, evaluation and selection of options for conserving water.		Target for Full Compliance Evidence that the Water Conservation Strategy includes the requisite information.
Obligation This obligation requires that the Water Conservation Strategy, i.e. the report submitted pursuant to clause 2.7.1, identifies existing water conservation activities and processes for identifying, comparing and selecting additional water conservation activities for implementation.		
Evidence sighted <ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Water Conservation Strategy</i>, October 2018 (D2018/110791). 		
Summary of reasons for grade Review of the <i>Water Conservation Strategy</i> confirmed that it addressed each of the requisite matters, including identification of existing water conservation activities, and processes for identifying, comparing and selecting additional water conservation activities for implementation. Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.		
Discussion and notes Review of the <i>Water Conservation Strategy</i> ³⁵² confirms that it addresses the requisite matters, as follows: <ul style="list-style-type: none"> ▪ Existing water conservation activities are identified in section 4 – ten existing activities are listed, together with a brief description in each case. ▪ A process for identifying additional options is outlined in section 5 – the process requires a balance of competing business needs and priorities, taking into consideration water quality and quantity, infrastructure management, supply and system operation, catchment management and customer service. Options for additional water conservation activities will be identified through a customer-centric approach which include transparency and the 		

³⁵² WaterNSW, *Water Conservation Strategy*, October 2018 (D2018/110791).

availability of WaterNSW's operational strategy and plans to its customers.

- A process for comparing options is outlined in section 5 – WaterNSW notes that it applies stringent technical and economic rigour in identifying, comparing and selecting potential options. Options will be compared on the basis of improving efficiency, increasing effectiveness and building resilience using tools including risk assessment, economic assessment and cost benefit analysis.
- A process for selecting options for implementation is outlined in section 5 – options for implementation will be selected through application of the comparison criteria in consultation with WaterNSW's customers. Selected options will be subject to internal approval processes prior to implementation.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.


Supplemental information

No supplemental information is provided in respect of this obligation.

3.3 Bulk Water storage and transmission (Licence Part 3)

3.3.1 Construct, maintain and operate Water Management Works (clause 3.1)

Table 3.12 Construct, maintain and operate Water Management Works (sub-clause 3.1.1)

Sub-clause	Requirement	Compliance Grade
3.1.1	Water NSW must construct, maintain and operate its Water Management Works in accordance with its Asset Management System referred to in clause 5.1.	 Compliant
Risk	Target for Full Compliance	
This requirement represents a high operational risk. Construction, operation and maintenance of the Water Management Works in accordance with the Asset Management System is essential to ensuring the continuity of water supply.	Evidence that the Water Management Works were constructed, operated and maintained in accordance with the Asset Management System during the audit period.	
Obligation	This obligation requires WaterNSW to construct, maintain and operate its Water Management Works in accordance with its Asset Management System. The Asset Management System details WaterNSW's approach to the whole-of-life management of its assets.	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Strategic Asset Management Plan; Asset Management System Manual</i> (CD2015/436) (Version 6), April 2019. ▪ WaterNSW, <i>20 Year Infrastructure Options Study Rural Valleys</i>, June 2018, available at: https://www.watarnsw.com.au/_data/assets/pdf_file/0019/132616/20-Year-Infrastructure-Options-Study-June-2018.pdf. ▪ NSW Government, <i>Metropolitan Water Plan 2017</i>, available at: https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/About-us/Metropolitan-Water/2017-Metropolitan-Water-Plan.pdf?la=en. ▪ WaterNSW, Project Delivery Framework (PDF) User Guide (Version 2.4), 16 November 2016 (CD2016/151). ▪ Document: <i>Project Initiation Brief; Blue Maintains Asset Upgrade</i>, 2 March 2018 (D2018/2476). ▪ WaterNSW, <i>MCP Blue Mountains Asset Upgrades; Preliminary Business Case</i> (Version 1.3), 24 September 2018 (D2018/76240). ▪ WaterNSW, <i>Maintain Capability Program; Blue Mountains Asset Upgrades; Final Business Case</i> (Version 1.1), 1 April 2019 (D2019/32984). ▪ WaterNSW, <i>Metropolitan Dams Electrical Safety; Preliminary Business Case</i> (Version 3.0), 18 July 2016 (D2016/34671). 	

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- WaterNSW, *Metropolitan Dams Electrical Systems Upgrade; Final Business Case* (Version 1.10), 17 March 2017 (D20176/13488).
 - WaterNSW, *Metropolitan Dams Electrical Systems Upgrade; Project Handover Plan* (Revision C), 29 June 2018 (D2018/70972).
 - Document: *Project Status report - Assets - August 2019* (D2019/89068).
 - Document: *Project -Portfolio Status report - dashboards Aug 2019* (D2019/89067).
 - Document: *Mgt Comm Assets - Capital Expenditure Apr 19* (D2019/44800).
 - WaterNSW, *Asset Service Potential Assessment Guidelines*, May 2016 (DOC15/20172).
 - MS Excel workbook: *Greater Sydney Storage System Nomograph 181218* (D2018 139745).
 - Document: *KPI Report - System Operation and Water Delivery*, 2-3 July 2019 (D2019/58679).
 - Document: *WaterNSW Executive Monthly Meeting - 2 and 3 Jul 19 - Water Worry Report* (D2019/58678).
-

Summary of reasons for grade

WaterNSW demonstrated that, during the audit period, it had continued to construct, maintain and operate its Water Management Works in accordance with its Asset Management System. This was achieved through the implementation of processes and procedures aligned with the asset management objectives identified in the *Strategic Asset Management Plan*, including (for example) the Project Delivery Framework for capital works and the Design Criteria that guides operation of the Catchment Infrastructure Works.

Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

Overview:

Water Infrastructure Works are defined in the *Water Management Act 2000* as:

“a water supply work, a drainage work or a flood work, and includes any part of such a work”.

It further defines a “water supply work”, which are applicable to WaterNSW, as:

“(a) without limiting paragraphs (b)–(g), a work (such as a water pump or water bore) for the purpose of taking water from a water source, or

(b) a work (such as a tank or dam) for the purpose of capturing or storing water, or

(c) a work (such as a water pipe or irrigation channel) for the purpose of conveying water to the point at which it is to be used, or

(d) any work (such as a bank or levee) that has, or could have, the effect of diverting water flowing to or from a water source, or

(e) any work (such as a weir) that has, or could have, the effect of impounding water in a water source, including a reticulated system of such works, and includes all associated pipes, sluices, valves, metering equipment and other equipment, but does not include:

(f) any work (other than a water supply work under the control or management of the Sydney Water Corporation, the Hunter Water Corporation or a local water utility) that receives water from a water supply work under the control or management of the Sydney Water Corporation, the Hunter Water Corporation or a local water utility, or

(g) any work declared by the regulations not to be a water supply work.”

The Asset Management System details WaterNSW's approach to the whole-of life management of its assets. This includes arrangements in respect of construction, maintenance and operation. These arrangements are detailed, at a strategic level, in the *Strategic Asset Management Plan* (SAMP)³⁵³ and at a detailed level in a portfolio of Asset Class Strategies (refer Table 3.23 and Table 4.9 for further discussion).

WaterNSW has identified a set of asset management objectives, which are reflected in the SAMP. These include objectives aligned to and underpin asset construction (Objective 4), maintenance (Objective 6) and operation (Objectives 7 & 8).

Management of the Water Infrastructure Works in order to meet these objectives is discussed in the following.

Construction:

WaterNSW identifies Objective 4: *Provide raw water supply infrastructure solution options to address identified risks and opportunities for current and future demands* as applicable in respect of the construction of Water Management Works.

This objective is supported by:

- *20 Year Infrastructure Options Study*³⁵⁴ for infrastructure in the rural Valleys; and
- *Metropolitan Water Plan*³⁵⁵ for infrastructure in the Greater Sydney area.

These documents provide an assessment of potential infrastructure options to meet level of service objectives in the respective areas.

WaterNSW advised that the *20 Year Infrastructure Options Study*, which forms part of its long-term infrastructure planning, was undertaken by WaterNSW's Asset Strategy team using a 'bottom-up' approach to identify the level of service requirements of rural Customers. Gaps in capacity to deliver those levels of services have been identified and infrastructure options to address those gaps have now been developed; these options are to be taken back to the Customers in November. Particular issues for Customers include (for example):

- Security of supply – they require security before making investments; how much water will they get against their licence; should they plant or not?
- Reliability of assets;
- Environmental issues including fishways and the impact of algae; and
- Long-term business viability.

Capital projects are delivered in accordance with the Project Delivery Framework. The *Project Delivery Framework User Guide*³⁵⁶ details the process to be implemented in delivering WaterNSW projects. It describes the processes and governance to be used during the Business Initiative (P0), Initiation (P1), Planning (P2), Execution (P3) and Completion (P4) phase of a project for the three different project types (Lite, Medium and High).

WaterNSW provided a number of documents to demonstrate implementation of the framework, the governance of which is driven through approval of staged business cases, including:

- Blue Mountains Asset Renewal Project – this project is aimed at addressing "... *critical operability, reliability and safety issues of dam and pumping station assets affecting water delivery to end users supplied from Cascade Water Filtration Plant, whilst consolidating the asset base in line with current*

³⁵³ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019.

³⁵⁴ WaterNSW, *20 Year Infrastructure Options Study Rural Valleys*, June 2018, available at: https://www.waternsw.com.au/_data/assets/pdf_file/0019/132616/20-Year-Infrastructure-Options-Study-June-2018.pdf.

³⁵⁵ NSW Government, *Metropolitan Water Plan 2017*, available at: <https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/About-us/Metropolitan-Water/2017-Metropolitan-Water-Plan.pdf?la=en>.

³⁵⁶ WaterNSW, *Project Delivery Framework (PDF) User Guide* (Version 2.4), 16 November 2016 (CD2016/151).

*maintenance, asset management and heritage requirements*³⁵⁷. Documents provided include:

- Project Initiation Brief³⁵⁷ – documents the project objectives, relevant background information, project benefit, project deliverables (including indicative scope, options considered, constraints and indicative budgets), key stakeholders, and endorsement and approvals.
- Preliminary Business Case³⁵⁸ – documents the recommendation being made, approval context (stage of project development), proposal summary, details of separable scope components, needs analysis, options analysis, procurement plan, and endorsement and approvals. Record of approval by the Investment Review Management Committee was included and executive management approval was being sought.
- Final Business Case³⁵⁹ – documents the recommendation being made, approval context (stage of project development), proposal summary, background, finalised options, project budget, customer impact analysis, delivery model, procurement, project governance, project schedule, risk assessment and endorsement and approvals. The business case had been approved at executive management level.
- Metropolitan Dams Electrical Safety – this project is aimed at addressing “... *renewal of electrical infrastructure is required at the metropolitan dams (Avon, Cataract, Cordeaux, Nepean (and tunnel) and Woronora)*”. Documents provided include:
 - Preliminary Business Case³⁶⁰ – presents similar detail as outlined for the abovementioned preliminary business case, however, in this case Board approval was being sought consistent with the governance requirements under the Project Delivery Framework.
 - Final Business Case³⁶¹ – presents similar detail as outlined for the abovementioned final business case, however, in this case a covering document provides for sub-delegation of delegated Board authority by the Chief Executive Officer.
 - Project Handover Plan³⁶² – details the requirements for handover of the completed project; this involves gaining formal acceptance from the client that all deliverables have been delivered, all client acceptance criteria are met, all training is complete, new equipment and systems are fully tested and operate to specification, and all appropriate documentation is provided.

Delivery of capital projects is measured and reported monthly in reports including (for example):

- Project Status Reports³⁶³ – a portfolio of reports for Assets Business Unit projects as at August 2019. Report for each project includes reporting against project summary; current project milestones; project cost summary; project issues summary; project risks summary.
- Portfolio Status Report³⁶⁴ – a summary, dashboard type report as at 23 August 2019 which details project name, status (in progress/complete/etc.), percentage complete and finish date for each project listed, together with status of project health with assessment in relation to schedule, cost, issues, safety and risk. Cost status also provided.
- WaterNSW Capital Expenditure Performance Report³⁶⁵ – a summary report for presentation to the Management Committee Assets, which reports to the Board’s asset subcommittee, in

³⁵⁷ Document: *Project Initiation Brief; Blue Mountains Asset Upgrade*, 2 March 2018 (D2018/2476).

³⁵⁸ WaterNSW, *MCP Blue Mountains Asset Upgrades; Preliminary Business Case* (Version 1.3), 24 September 2018 (D2018/76240).

³⁵⁹ WaterNSW, *Maintain Capability Program; Blue Mountains Asset Upgrades; Final Business Case* (Version 1.1), 1 April 2019 (D2019/32984).

³⁶⁰ WaterNSW, *Metropolitan Dams Electrical Safety; Preliminary Business Case* (Version 3.0), 18 July 2016 (D2016/34671).

³⁶¹ WaterNSW, *Metropolitan Dams Electrical Systems Upgrade; Final Business Case* (Version 1.10), 17 March 2017 (D2017/13488).

³⁶² WaterNSW, *Metropolitan Dams Electrical Systems Upgrade; Project Handover Plan* (Revision C), 29 June 2018 (D2018/70972).

³⁶³ Document: *Project Status report - Assets - August 2019* (D2019/89068).

³⁶⁴ Document: *Project -Portfolio Status report - dashboards Aug 2019* (D2019/89067).

³⁶⁵ Document: *Mgt Comm Assets - Capital Expenditure Apr 19* (D2019/44800).

respect of financial and regulatory period performance in delivering the capital investment program as at April 2019.

These examples demonstrate that WaterNSW constructs its Water Management Works in a manner consistent with the Project Delivery Framework and the objectives of the Asset Management System.

Maintenance:

WaterNSW identifies Objective 6: *Work management processes are consistently delivered and monitored* as applicable in respect of the maintenance of Water Management Works.

This objective is supported by:

- Asset maintenance plans; and
- *Asset Reliability and Maintenance Manual.*

WaterNSW indicated that maintenance of the Water Management Works is managed using its Enterprise Asset Management System. Asset maintenance plans have been developed and are implemented using the maintenance management component of the Asset Management System. As discussed further in Table 3.24, maintenance activities are scheduled and work orders issued and their implementation managed through this system.

Implementation of routine maintenance is monitored monthly. Review of the March 2019 report (which captures performance to the end of January 2019) reveals that it includes a colour coded summary of performance measures (KPIs) together with charts showing annual performance to date in respect of Safety & Environment, Routine Maintenance completion compared to Annual Plan, Work Order Mix, Monthly Schedule Compliance, amongst other metrics. From an overall perspective, routine maintenance completion was running at 88% compared to a target 80%; work order mix for January was greater than 90% preventative compared to a target 80% and monthly schedule compliance for year to date was 85% (93% in January) compared to 80% target.

This demonstrated that maintenance is being carried out generally in accordance with plan.

In addition to routine (and where necessary) corrective maintenance activities, whole-of-life maintenance of the asset portfolio involves renewal of assets as necessary to maintain capability. WaterNSW implements a Maintain Capability Capex Renewals program to ensure the ongoing performance of its assets. The abovementioned Blue Mountains Asset Renewal Project is an example of asset renewals being implemented under this program.

Condition assessments and assessments of asset service potential inform decisions in respect of asset renewal and/or replacement. The *Asset Service Potential Assessment Guidelines*³⁶⁶ provide guidance for this assessment process.

WaterNSW provided an overview of proposed work to address condition and reliability issues in respect of the Warragamba Pipeline. An intensive condition assessment undertaken over a 9-month period has identified coating defects. Given the scale of the investment required to address the identified issues, it was decided to develop a coordinated approach to be implemented over the entire pipeline corridor. A 10-year master plan of works has been identified and a business plan developed; this is now passing through approval processes. The business plan outlines the scope of work which includes additional condition assessment work, FMECA analysis, failure risk assessment, and identification of a practical procurement approach for this circa \$120 Million program.

Effective implementation of maintenance programs as well as ongoing condition assessment and the development and implementation of asset renewal (maintain capability) programs demonstrate that WaterNSW maintains its Water Management Works in a manner consistent with the objectives of the Asset Management System.

³⁶⁶ WaterNSW, *Asset Service Potential Assessment Guidelines*, May 2016 (DOC15/20172).

Operation:

WaterNSW identifies Objective 7: *Water Service to customer is delivered in accordance with their requirements* and Objective 8: *System is operated and managed in accordance with Design Criteria* as applicable in respect of the operation of Water Management Works.

Objective 7 is supported by:

- Customer Supply Agreements; and
- Work Approvals;

whilst Objective 8 is supported by:

- Design Criteria and System Yield;
- Raw Water Supply Agreements; and
- Water Sharing Plan and associated Work Approvals.

Operation of the Water Management Works requires daily operation of the water delivery systems in accordance with the relevant Customer Supply Agreements, Raw Water Supply Agreements, Work Approvals and Operating Protocols (as appropriate) in consultation and communication with Customers. Operation of the Bulk Water Supply System is undertaken in accordance with the Design Criteria, *Greater Sydney Storage System Nomograph*³⁶⁷ and other operational decision making tools; this is discussed in more detail in Table 3.6. The delivery of CSR Water is managed using river management tools in response to Water Orders, as discussed in Table 3.13.

Operational performance and system status is monitored with monthly reporting, including:

- KPI Report - System Operation and Water Delivery³⁶⁸ – report to Executive Team Monthly Performance and Management Meeting 2-3 July 2019; this report provides details on storage balance performance in the Greater Sydney area, together with a series of CSR Water delivery measures; and
- Water Worry Report³⁶⁹ – which provides a ‘heat map’ summary of risks to rural levels of service in respect of forecast water availability, asset availability (outages), delivery efficiency, water quality and recreational amenity, together with detailed individual valley reports.

These observations, together with the findings presented in Table 3.6, Table 3.13 and elsewhere in this report demonstrate that WaterNSW operates its Water Management Works in a manner consistent with the objectives of the Asset Management System.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.


³⁶⁷ MS Excel workbook: *Greater Sydney Storage System Nomograph 181218* (D2018 139745).

³⁶⁸ Document: *KPI Report - System Operation and Water Delivery*, 2-3 July 2019 (D2019/58679).

³⁶⁹ Document: *WaterNSW Executive Monthly Meeting - 2 and 3 Jul 19 - Water Worry Report* (D2019/58678).

3.3.2 CSR Water (clause 3.3)

Table 3.13 CSR Water (sub-clause 3.3.1)

Sub-clause	Requirement	Compliance Grade
3.3.1	<p>For CSR Water, Water NSW must take all reasonable steps to:</p> <p>a) process all Water Orders promptly and efficiently; and</p> <p>b) manage Water Orders to ensure water is Delivered to its Customers in a timely manner.</p>	 Compliant
Risk	Target for Full Compliance	
Failure to process Water Orders promptly and efficiently, and to ensure the timely delivery of water, presents a high operational risk and a high risk in respect of customer relations.	Evidence that WaterNSW has processes and procedures in place to ensure that Water Orders are processed promptly and efficiently and that water is delivered in a timely manner.	
Obligation		
This obligation requires WaterNSW to process all Water Orders promptly and efficiently and to ensure that water is delivered in a timely manner.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WNSW, <i>Water Ordering Procedure</i> (Version 2), July 2019 (CD2015/312). ▪ “Ordering Water” page on the WaterNSW website: https://www.watarnsw.com.au/customer-service/ordering-trading-and-pricing/ordering#stay. ▪ WNSW, <i>Water Ordering Procedure</i> (Version 2), July 2019 (CD2015/312), page 2. ▪ Document: <i>Water Order Checklist</i>, undated (Reference: DOC10/11867). ▪ “Water Accounting System (iWAS)” page on the WaterNSW website: https://www.watarnsw.com.au/customer-service/ordering-trading-and-pricing/ordering/iwas. ▪ MS Excel workbook: <i>June 2019 Water Order Stats</i> (D2019/86748). ▪ MS Excel workbook: <i>Audit 3_1_1 -Processing orders 300619</i> (D2019 120798). ▪ WaterNSW, <i>Compliance and Performance Report; Performance Standards 2018-2019</i>, undated. 		
Summary of reasons for grade		
<p>WaterNSW has a <i>Water Ordering Procedure</i> which details the steps required to ensure that all Water Orders are processed promptly and efficiently. Furthermore, it provided evidence to demonstrate that the procedure was effectively implemented, thereby demonstrating that it had taken all reasonable steps to process all Water Orders promptly and efficiently during the audit period.</p> <p>WaterNSW described the processes that it implements to ensure the timeliness of water delivery. Its effectiveness in doing this is assessed on the basis of customer complaints. WaterNSW reported no water delivery complaints in 2018/19, which indicates that all Water Orders had been Delivered within one day of the scheduled day of Delivery, thereby exceeding its performance</p>		

target. On this basis, WaterNSW is considered to have demonstrated that, during the audit period, it had effectively managed Water Orders to ensure that water is Delivered to its Customers in a timely manner.

Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

Water Order Processing:

WaterNSW has a *Water Ordering Procedure*³⁷⁰ which documents/provides guidance for the water ordering process.

The *Water Ordering Procedure* identifies the range of options available for customers to place water orders; these include:

- Direct orders, whereby customers place orders on-line (using the iWAS system); and
- Requested orders, whereby customers place order requests via email, fax and phone; requested orders are captured via the Customer Helpdesk Ticketing System before being entered into the Water Accounting System (WAS) by a Customer Service Officer (CSO).

The *Water Ordering Procedure* establishes protocols for the timely opening of orders received, recording the orders into the Ticketing System (which assigns the order a unique reference number and so allows the processing of the order to be tracked) and entering the orders into the WAS. A Water Order is considered to be processed when it is entered into the WAS. Only complying orders are entered; protocols for dealing with non-complying orders are included in the procedure.

To be complying, water orders must include details of the access licence holders name, access licence number, works approval licence number, extraction site, pumping dates (the order must not start within the lead days), current meter reading (to ensure that the account has enough water to cover the water order) and name, signature and contact details. Requirements for complying water orders are clearly set out on the WaterNSW website.³⁷¹

The *Water Ordering Procedure*³⁷² includes clear guidelines to assist CSOs to check the Ticketing System regularly, to process any unassigned water order requests as they are received, and to check these orders for compliance before completing the processing of the water order by entering the order details into WAS. For orders placed via the Ticketing System, CSOs use a simple *Water Order Checklist*³⁷³ to check compliance.

The iWAS system for on-line ordering includes in-built checks to ensure that the details required for a water order to be compliant are correctly provided. Orders placed through the iWAS system are processed rapidly. Details about iWAS and how customers can access the iWAS are available on the WaterNSW website.³⁷⁴

WaterNSW advised that audits are undertaken by the Customer Experience Service Improvement Specialist each reporting period. These audits check compliance as follows:

- 100% of orders have been entered by CSOs; and
 - a sample of orders is reviewed each month for accurate and compliant processing by the CSOs.
-

³⁷⁰ WNSW, *Water Ordering Procedure* (Version 2), July 2019 (CD2015/312).

³⁷¹ "Ordering Water" page on the WaterNSW website: <https://www.waternsw.com.au/customer-service/ordering-trading-and-pricing/ordering#stay>.

³⁷² WNSW, *Water Ordering Procedure* (Version 2), July 2019 (CD2015/312), page 2.

³⁷³ Document: *Water Order Checklist*, undated (Reference: DOC10/11867).

³⁷⁴ "Water Accounting System (iWAS)" page on the WaterNSW website: <https://www.waternsw.com.au/customer-service/ordering-trading-and-pricing/ordering/iwas>.

WaterNSW provided summary water order statistics for the 2018/19 water year,³⁷⁵ and a report against WaterNSW's performance standards.³⁷⁶ These revealed that:

- 124,378 orders had been placed (which consists of all days on which a volume of water is to be delivered);
- the number of non-complying orders was 432 in total; and
- the number of non-complying water orders contacted within one working day to rectify the issue was 431 in total (99.8% of non-complying orders).

To demonstrate that it has effectively implemented its procedures for ensuring that Water Orders are processed promptly and efficiently during the audit period, WaterNSW provided details of its performance in processing Water Orders in 2018/19.³⁷⁷ These details are presented in the following Table 3.13A and Table 3.13B.

Table 3.13A Water Order Processing Times – Complying Water Orders (2018/19)

Processing Time	Number of Orders	Percentage of Total	Cumulative Percentage
< 1 Hr	2,210	71%	71%
1-2 Hrs	313	10%	81%
2-3 Hrs	139	4%	86%
3-4 Hrs	96	3%	89%
4-8 Hrs	147	5%	94%
> 8 Hrs	201	6%	100%
Total	3,106	100%	-

Table 3.13B Water Order Processing Times – Non-complying but approved Water Orders (2018/19)

Processing Time	Number of Orders	Percentage of Total	Cumulative Percentage
< 1 Hr	1,026	53%	53%
1-2 Hrs	303	16%	69%
2-3 Hrs	145	8%	77%
3-4 Hrs	120	6%	83%
4-8 Hrs	179	9%	92%
> 8 Hrs	153	8%	100%
Total	1,926	100%	-

Review of this performance data reveals that 89% of complying water orders were processed within 4 hours and 94% within 8 hours, i.e. within one working day, of receipt. Furthermore, 83% of non-complying but approved Water Orders (e.g. Water Orders placed within the required lead time) were processed within 4 hours and 92% with 8 hours. This demonstrates that WaterNSW took all reasonable steps to process all water orders promptly and efficiently during the audit period.

³⁷⁵ MS Excel workbook: *June 2019 Water Order Stats* (D2019/86748).

³⁷⁶ WaterNSW, *Compliance and Performance Report; Performance Standards 2018-2019*, undated, page 5/6.

³⁷⁷ MS Excel workbook: *Audit 3_1_1 -Processing orders 300619* (D2019 120798).

Water Delivery:

Once a Water Order is processed (i.e. entered the order into the WAS), WaterNSW must then implement processes and procedures to ensure the timely delivery of the water ordered by customers.

WaterNSW (and predecessor organisation, State Water) has historically used the Computer Aided Improved River Operations (CAIRO) system, which has been reviewed by the auditor during a number of previous Operational Audits. CAIRO is essentially a water accounting spreadsheet which tracks flows (blocks of water) in defined river reaches between flow gauging stations with fixed estimation of travel times and empirical estimates of losses and gains based on experience. After the orders to be delivered from a particular storage are aggregated, CAIRO has the capacity to calculate the quantity of water that needs to be released from the storage to ensure that the orders are satisfied, taking account of water losses along the course of the river due to seepage and evaporation and gains from tributary inflows, and the time at which the water needs to be released to ensure timely delivery at the extraction point.

WaterNSW advised that it is now transitioning to a new computer-based model, CARM-Lite (Computer Aided River Management System), which has the same functionality as CAIRO.

WaterNSW actively monitors operation of the systems and undertakes daily analyses, which consider (for example):

- any changes in weather and the potential impact on downstream tributaries;
- surpluses in any reach – this may lead to the take-up of orders that have been placed within the required lead time (and are non-complying on that basis);
- shortfalls in water – WaterNSW will liaise with customers, particularly those with storages, with a view to rescheduling delivery;
- assessing the need to issue notices via the Early Warning Network (EWN).

This approach involves effective management of Water Orders, and may involve:

- approval of Water Orders that are non-complying, having been placed within the required lead time; or
- rescheduling delivery in consultation with the affected Customer.

Reporting indicates (for example) that the number of complying water orders that were rescheduled by WaterNSW in 2018/19 was 142. From a timing perspective, all were rescheduled in consultation with the Customer within a day of an expected water shortage or delivery delay.³⁷⁸

WaterNSW monitors the timeliness of water delivery on the basis of customer complaints. It reported no water delivery complaints in 2018/19, thereby indicating that it had exceeded its target of 99% of Water Orders being Delivered within one day of the scheduled day of Delivery. On this basis, WaterNSW is considered to have demonstrated that, during the audit period, it had effectively managed Water Orders to ensure that water is Delivered to its Customers in a timely manner.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.


³⁷⁸ WaterNSW, *Compliance and Performance Report; Performance Standards 2018-2019*, undated, page 6/7.

Supplemental information

No supplemental information is provided in respect of this obligation.

3.3.3 Bulk Water released to Local Water Utilities for Drinking Water purposes (clause 3.4)

Table 3.14 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.1)

Sub-clause	Requirement	Compliance Grade
3.4.1	<p>Water NSW must maintain a register of all Local Water Utilities:</p> <p>a) for which Water NSW maintains a Water Allocation Account; and</p> <p>b) to which Water NSW releases water that will be used for the purposes of Drinking Water (Local Water Utility Customers),</p> <p>(LWU Register).</p>	 Compliant
Risk	Target for Full Compliance	
Absence of information to enable WaterNSW to contact a Local Water Utility (LWU) in a timely manner in the instance of a water quality emergency poses a high risk to the water quality management activities of LWUs.	Evidence that the register has been established and is maintained and that it includes all relevant Local Water Utilities.	
Obligation		
<p>This obligation requires WaterNSW to maintain a register of all Local Water Utilities for which it maintains a Water Allocation Account and to which it releases water that will be used for Drinking Water. It is noted that this obligation relates to Local Water Utilities supplied with CSR Water (catch, store and release); it does not relate to councils/water utilities supplied water via the Bulk Water Supply System (these customers do not have a Water Allocation Account).</p>		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ MS Excel workbook: <i>Local Water Utilities contact details</i> (DOC13/29697). 		
Summary of reasons for grade		
<p>WaterNSW demonstrated that it maintains a Local Water Utility Register, which includes all Local Water Utilities that have been identified by extraction of details from the Water Accounting System. Records of an annual review conducted in May 2019 indicate that the register was maintained during the audit period.</p> <p>On this basis, WaterNSW is assessed to have demonstrated compliance with this obligation.</p>		
Discussion and notes		
<p>WaterNSW demonstrated that it has a Local Water Utility (LWU) Register, and explained that the register complied via an extract from the Water Accounting System. The selection criteria used include:</p> <ul style="list-style-type: none"> ▪ Water Source - All regulated river sources; ▪ Access Licence – All; ▪ Licence Category – Local Water Utility; Major Utility (Urban Water), Local Water Utility (Domestic and Commercial); and 		

- Flow Class – All.

These selection criteria suggest that all LWU's should be identified through the extraction process.

WaterNSW further advised that the register is reviewed annually in Q2. The review process involves contacting each LWU to confirm contact details, with any changes being recorded.

Review of the register reveals that it was last updated in May 2019. A record is maintained of the date on which the LWU was contacted, that details were confirmed ("Y") and notes in respect of attempted contacts and changes made.

Recommendations

There are no recommendations in respect of this obligation.


Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.15 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.2)

Sub-clause	Requirement	Compliance Grade
3.4.2	The LWU Register must include contact details for each Local Water Utility Customer, and the Water Source and approximate location from which the Local Water Utility Customer Extracts water.	 Compliant
<p>Risk</p> <p>Absence of information in respect of each Local Water Utility Customer (LWU) presents a high risk that WaterNSW will be unable to contact relevant LWU's in a timely manner when required (for example, in the instance of a water quality issue that may pose a high risk to the water quality management activities of the LWUs).</p>		<p>Target for Full Compliance</p> <p>Evidence that the LWU Register contains the requisite information.</p>
<p>Obligation</p> <p>This obligation identifies specific information that must be included in the Local Water Utility Register. WaterNSW is required to ensure that such information is captured.</p>		
<p>Evidence sighted</p> <ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ MS Excel workbook: <i>Local Water Utilities contact details</i> (DOC13/29697). 		
<p>Summary of reasons for grade</p> <p>Review of the Local Water Utility Register confirms that it contains the requisite information, specifically contact details for each Local Water Utility together with identification of the Water Source and the approximate location from which the Local Water Utility extracts water.</p> <p>Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.</p>		
<p>Discussion and notes</p> <p>Review of the Local Water Utility (LWU) Register reveals that it contains the requisite information in respect of each LWU. More specifically, it contains the following:</p> <ul style="list-style-type: none"> ▪ Work Approval number; ▪ Work Approval holder (LWU) name; ▪ Work Approval holder (LWU) address, contact and contact details (phone, mobile and email); ▪ Water Source and River Section; ▪ Register update notes as discussed in Table 3.14. <p>It is noted that in many cases an LWU has multiple entries. This is reflective of the fact that the LWU's are listed on the basis of Work Approval and an LWU may extract water under multiple Work Approvals.</p>		

Recommendations

There are no recommendations in respect of this obligation.


Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.16 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.3)

Sub-clause	Requirement	Compliance Grade
3.4.3	Water NSW must maintain and implement a procedure for providing information to Local Water Utilities (LWU Information Request Procedure). Water NSW must follow the LWU Information Request Procedure when any Local Water Utility requests information to inform that utility’s Drinking Water quality assurance program. Water NSW must maintain the LWU Information Request Procedure during the term of this Licence.	 Compliant
Risk	Failure to have in place a LWU Information Request Procedure, or failure to follow that procedure in response to a request from a LWU for information, presents a high risk that the utility’s Drinking Water quality assurance program may not be appropriately informed with consequent risks to water quality and public health.	Target for Full Compliance
		Evidence that a LWU Information Request Procedure has been established and is maintained and implemented.
Obligation	This obligation requires WaterNSW to maintain and implement a LWU Information Request Procedure, i.e. a procedure for supplying information to any Local Water Utility that requests information to inform its Drinking Water quality assurance program.	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Procedure; Local Water Utility information request</i>, available on the WaterNSW website at: https://www.waternsw.com.au/_data/assets/pdf_file/0005/126716/LWU-information-request-procedure.pdf. 	
Summary of reasons for grade	<p>WaterNSW demonstrated that it maintains a <i>LWU Information Request Procedure</i>. Information included on the procedure indicates that it relates to the provision of information in respect of water that will be used for the purposes of drinking water.</p> <p>WaterNSW indicated that it had not received any requests from LWUs for such information during the audit period. Accordingly, there is no evidence that the procedure was not implemented.</p> <p>On this basis, WaterNSW is considered to have demonstrated compliance with this obligation.</p>	

Discussion and notes

WaterNSW advised that it maintains a *LWU Information Request Procedure*,³⁷⁹ which is available on its website.

As noted by WaterNSW, the procedure includes the following statement:

“WaterNSW is able to provide information to Local Water Utility customers where it delivers water that will be used for the purposes of drinking water, upon request. The information provided under this procedure is covered under the Sharing of Information or Ownership and Exchange of Information clause(s) in their agreements.”

The issue date recorded on the procedure indicates that it was last updated in July 2019.

In its response to the Audit Questionnaire and during the audit interviews, WaterNSW advised that it had received no requests from LWUs for information to inform their Drinking Water quality assurance program during the audit period. Accordingly, there is no evidence that the procedure was not implemented.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement


No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

³⁷⁹ WaterNSW, *Procedure; Local Water Utility information request*, available on the WaterNSW website at: https://www.waternsw.com.au/_data/assets/pdf_file/0005/126716/LWU-information-request-procedure.pdf.

Table 3.17 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.4)

Sub-clause	Requirement	Compliance Grade
3.4.4	Water NSW's LWU Information Request Procedure must: <ol style="list-style-type: none"> a) describe how a Local Water Utility is to request information; b) describe how Water NSW will respond to the request in a timely manner; and c) define any fees and charges that may be charged by Water NSW to recover reasonable costs incurred for responding to an information request, how these will be calculated, and how they are to be paid. 	 Compliant
Risk		Target for Full Compliance
Failure to have in place a LWU Information Request Procedure that addresses the requisite matters presents a high risk that the information required by a LWU to inform its Drinking Water quality assurance program may not be appropriately provided, with consequent risks to water quality and public health.		Evidence that the LWU Information Request Procedure addresses the requisite matters.
Obligation		
This obligation identifies specific matters that the LWU Information Request Procedure must address. WaterNSW is required to ensure that procedure addresses those matters.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Procedure; Local Water Utility information request</i>, available on the WaterNSW website at: https://www.waternsw.com.au/_data/assets/pdf_file/0005/126716/LWU-information-request-procedure.pdf. 		
Summary of reasons for grade		
Review of the LWU Information Request Procedure confirms that it addresses the requisite matters, including how to request information, how WaterNSW will respond and the fees and charges that may be charged. Accordingly, it is assessed that WaterNSW has demonstrated compliance with this obligation.		
Discussion and notes		
Review of the LWU Information Request Procedure reveals that it addresses the requisite matters. More specifically, it:		
<ul style="list-style-type: none"> ▪ describes how a LWU is to request information – it indicates including how to submit the request and information to be provided; ▪ describes how WaterNSW will respond to the request in a timely manner – it indicates that WaterNSW will acknowledge a request within 24 hours of being received and that it will endeavour (subject to the complexity of the data request) to respond within six working 		

days.

- defines any fees and charges that may be charged – it indicates that there will be no charge for information covered the Sharing of Information and Exchange of Information clause(s) in their agreements.

In respect of how it manages its response, WaterNSW advised that requests are noted in the Customer Service centre ManageEngine ticketing software and forwarded to the nominated area for action. An automated follow-up is in place within ManageEngine, thereby ensuring that a response is provided.

Notwithstanding that the procedures are in place, as reported in Table 3.16, WaterNSW has not yet received a request of the type to which the LWU Information Request Procedure applies.

Recommendations

There are no recommendations in respect of this obligation.


Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.18 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.5)

Sub-clause	Requirement	Compliance Grade
3.4.5	Water NSW must make details of the LWU Information Request Procedure available free of charge on its website for downloading by any person.	 Compliant
Risk Failure to make the LWU Information Request Procedure available on the WaterNSW website presents a moderate risk that a LWU (or any person) may not be aware of the procedure for requesting information.		Target for Full Compliance Evidence that the LWU Information Request Procedure is available on the WaterNSW website for downloading by any person free of charge.
Obligation This obligation requires WaterNSW to make details of the LWU Information Request Procedure available on its website downloading, free of charge, by any person.		
Evidence sighted <ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Procedure; Local Water Utility information request</i>, available on the WaterNSW website at: https://www.waternsw.com.au/data/assets/pdf_file/0005/126716/LWU-information-request-procedure.pdf. 		
Summary of reasons for grade WaterNSW demonstrated that the LWU Information Request Procedure is available on its website for downloading. Furthermore, the auditor was able to locate the procedure from the website “Home” page and download it free of charge. Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.		
Discussion and notes WaterNSW provided the following direct link to the LWU Information Request Procedure on its website: https://www.waternsw.com.au/data/assets/pdf_file/0005/126716/LWU-information-request-procedure.pdf As the procedure is required to be available to any person, the auditor sought to locate it by navigation from the website “Home” page. This revealed that it could be located by: <ul style="list-style-type: none"> ▪ searching for “information request” from the site masthead; or ▪ drilling down from the site masthead: Customer Services > Local Water Utilities (under Service and Help) > Local Water Utility Information Request Procedure (link to pdf file). The “Local Water Utilities” page also advises that WaterNSW: “... is able to provide information to local water utility customers where it delivers water that will be used for the purposes of drinking water, upon request”.		

Recommendations

There are no recommendations in respect of this obligation.


Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.19 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.6)

Sub-clause	Requirement	Compliance Grade
3.4.6	By 31 December 2018, Water NSW must, in consultation with NSW Health, the Local Water Utility Customers on the LWU Register and its customer advisory groups established under clause 6.5, complete a review of its water quality monitoring, of water released by Water NSW to Local Water Utilities.	 Compliant
Risk	Failure to review WaterNSW's water quality monitoring of water released to LWUs presents a high risk that the water quality monitoring may not be effective and that relevant stakeholders may not be appropriately informed, with consequent risks to water quality and public health.	Target for Full Compliance Evidence that WaterNSW has: <ul style="list-style-type: none"> ▪ completed review of its water quality monitoring of water released to LWUs; ▪ consulted with NSW Health, LWU Customers and its customer advisory groups in doing so; and ▪ completed that review by 31 December 2018.
Obligation	WaterNSW is obligated to consult with NSW Health, LWU Customers and its customer advisory groups to review its water quality monitoring program for water released to LWUs by 31 December 2018.	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Summary of Status as at 31 December 2018</i> (D2019/55134). ▪ WaterNSW, <i>Letter Review of water quality monitoring of water released by WaterNSW to Local Water Utilities</i> 26 Jun19. ▪ WaterNSW, <i>Summary of Discussions with Water Directorate</i> (D2018/79741). ▪ WaterNSW, <i>Email-Review of water quality monitoring for Local Water Utilities</i> 9 May-18. ▪ WaterNSW, <i>Summary of Initiatives to follow up LWUs in response to Survey</i> (D2018/142007). ▪ WaterNSW, <i>Follow up discussions with Lachlan Shire Council</i> (D2018/14201). ▪ WaterNSW, <i>Evidence of Survey to LWUs</i> (D2018/79771). ▪ WaterNSW, <i>Initial discussions with NSW Health– Consultation Plan</i> (D2018/79933). ▪ WaterNSW, <i>Summary of Survey respondents – Email to NSW Health</i> (D2018/142024). ▪ WaterNSW, <i>Provision of Draft Report to NSW Health</i> (D2019/58510). ▪ WaterNSW, <i>CAG eCAG - Presentation</i> (D2018 130702) 28 29 November 2018. ▪ WaterNSW, <i>Initial Presentation for CAG meetings</i> (D2018/79747). ▪ WaterNSW, <i>Macquarie-Cudgegong CAG Minutes</i> (D2018 101423) 12 Sep18. ▪ WaterNSW, <i>Macquarie-Cudgegong CAG Presentation</i> (D2018 101421) 12 Sep18. 	

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- WaterNSW, *Macquarie-Cudgegong CAG eCAG Meeting Notes* (D2018 130702) 29 Nov 18.
 - WaterNSW, *CAG eCAG - Presentation* (D2018 129850) 28 29 November 2018.
 - WaterNSW, *Macquarie-Cudgegong CAG – Presentation* (D2019/73481) 3 July 2019.
 - WaterNSW, *Macquarie-Cudgegong CAG – Minutes* (D2019/73482) 3 July 2019.
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Summary of reasons for grade

WaterNSW provided evidence of consultation with NSW Health, LWU Customers and its Customer Advisory Groups and evidence of the water monitoring review. The dates for consultation indicate that the consultation was undertaken by the due date.

Discussion and notes

WaterNSW described the review process in its response to the Audit Questionnaire and provided a document titled *Summary of Status as at 31 December 2018*.³⁸⁰ The review was undertaken as per the requirements of clause 3.4.6 and was reported to IPART in a letter dated in June 2019.³⁸¹

Key steps reported by WaterNSW included:

- numerous points of consultation with NSW Health including clarification of the intent of the requirement, input into the consultation process, ongoing discussions and briefings, and input in the final draft report;
- development of a consultation program including numerous CAG briefings, a survey to LWUs on the contact register, follow up discussions, and presentations at LWU Alliances and related groups;
- development of a GIS based tool to enable identification of LWU offtakes and relate to all upstream monitoring locations;
- identification of opportunities to enhance existing real-time monitoring using the existing hydrometric network;
- identification of current and potential opportunities to enhance data and information sharing and availability; and
- development of requirements for implementation of potential opportunities, including timing, funding and other potential constraints.

WaterNSW provided the following record as evidence of consultation with the Water Directorate:

- *Summary of Discussions with Water Directorate*.³⁸²

WaterNSW provided the following records as evidence of consultation with the LWU's:

- *Email-Review of water quality monitoring for Local Water Utilities*.³⁸³
- *Summary of Initiatives to follow up LWUs in response to Survey*.³⁸⁴
- *Follow up discussions with Lachlan Shire Council*.³⁸⁵ and
- *Evidence of Survey to LWUs*.³⁸⁶

WaterNSW provided the following records as evidence of consultation with NSW Health:

³⁸⁰ WaterNSW, *Summary of Status as at 31 December 2018* (D2019/55134).

³⁸¹ WaterNSW, *Letter Review of water quality monitoring of water released by WaterNSW to Local Water Utilities* 26 Jun 19.

³⁸² WaterNSW, *Summary of Discussions with Water Directorate* (D2018/79741).

³⁸³ WaterNSW, *Email-Review of water quality monitoring for Local Water Utilities 9 May-18*.

³⁸⁴ WaterNSW, *Summary of Initiatives to follow up LWUs in response to Survey* (D2018/142007).

³⁸⁵ WaterNSW, *Follow up discussions with Lachlan Shire Council* (D2018/14201).

³⁸⁶ WaterNSW, *Evidence of Survey to LWUs* (D2018/79771).

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- *Initial discussions with NSW Health– Consultation Plan;*³⁸⁷
 - *Summary of Survey respondents – Email to NSW Health;*³⁸⁸ and
 - *Provision of Draft Report to NSW Health.*³⁸⁹

Customer Advisory groups were updated at the February/March meetings, and the July/August 2019 meetings on progress of the report. Records include:

- *CAG eCAG – Presentation;*³⁹⁰
- *Initial Presentation for CAG meetings;*³⁹¹
- *Macquarie-Cudgegong CAG Minutes;*³⁹²
- *Macquarie-Cudgegong CAG Presentation;*³⁹³
- *Macquarie-Cudgegong CAG eCAG Meeting Notes;*³⁹⁴
- *CAG eCAG – Presentation;*³⁹⁵
- *Macquarie-Cudgegong CAG – Presentation;*³⁹⁶
- *Macquarie-Cudgegong CAG – Minutes.*³⁹⁷

The dates on the communication records indicate that the consultation was undertaken by the due date. The report³⁹⁸ included the feedback gathered from the consultation with LWUs.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

³⁸⁷ WaterNSW, *Initial discussions with NSW Health– Consultation Plan* (D2018/79933).

³⁸⁸ WaterNSW, *Summary of Survey respondents – Email to NSW Health* (D2018/142024).

³⁸⁹ WaterNSW, *Provision of Draft Report to NSW Health* (D2019/58510).

³⁹⁰ WaterNSW, *CAG eCAG - Presentation* (D2018 130702) 28 29 November 2018.

³⁹¹ WaterNSW, *Initial Presentation for CAG meetings* (D2018/79747).

³⁹² WaterNSW, *Macquarie-Cudgegong CAG Minutes* (D2018 101423) 12 Sep18.

³⁹³ WaterNSW, *Macquarie-Cudgegong CAG Presentation* (D2018 101421) 12 Sep18.

³⁹⁴ WaterNSW, *Macquarie-Cudgegong CAG eCAG Meeting Notes* (D2018 130702) 29 Nov 18.


³⁹⁵ WaterNSW, *CAG eCAG - Presentation* (D2018 129850) 28 29 November 2018.

³⁹⁶ WaterNSW, *Macquarie-Cudgegong CAG – Presentation* (D2019/73481) 3 July 2019.

³⁹⁷ WaterNSW, *Macquarie-Cudgegong CAG – Minutes* (D2019/73482) 3 July 2019.

³⁹⁸ WaterNSW, *Letter Review of water quality monitoring of water released by WaterNSW to Local Water Utilities* 26 Jun19.

Table 3.20 Bulk Water released to Local Water Utilities for Drinking Water purposes (sub-clause 3.4.7)

Sub-clause	Requirement	Compliance Grade
3.4.7	By 30 June 2019, Water NSW must provide IPART with a report detailing the outcomes of the review referred to in clause 3.4.6. The report should describe measures that were identified and the timing by which they could be implemented. Any barriers to immediate implementation of identified measures, including limitations to funding, should be outlined in the report.	 Compliant
Risk	Failure to provide a report detailing the outcomes of the review to IPART presents a moderate risk that the review may not have been undertaken and/or may not have been effective in addressing the relevant matters.	Target for Full Compliance
		Evidence that a report addressing the requisite matters has been provided to IPART and that such report was provided by 30 June 2019.
Obligation		
WaterNSW is obligated to provide the report prepared in relation to clause 3.4.6 to IPART by 30 June 2019. The report must identify the improvements or measures that were identified in the review and include information on timing and any constraints including limitations to funding.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Email - Clause 3.4.6 and 3.4.7 - Report - Review of Water Quality Monitoring of water released to Local Water utilities</i> 28 June 2019. ▪ WaterNSW, <i>Letter - Review of water quality monitoring of water released by WaterNSW to Local Water Utilities</i> 26 Jun 2019. 		
Summary of reasons for grade		
The report addressing the requirements of clause 3.4.6 was provided to IPART by the due date. The review report identified improvements or measures that resulted from the review, and included information on timing and any constraints including funding implications.		
WaterNSW is assessed as compliant with this obligation.		
Discussion and notes		
WaterNSW provided an email ³⁹⁹ dated 28 June 2019 from WaterNSW to IPART containing the letter and report of the June 2019 ⁴⁰⁰ review that was undertaken as per the requirements of clause 3.4.6.		
The report includes a summary of potential improvements including opportunities for existing data and information availability, enhancement to data and information availability, and monitoring program enhancements. Within the discussion, WaterNSW has provided commentary on funding and timelines, as well as constraints where relevant. Cost implications		

³⁹⁹ WaterNSW, *Email - Clause 3.4.6 and 3.4.7 - Report - Review of Water Quality Monitoring of water released to Local Water utilities* 28 June 2019

⁴⁰⁰ WaterNSW, *Letter - Review of water quality monitoring of water released by WaterNSW to Local Water Utilities* 26 June 2019.

are summarised in Section 6.3 of the report.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.


Supplemental information

No supplemental information is provided in respect of this obligation.

3.4 Performance standards (Licence Part 4)

3.4.1 Water Supplied Performance Standards (clause 4.2)

Table 3.21 Water Supplied Performance Standards (sub-clause 4.2.2)

Sub-clause	Requirement	Compliance Grade
4.2.2	Water NSW must manage the quality of water Supplied to its Customers in accordance with the relevant Water Quality Management System required under clause 2.1.2 or 2.1.3 (Supply Water Quality Performance Standard).	 Compliant
Risk	Failure by WaterNSW to manage the quality of water supplied to its customers in accordance with the relevant Water Quality Management System presents a high risk that the quality of water supplied to end users may be compromised and a consequent high risk to public health.	Target for Full Compliance
		Evidence that WaterNSW has managed the quality of water supplied to its customers in accordance with the relevant Water Quality Management System, principally through demonstrated compliance with identified quality requirements.
Obligation	WaterNSW is obliged to implement its WQMS to ensure the quality of water is managed and supplied to customers in accordance with the agreed water quality standards.	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ Sydney Water, <i>Executed Raw Water Supply Agreement</i>, 14 October 2013. ▪ State Water and Lithgow City Council, <i>Agreement Concerning the Supply of Water from the Fish River Water Supply</i> 25-Nov-07. ▪ WaterNSW, <i>Fish River Drinking Water Quality Report</i> (D2019 58942), May-19. ▪ WaterNSW, <i>Lake Oberon and Duckmaloi Weir WQ Report</i> (D2019 69314), Jun-19. ▪ WaterNSW, <i>Lake Burrangorang WQ Report</i> (D2019 55608), 22-May-19. 	
Summary of reasons for grade	<p>WaterNSW provided evidence that it is managing the quality of water supplied to its customers by providing examples of its compliance over the audit period, and water quality reports detailing the quality of water supplied and any instances of non-compliance with the requirements. WaterNSW reported that, for the period July 2018 to June 2019:</p> <ul style="list-style-type: none"> ▪ drinking water supplied met the ADWG for health-related characteristics and provided a summary of its compliance, indicating that it was 100% compliant with its targets; ▪ it was 99.95% (target 95%) compliant with the Raw Water Supply Agreement standards; and ▪ raw water supplied for treatment was 91.87% compliant with the customer preferred operational targets compared to a target of 85%. <p>WaterNSW is assessed as compliant with this obligation.</p>	

Discussion and notes

WaterNSW provided the supply agreement⁴⁰¹ which details the water quality characteristics for each of Sydney Water's water treatment plants that receive raw water supplied by WaterNSW. For this supply of raw water, WaterNSW has established Raw Water Supply Agreement standards, with a target of 95% compliance. WaterNSW reported that it was 99.95% compliant with the standards for the period from July 2018 to June 2019.

Non-conformances reported in WaterNSW's response to the Audit Questionnaire were alkalinity in Illawarra raw water in March 2019, Algal ASU in Cascades raw water in April 2019 and alkalinity in Cascades raw water in June 2019.

WaterNSW reported that the raw water supplied for treatment was 91.87% compliant with the customer preferred operational targets for the period from July 2018 to June 2019 with a target of 85% compliance.

WaterNSW indicated that it makes its 'best endeavours' to provide raw water compliant with the agreement but due to the nature of supplying raw water, cannot always control water quality. When water quality does not meet the standards, WaterNSW can implement the NOTSO process to request a change in raw water quality requirements. Sydney Water can assess and provide a response.

WaterNSW provided the customer agreements⁴⁰² for the Fish River Water Supply Scheme, which are also being re-negotiated. The current agreements do not reflect the supply of drinking water from Duckmaloi Water Treatment Plant.

WaterNSW reported in its response to the Audit Questionnaire that drinking water supplied meets the ADWG for health-related characteristics and provided a summary of its compliance, indicating that it was 100% compliant with its targets for the period from July 2018 to June 2019.

WaterNSW provided the *Fish River Drinking Water Quality Report*⁴⁰³ (June 2019), *Lake Oberon and Duckmaloi Weir WQ Report*⁴⁰⁴ (June 2019) and *Lake Burragorang WQ Report*⁴⁰⁵ (May 2019) which detail the quality of water supplied under those schemes. The *Fish River Drinking Water Quality Report* includes detail on outages and incidents, operational and compliance monitoring, trending of operational data, and summary of year to date water quality monitoring.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

⁴⁰¹ Sydney Water, *Executed Raw Water Supply Agreement*, 14 October 2013.


⁴⁰² State Water and Lithgow City Council, *Agreement Concerning the Supply of Water from the Fish River Water Supply* 25 Nov-07.

⁴⁰³ WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19.

⁴⁰⁴ WaterNSW, *Lake Oberon and Duckmaloi Weir WQ Report* (D2019 69314), Jun-19.

⁴⁰⁵ WaterNSW, *Lake Burragorang WQ Report* (D2019 55608), 22-May-19.

Table 3.22 Water Supplied Performance Standards (sub-clause 4.2.3)

Sub-clause	Requirement	Compliance Grade
4.2.3	Water NSW must manage service interruptions in accordance with the Asset Management System required under clause 5.1.1 (Supply Service Interruption Performance Standard).	 Compliant

Risk

Failure to manage service interruptions in accordance with the Asset Management System presents a high risk that the supply of water may not be maintained and level of service obligations may not be met.

Target for Full Compliance

Evidence that service interruptions are managed in accordance with arrangements documented in the Asset Management System.

Obligation

This obligation requires WaterNSW to manage its service interruptions in accordance with the Asset Management System. This obligation relates to the supply of water via the Bulk Water Supply System; it does not relate to the release of CSR Water.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019.
- WaterNSW, *Protocol for Managing Supply Interruptions in Greater Sydney* (CD2019/140) (Revision 1), July 2019.
- WaterNSW, *Compliance and Performance Report; Performance Standards 2018-2019*, undated.
- Document: *RWSA Compliance Report – June 2019* (D2019/72211) and covering letter dated 11 June 2019 from WaterNSW to Sydney Water (D2019/70485).
- DPI Office of Water, *Sydney Catchment Authority; Water Licences and Approvals Package* (D2013/95242), May 2012.
- Document (template): *Draft Customer Supply Agreement - Bulk Water* (D2019/52602).
- Document (template): *Agreement for the Supply of Water Minor Consumer Agreement- Off-take* (D2019 52617).

Summary of reasons for grade

WaterNSW demonstrated that it now has in place a *Protocol for Managing Supply Interruptions in Greater Sydney*, which is referenced in the *Strategic Asset Management Plan*, thereby providing a link between the Asset Management System and WaterNSW's approach to the management of supply interruptions. These arrangements were previously and remain documented within the Bulk Water Supply Agreements, Customer Supply Agreements and associated Operating Protocols under which supply to customers serviced by the Bulk Water Supply System are supplied.

The Asset Management System also details WaterNSW's maintenance management arrangements, under which any works associated with supply interruptions is undertaken.

WaterNSW's annual compliance reporting and discussions during the audit interviews have demonstrated that WaterNSW has managed service interruptions in accordance with the Asset Management System; that notifications to customers have been in accordance with the referenced agreements and protocols; and that works undertaken in respect of service interruptions are managed through the maintenance management system.

On this basis, it is assessed that WaterNSW has demonstrated compliance with this obligation.

Discussion and notes

The *Strategic Asset Management Plan* (SAMP)⁴⁰⁶ details WaterNSW's customers' level of service requirements. These include the water supply being reliable and available in accordance with the relevant Raw Water Supply Agreement or Customer Supply Agreement and associated Operating Protocols. Reference is also made to the Works Approvals under which the Bulk Water Supply System is required to operate.

The SAMP references the *Protocol for Managing Supply Interruptions in Greater Sydney*⁴⁰⁷ as the guidance for managing supply interruptions to customers serviced by the Bulk Water Supply System. Review of the *Protocol for Managing Supply Interruptions in Greater Sydney* reveals that it details the level of service applicable for each customer/customer group and arrangements, including notification requirements, in relation to both planned and unplanned outages in each case. These requirements are based on and in most cases directly reference, the relevant Raw Water Supply Agreement or Customer Supply Agreement and Operating Protocols.

WaterNSW advised that the *Protocol for Managing Supply Interruptions in Greater Sydney* had not been in place during the audit period; it had only been recently developed in response to a recommendation (Recommendation 2018-06) arising from the 2018 Operational Audit (it was actually developed in July 2019, i.e. within the audit period). Nonetheless, as indicated above the arrangements documented therein were in place albeit not directly linked to the Asset Management System; they were not specifically referenced in the SAMP.

WaterNSW explained that all work associated with supply interruptions is managed through its maintenance management system. Unplanned interruptions (for example) result in the creation and issue of a work order(s) to undertake any repair work and corrective actions required. Data is extracted from the maintenance management system for reporting purposes.

In its *Compliance and Performance Report; Performance Standards 2018-2019*,⁴⁰⁸ WaterNSW reported that there had been ten (10) supply interruptions during the annual reporting period. It further notes that pipe breaks that had occurred in the Fish River Water Supply Scheme did not result in supply interruptions as the breaks were able to be isolated and supply maintained by back feed from reservoirs. This highlights a difference between an infrastructure failure, such as a pipe break, which may not result in a failure to supply, and a service interruption whereby there is a failure to maintain supply to a customer.

Details of whether these supply/service interruptions (or outages) were planned or unplanned is not identified; however, on the basis of the notification actions described in the report, it appears that the interruptions were in most cases planned. The exceptions include supply to the Nepean and Prospect Water Filtration Plants (one interruption each), which the report indicates were managed in accordance with incident management protocols.

WaterNSW noted that it has a target of ensuring 100% availability of water. WaterNSW's obligations in respect of service interruptions, which from a practical perspective are different for bulk water supply compared to (for example) a residential property, are documented as follows:

⁴⁰⁶ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019, section 1.2.

⁴⁰⁷ WaterNSW, *Protocol for Managing Supply Interruptions in Greater Sydney* (CD2019/140) (Revision 1), July 2019.

⁴⁰⁸ WaterNSW, *Compliance and Performance Report; Performance Standards 2018-2019*, undated, page 5.

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- summarised for each customer/customer group in the respective “Level of Service” sections of the *Protocol for Managing Supply Interruptions in Greater Sydney*;
 - detailed in the respective Raw Water Supply Agreement or Customer Supply Agreement and Operating Protocols, for example:
 - for supply to Sydney Water, the Operating Protocol included in the *Water Licences and Approvals Package*⁴⁰⁹ identifies an “event” (service interruption) as a deviation from water licence and approval conditions, and provides examples of what are deemed to be planned and unplanned events;
 - for supply to other bulk water customers, the “Failure to Supply” section of the Customer Supply Agreements outlines requirements in respect of failure, temporary cessation or discontinuation of supply;⁴¹⁰ and
 - for minor customers, the “Interruptions to Supply” section of the Minor Customer Agreement outlines arrangements in respect of supply interruptions, noting that there is no obligation for continuous supply under these agreements.⁴¹¹

It is noted that, whilst the *Protocol for Managing Supply Interruptions in Greater Sydney* details the actions to be taken in response to both planned and unplanned interruptions, the *Compliance and Performance Report; Performance Standards 2018-2019* does not differentiate between the two types. As an opportunity for improvement (**OFI-WNSW-2019-13**), it is suggested that WaterNSW considers differentiating between planned and unplanned service interruptions when reporting performance against the Supply Service Interruption Performance Standard, thereby providing a clearer indication of system performance.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this obligation:

- **OFI-WNSW-2019-13:** It is suggested that WaterNSW considers differentiating between planned and unplanned service interruptions when reporting performance against the Supply Service Interruption Performance Standard, thereby providing a clearer indication of system performance.

Supplemental information

Under the terms of the Bulk Water Supply Agreement and associated Operating Protocol between WaterNSW and Sydney Water, WaterNSW is required to report monthly on its performance against the requirements of those governing instruments. The monthly report for June 2019⁴¹² (for example) shows that WaterNSW reported on matters including anticipated variations to supply quantity (and quality); exception/event reports (which could potentially include information in respect of supply interruption, had there been any); and maintenance/planned shutdown.

This demonstrates one element of the ongoing interaction between WaterNSW and Sydney Water, which has the provision for communication in respect of planned supply interruptions.

⁴⁰⁹ DPI Office of Water, *Sydney Catchment Authority; Water Licences and Approvals Package* (D2013/95242), May 2012.

⁴¹⁰ Document (template): *Draft Customer Supply Agreement - Bulk Water* (D2019/52602).


⁴¹¹ Document (template): *Agreement for the Supply of Water Minor Consumer Agreement- Off-take* (D2019 52617).

⁴¹² Document: *RW&A Compliance Report – June 2019* (D2019/72211) and covering letter dated 11 June 2019 from WaterNSW to Sydney Water (D2019/70485).

3.5 Organisational systems management (Licence Part 5)

3.5.1 Asset management system (clause 5.1)

Table 3.23 Asset management system (sub-clause 5.1.1)

Sub-clause	Requirement	Compliance Grade
5.1.1	Water NSW must at all times maintain a Management System for carrying out its functions authorised under this Licence that is consistent with the <i>Australian Standard AS ISO 55001:2014 Asset Management – Management systems – Requirements</i> or other standard approved by IPART on request by Water NSW (the Asset Management System).	 Compliant
Risk		Target for Full Compliance
Failure to maintain an Asset Management System for carrying out the functions authorised under the Licence presents a high level of operational risk that WaterNSW may not be able to effectively manage the safe and reliable performance of its assets consistent with contemporary asset management practices.		Evidence that WaterNSW has maintained its Asset Management System and that the Asset Management System continues to be consistent with the requirements of <i>AS ISO 55001:2014</i> .
Obligation		
This obligation requires WaterNSW to maintain an Asset Management System for carrying out functions authorised under the Licence. Such Asset Management System must be consistent with ISO 55001.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ Document: <i>2018 08 23-29 AMS BSI Assessment Report_RACS 60</i> (D2019 21131). ▪ Document: <i>1908 WaterNSW QSEA RES and CAV Assessment Report</i>. ▪ WaterNSW, <i>Strategic Asset Management Plan; Asset Management System Manual</i> (CD2015/436) (Version 6), April 2019. ▪ MS Excel workbook: <i>DRAFT - 2019 06 Asset Management - Assetivity Report - ACTION PLAN</i>. ▪ WNSW, <i>Asset Management Policy</i> (CD2015/488) (Under Review), August 2019. ▪ WaterNSW, <i>Strategic Asset Management Plan; Asset Management System Manual</i> (CD2015/436) (Under Review), August 2019. 		

Summary of reasons for grade

WaterNSW continued to maintain an Asset Management System consistent with ISO 55001 during the audit period. This was demonstrated by successful completion of surveillance and recertification audits undertaken by an accredited certifier.

WaterNSW also commissioned an independent audit to assess the actions taken in response to recommendations arising from the 2018 Operational Audit. Whilst these recommendations have not yet been fully addressed, the remaining planned actions are considered to be reflective of ongoing continual improvement, a key element of a robust management system.

On this basis, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

WaterNSW demonstrated that it has maintained its Asset Management System certification to ISO 55001. A surveillance audit was undertaken in August 2018⁴¹³ and a recertification audit conducted in August/September 2019.⁴¹⁴ No new non-conformities were identified in either case, and certification continued.

In addressing recommendations arising from the 2018 Operational Audit, WaterNSW has revised its *Strategic Asset Management Plan (SAMP)*⁴¹⁵ to specifically include reference to its functions under the Operating Licence and to fully reflect stakeholder/customer level or service requirements, and has added to its asset management objectives to more fully reflect its functional and level of service obligations (refer Table 4.8). It has also continued to develop its Asset Class Strategies (formerly Asset Class Standards) to ensure that the full portfolio of its assets is appropriately addressed (refer Table 4.8 and Table 4.9).

WaterNSW has commissioned an independent audit to assess ISO 55001 compliance and the adequacy of the actions it has taken to address the previous audit recommendations. A total of 20 recommendations were made to close areas of non-conformance and 25 opportunities for improvement identified.

WaterNSW developed an action plan⁴¹⁶ and is well advanced in addressing both the recommendations and opportunities for improvement. Recommendations remaining to be fully addressed include, for example:

- the *Asset Management Policy*⁴¹⁷ and SAMP⁴¹⁸ have both been updated to address some issues, but are yet to be approved; the forecast completion date is currently 30 November 2019;
- recommendations in relation to asset change management are currently under review and update with a forecast completion date of 31 December 2019; and
- development of the full portfolio of Asset Class Strategies will address a number of recommendations and opportunities for improvement; again the forecast completion date is 31 December 2019.

Continual improvement is a key element in maintaining a robust management system. Whilst action in response to some recommendations arising from the 2018 Operational Audit remains ongoing, on the basis that the remaining actions have been planned and are being implemented, WaterNSW is considered to have demonstrated that the Asset Management System has been maintained during the audit period.

⁴¹³ Document: 2018 08 23-29 AMS BSI Assessment Report_RACS 60 (D2019 21131).

⁴¹⁴ Document: 1908 WaterNSW QSEA RES and CAV Assessment Report.

⁴¹⁵ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019.

⁴¹⁶ MS Excel workbook: DRAFT - 2019 06 Asset Management - Assetivity Report - ACTION PLAN.

⁴¹⁷ WNSW, *Asset Management Policy* (CD2015/488) (Under Review), August 2019.

⁴¹⁸ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Under Review), August 2019.

Recommendations

There are no recommendations in respect of this obligation.


Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

Table 3.24 Asset management system (sub-clause 5.1.2)

Sub-clause	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

Risk

Failure to fully and effectively implement its Asset Management System presents a high level of operational risk that WaterNSW may not be effectively managing the safe and reliable performance of its assets as required to meet its business objectives.

Target for Full Compliance

Evidence that WaterNSW has fully implemented its Asset Management System in respect of all of the functions authorised under the Licence and that all relevant activities are carried out in accordance with the Asset Management System.

Obligation

This obligation requires WaterNSW to fully implement its Asset Management System and carry out all relevant activities in accordance with Asset Management System, i.e. in accordance with the processes and procedures that together comprise the Asset Management System.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Asset Class Strategy Procedure* (CD2019/46), March 2019.
- Document: *Asset Class Strategy Template and content guide* (D2019/21771).
- Document: *Asset Class Strategies Development Plan* (D2019/79611), Revision August 2019.
- WaterNSW, *Asset Class Strategy; High Voltage Power Transformers* (Revision 0E), 2 September 2019 (D2019/85254).
- WaterNSW, *Asset Class Strategy; End of Line Control Valves (ELCV)* (Revision 0), 14 August 2019 (D2019/66476).
- MS Excel workbook: *Project Capitalisation Form - Burrinjuck Dam - Replace Baulk chains - 2635* (D2019/23531).
- MS Excel workbook: *WaterNSW Asset Data Entry Template_WDRBUK Burrinjuck Dam - Trasbrack Chains* (D2019/57339).
- MS Excel workbook: *WaterNSW Asset Documentation Entry Template_WDRBUK Burrinjuck Dam - Trasbrack Chains* (D2019/57343).
- EY, *Dam Safety Management Review; Internal Audit Report; WaterNSW*, 29 July 2019 (D2019/79340).
- MS Excel workbook: *WaterNSW Mandatory Training Matrix 2019 incl Positions* (D2018/50209).
- Document: *Training record - position 405320 Construction Manager*.
- Document: *Training record - position 402350 Maintenance Officer*.
- PowerPoint presentation: *AMS Awareness Training - Staff Presentation* (D2018/87912).
- PowerPoint presentation: *Staff AMS elearning module (content)* (D2019/40126).

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- WNSW, *Management Review; Asset Management System*, August 2018 (D2018/89347).
 - WaterNSW, *Annual Asset Performance and Health Report*, August 2018 (D2018/8939).
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Summary of reasons for grade

Based on observations during the field verification visits and the discussion presented in respect of this obligation and clauses 2.4.1, 3.1.1, 2.2.1 and 4.2.3 (refer Table 3.6, Table 3.12, Table 3.5 and Table 3.22), WaterNSW demonstrated that it had continued to implement and carry out its activities in accordance with its Asset Management System. During the audit period it delivered capital projects and implemented maintenance practices consistent with requirements. Furthermore, and importantly, it continued to develop its asset management practices through ongoing implementation of improvements.

On this basis, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

Overview:

Implementation of the Asset Management System has been discussed in respect of:

- operation and management of the Catchment Infrastructure Works (refer Table 3.6);
- construction, maintenance and operation of the Water Management Works (refer Table 3.12);
- management and protection of the Declared Catchments (refer Table 3.5); and
- management of service interruptions (refer Table 3.22).

Further aspects are discussed, or discussed in more detail, in the following.

Asset Class Strategies:

WaterNSW advised that it has set up a new team to complete development of its Asset Class Strategies, the purpose of which is to provide strategic direction for the life cycle management of the respective asset class. As reported in more detail in Table 4.9 (in respect of previous audit Recommendation 2018-07), it has developed an *Asset Class Strategy Procedure*⁴¹⁹ and an *Asset Class Strategy Template and content guide*⁴²⁰ which together guide preparation of these key documents.

An *Asset Class Strategies Development Plan*,⁴²¹ which lists a total of thirty-five (35) Asset Class Strategies that will cover WaterNSW's asset portfolio, details the current state of development. As at August 2019, eight (8) were complete, 14 not yet started and the remainder in progress. Those that have been completed address the majority of the critical asset classes.

Completed documents for the following asset classes were provided as examples:

- *High Voltage Power Transformers*,⁴²² and
- *End of Line Control Valves (ELCV)*.⁴²³

Review of these documents confirmed that they are consistent with the guidance.

It is noted that the Asset Class Strategies are, in many cases, being developed to replace legacy documents (Asset Class Standards and Asset Management Plans) that were initially developed by WaterNSW's predecessor organisations (State Water and Sydney Catchment Authority).

Development of the Asset Class Strategies involves update and normalisation of these legacy

⁴¹⁹ WaterNSW, *Asset Class Strategy Procedure* (CD2019/46), March 2019.

⁴²⁰ Document: *Asset Class Strategy Template and content guide* (D2019/21771).

⁴²¹ Document: *Asset Class Strategies Development Plan* (D2019/79611), Revision August 2019.

⁴²² WaterNSW, *Asset Class Strategy; High Voltage Power Transformers* (Revision 0E), 2 September 2019 (D2019/85254).

⁴²³ WaterNSW, *Asset Class Strategy; End of Line Control Valves (ELCV)* (Revision 0), 14 August 2019 (D2019/66476).

documents, whilst ensuring that information embedded in all parts of the organisation is gathered together to inform the strategic direction for management of the asset portfolio.

Given that the majority of information being compiled into the Asset Class Strategies is pre-existing, their ongoing development is considered to be reflective of both continual improvement and a healthy asset management system.

Asset Creation/Renewal:

Asset creation/renewal in accordance with the Project Delivery Framework is discussed in Table 3.12. As part of the project handover requirements, key records need to be integrated into the Asset Management System. These include the following, examples of which were provided in respect of the Burrinjuck Dam Bauk Chain Installation (Project 2635):

- Project Capitalisation Form;⁴²⁴
- Asset Data Entry Template;⁴²⁵ and
- Asset Documentation Entry Template.⁴²⁶

Maintenance Management:

WaterNSW advised that during the audit period it had continued to migrate from its legacy asset/maintenance management system to a new system based on Dynamic 365 software. As part of this process it has standardised the asset hierarchy and rationalised more than 3,500 maintenance plans into approximately 600.

WaterNSW indicated that it has reviewed its maintenance approach as implemented in the Greater Sydney area and reinstated some preventative maintenance that had previously been stripped out and is currently being undertaken as reactive maintenance. It also noted that considerable capital expenditure is planned to restore condition to assets (e.g. the Warragamba pipeline project discussed in Table 3.12).

A sample of maintenance records was sighted as evidence that maintenance programs continue to be implemented. For example, records were sighted in relation to the 6 month and 60 month inspections of the DN600 fixed cone dispersion valve at Chaffey Dam.

Dam Safety Management:

As noted in the site inspection report presented in Section 2, dam surveillance inspections form part of the daily operational activities at each dam site. These inspection form part of the overall requirements in respect of dam safety management.

WaterNSW has developed a mobile phone application called DamGuard for use in recording and communicating the results of its routine dam surveillance activities, thereby replacing the previous paper based system. Routes of inspections specific to each dam and activity frequency are loaded into the system, and the operators follow the routes and record the result of the inspections.

DamGuard enables the capture of photographs, GPS location and is time stamped at the time of data entry. Processing is undertaken through a cloud based system; exceptions are automatically notified based on limits set by dam safety engineers.

DamGuard was trialled at Hume and Warragamba dams in July 2018 and was operational over 40 sites by July 2019. It reflects an excellent improvement in the management of dam surveillance records and is to be commended.

WaterNSW demonstrated it had commissioned an internal audit (conducted by an external party),⁴²⁷ the objective of which was to assess the implementation and effectiveness of the current

⁴²⁴ MS Excel workbook: *Project Capitalisation Form - Burrinjuck Dam - Replace Bauk chains - 2635* (D2019/23531).

⁴²⁵ MS Excel workbook: *WaterNSW Asset Data Entry Template_WDRBUK Burrinjuck Dam - Trashrack Chains* (D2019/57339).

⁴²⁶ MS Excel workbook: *WaterNSW Asset Documentation Entry Template_WDRBUK Burrinjuck Dam - Trashrack Chains* (D2019/57343).

WaterNSW Dam Safety Program across a sample of dam locations to confirm that dam safety processes are being consistently deployed in line with regulatory expectations.

Training:

Ongoing training is required to ensure that competence in asset management practices is developed and maintained. This includes training in respect of new procedures or technologies, for example, use of the new DamGuard application described above.

Mandatory training requirements have been identified and documented in the *WaterNSW Mandatory Training Matrix*.⁴²⁸ This register identifies training requirements by role/position. A check of training records for Construction Manager Position No: 402320⁴²⁹ and Maintenance Officer Position No: 402350⁴³⁰ revealed that they had completed required training, including (for example) Dam Safety Site Accreditation, Dam Safety Surveillance Training (Initial), Dam Safety Surveillance Training (Refresher) and Water Quality Incident Response as appropriate to the position.

Asset Management System awareness training material is available to all staff. Information currently available in presentation format⁴³¹ has now been developed into an online e-Learning module.⁴³²

Management Review and Continual Improvement:

WaterNSW demonstrated that it undertakes an annual management review of the Asset Management System and reports this to the management committee. The report *Management Review; Asset Management System*⁴³³ provides the background reporting presented to a management review meeting on 27 August 2018. The report addressed matters including:

- Follow-up from previous management review;
- Changing circumstances;
- Key asset management activity;
- Asset management performance (against objectives, external audit, internal audit);
- Changes in profile of risk and opportunities; and
- Recommendations and opportunities for continual improvement – these included review of the Asset Management Policy for alignment with the SAMP; a review of the management review process view to streaming reporting processes; and continuation of Asset Management System awareness sessions

An *Asset Performance and Health Report*⁴³⁴ is produced annually. This report, which is used to inform the Infrastructure and Operations subcommittee of the Board, addresses matters including:

- Asset health statement (summary statement);
- Water supply related risk profile;
- Specific asset risk evaluations undertaken;
- Summary of reported asset failures;
- Water delivery capacity lost;

⁴²⁷ EY, *Dam Safety Management Review; Internal Audit Report; WaterNSW*, 29 July 2019 (D2019/79340).

⁴²⁸ MS Excel workbook: *WaterNSW Mandatory Training Matrix 2019 incl Positions* (D2018/50209).

⁴²⁹ Document: *Training record - position 405320 Construction Manager*.

⁴³⁰ Document: *Training record - position 402350 Maintenance Officer*.

⁴³¹ PowerPoint presentation: *AMS Awareness Training - Staff Presentation* (D2018/87912).

⁴³² PowerPoint presentation: *Staff AMS elearning module (content)* (D2019/40126).

⁴³³ WNSW, *Management Review; Asset Management System*, August 2018 (D2018/89347).

⁴³⁴ WaterNSW, *Annual Asset Performance and Health Report*, August 2018 (D2018/8939).

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- Asset non-conformance profile;
 - Summary of asset management activities undertaken to remedy risks and issues; and
 - Continuous improvement to this report.

Specific topics addressed indicate an appropriate focus on level of service delivery.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement


No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

3.5.2 Environmental Management System (clause 5.2)

Table 3.25 Environmental Management System (sub-clause 5.2.1)

Sub-clause	Requirement	Compliance Grade
5.2.1	Water NSW must at all times maintain an Environmental Management System for carrying out the functions authorised under this Licence that is consistent with the <i>Australian/New Zealand Standard AS/NZS ISO 14001:2016: Environmental management systems – Requirements with guidance for use</i> or other standard approved by IPART, on request by Water NSW (the Environmental Management System).	 Compliant
Risk	Failure to maintain an Environmental Management System for carrying out the functions authorised under the Licence presents a high level of operational risk that WaterNSW may not be able to effectively manage risks to the environment resulting from its operations.	Target for Full Compliance
		Evidence that WaterNSW has maintained its Environmental Management System and that the Environmental Management System continues to be consistent with the requirements of <i>AS/NZS ISO 14001:2016</i> .
Obligation	This obligation requires WaterNSW to maintain an Environmental Management System that is consistent with ISO 14001:2016.	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Environmental Management System Manual</i> (CD2015/445). ▪ BSI, <i>2018 0703-0803 BSI QSE Audit Report_RACS 61</i> (D2019/68975). ▪ WaterNSW, <i>Presentation - Clause presentation template for 2019 ~ Clause 5.2</i> (unknown) Undated. 	
Summary of reasons for grade	<p>WaterNSW has maintained its certification under ISO 14001:2015 and completed its transition audit in August 2018. WaterNSW provided the <i>Environmental Management System Manual</i>⁴³⁵ as evidence of the established EMS and the <i>BSI QSE Audit Report</i>⁴³⁶ as evidence of its certification by an external certification body. The EMS framework includes the assessment of environmental risk and documented processes have been developed to manage the identified risks, including the establishment of environmental objectives and targets.</p> <p>WaterNSW was assessed as compliant in relation to this obligation.</p>	

⁴³⁵ WaterNSW, *Environmental Management System Manual* (CD2015/445).

⁴³⁶ BSI, *2018 0703-0803 BSI QSE Audit Report_RACS 61* (D2019 68975).

Discussion and notes

WaterNSW manages an Integrated Business Management System with input from a range of relevant disciplines. The EMS is one of five subsidiary management systems housed within the overarching integrated Business Management System.

WaterNSW provided the *Environmental Management System Manual*⁴³⁷ as evidence of the established EMS and the *BSI QSE Audit Report*⁴³⁸ as evidence of its certification by an external certification body.

WaterNSW provided the *Clause presentation template for 2019 ~ Clause 5.2*⁴³⁹ that detailed the scope of the EMS, which includes all of the functions covered by the 2017-2022 Operating Licence, including the operation and management of all infrastructure required to provide water supply to regional towns, irrigators, Sydney Water and other licensed authorities, retail suppliers and councils.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information


No supplemental information is provided in respect of this obligation.

⁴³⁷ WaterNSW, *Environmental Management System Manual* CD2015/445

⁴³⁸ BSI, *2018 0703-0803 BSI QSE Audit Report_RACS 61* (D2019 68975)

⁴³⁹ WaterNSW, *Presentation - Clause presentation template for 2019 ~ Clause 5.2* (unknown) Undated

Table 3.26 Environmental Management System (sub-clause 5.2.2)

Sub-clause	Requirement	Compliance Grade
5.2.2	Water NSW must fully implement the Environmental Management System and carry out all relevant activities in accordance with the Environmental Management System.	 Compliant

Risk

Failure to fully and effectively implement its Environmental Management System presents a high level of operational risk that WaterNSW may not be effectively managing risks to the environment resulting from its operations.

Target for Full Compliance

Evidence that WaterNSW has fully implemented its Environmental Management System in respect of the functions authorised under the Licence and that all relevant activities are carried out in accordance with the Environmental Management System.

Obligation

This obligation requires WaterNSW to fully implement the Environmental Management System and to carry out all relevant activities in accordance with Environmental Management System.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Environmental Management System Manual* CD2015/445.
- WaterNSW, *WaterNSW Environmental Significant Aspects and Impacts Assessment v5* (D2019 39984) 23 May-19.
- WaterNSW, *WaterNSW EMS Objectives and Targets 2018-19* (D2018 117154).
- WaterNSW, *Board Comm on SPAC - EMS Quarterly Performance Trend Analysis* (D2019 84954) -19 Jun 19.
- WaterNSW, *Board Comm on WQHCP - Quarterly EMS Performance Trend Analysis* (D2019 84955) 20 Mar 19.
- WaterNSW, *Board Committee on WQHCP - Quarterly EMS Trend Analysis* (D2019 84957) 21 November 2018.
- WaterNSW, *Board Committee on WQHCP - Quarterly EMS Trend Analysis* (D2019 84958) 22 August 2018.
- WaterNSW, *Prepare Catchment Protection Work Program – Procedure* (CD2019 30).
- WaterNSW, *SOP - Exempt Development for Maintenance Activities* (CD2019 113).
- WaterNSW, *WaterNSW Procurement Framework* (CD2016 77[v2])6 Jun-19.
- WaterNSW, *ENV Environmental Impact Assessment Form (ELA) for Minor Works* (CD2016 81[v4]).
- WaterNSW, *Cold Water Pollution and Cyanobacteria Management - Operating Protocol* (CD2017 181[v1]).
- WaterNSW, *Fire Management WQ Policy Implem Guide* (CD2011 130) Dec-17.
- WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]) Jun-19.

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- WaterNSW, *Unexpected Aboriginal Objects Procedure* (CD2012 184[v4]).
 - WaterNSW, *2018 1009-10 Armidale Assurance Report_RACS 52_Final* (D2018 113250).
 - WaterNSW, *Split-Rock-Evan-Webb* (D2019 40531) 27-Mar-2019.
 - WaterNSW, *WaterNSW Environmental Significant Aspects and Impacts Assessment v5* (D2019 39984) 23 May-19.
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Summary of reasons for grade

WaterNSW has established an EMS that is consistent with *Australian/New Zealand Standard AS/NZS ISO 14001:2016: Environmental management systems – Requirements with guidance for use*. The EMS framework includes the assessment of environmental risk and documented processes have been developed to manage the identified risks, including the establishment of environmental objectives and targets.

WaterNSW demonstrated that it had undertaken assurance activities and system health checks, as a sample of its environmental management activities. *EMS Quarterly Trend Analysis* reports indicate that performance against objectives and targets continued to be met during the audit period.

WaterNSW is assessed as Compliant with this obligation.

Discussion and notes

WaterNSW provided the *Environmental Management System Manual* CD2015/445⁴⁴⁰ which includes within its scope the functions defined within the Operating License. WaterNSW provided the *Aspects and Impacts (A&I) Assessment*⁴⁴¹ as evidence that it had undertaken an assessment of environmental risk. The A&I Assessment includes an appraisal of inherent risk, current controls, residual risk and proposed controls to reduce risk further.

WaterNSW provided the *WaterNSW EMS Objectives and Targets 2018-19*⁴⁴² as evidence that it had developed environmental objectives and targets. Quarterly trend analyses were provided as evidence of tracking of progress in implementing environmental objectives and targets:

- *Board Comm on SPAC - EMS Quarterly Perf nTrend Analysis*;⁴⁴³
- *Board Comm on WQHCP - Quarterly EMS Perf nTrend Analysis*;⁴⁴⁴
- *Board Committee on WQHCP - Quarterly EMS Trend Analysis*;⁴⁴⁵ and
- *Board Committee on WQHCP Quarterly EMS Trend Analysis*.⁴⁴⁶

Training is also tracked and reported in the quarterly reports.

WaterNSW provided a range of manuals, procedures and protocols as evidence of the establishment of operational procedures:

- *Prepare Catchment Protection Work Program – Procedure*;⁴⁴⁷
 - *SOP - Exempt Development for Maintenance Activities*;⁴⁴⁸
 - *WaterNSW Procurement Framework*;⁴⁴⁹
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⁴⁴⁰ WaterNSW, *Environmental Management System Manual* CD2015/445.

⁴⁴¹ WaterNSW, *WaterNSW Environmental Significant Aspects and Impacts Assessment v5* (D2019 39984) 23 May-19.

⁴⁴² WaterNSW, *WaterNSW EMS Objectives and Targets 2018-19* (D2018 117154).

⁴⁴³ WaterNSW, *Board Comm on SPAC - EMS Quarterly Perf nTrend Analysis* (D2019 84954) -19 Jun 19.

⁴⁴⁴ WaterNSW, *Board Comm on WQHCP - Quarterly EMS Perf nTrend Analysis* (D2019 84955) 20 Mar 19.

⁴⁴⁵ WaterNSW, *Board Committee on WQHCP - Quarterly EMS Trend Analysis* (D2019 84957) 21 November 2018.

⁴⁴⁶ WaterNSW, *Board Committee on WQHCP - Quarterly EMS Trend Analysis* (D2019 84958) 22 August 2018.

⁴⁴⁷ WaterNSW, *Prepare Catchment Protection Work Program – Procedure* (CD2019 30).

⁴⁴⁸ WaterNSW, *SOP - Exempt Development for Maintenance Activities* (CD2019 113).

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- *ENV Environmental Impact Assessment Form (ELA) for Minor Works*,⁴⁵⁰
 - *Cold Water Pollution and Cyanobacteria Management - Operating Protocol*,⁴⁵¹
 - *Fire Management WQ Policy Implem Guide*,⁴⁵²
 - *Water Monitoring Program Manual*,⁴⁵³
 - *Unexpected Aboriginal Objects Procedure*.⁴⁵⁴

It was noted when reviewing the documents above, that there were some that were outside of the due date for review (**OFI-WNSW-2019-14**). An example is the *Management Review Procedure* (CD2013/67), which should have been reviewed by September 2018.

System Health Checks and assurance activities are recorded and documented via the Risk and Assurance Compliance System (RACS). Examples of assurance activities and system health checks include:

- *Armidale Assurance Report*⁴⁵⁵ – documents the outcomes of an inspection to assess whether WaterNSW's Armidale Site and Tamworth Peel River – Gauging Station conforms to the requirements of WaterNSW's management systems, including the Environmental Management System; and
- *Split-Rock-Evan-Webb*⁴⁵⁶ – a completed checklist that documents the findings of an environmental inspection at the Split Rock operations site.

It was noted in WaterNSW's response to the Audit Questionnaire that:

“For the 17/18 period the BSI transition audit (D2019/68975) is considered as the internal audit combined with the combined quarterly EMS Performance and Trend Analysis reports and Annual System Health Check (D2018/78280) were considered adequate to satisfy the requirements of the annual management review procedure (CD2013/67).”

Review of the *EMS Quarterly Trend Analysis*⁴⁵⁷ for July-September 2018 (for example) revealed that performance in minimising the environmental impacts of WaterNSW's infrastructure and operational activities during the quarter was as follows:

- Key environmental impacts are managed – all projects and works requiring a Review of Environmental Factors complied with the Environment Impact Assessment Procedure;
- Water NSW meets its environmental obligations for environmental flow releases from dams – 100% of obligations for environmental flow releases met;
- Key Heritage Management Action Plan outcomes are met – on track; and
- Environmental process system health check program executed – on track.

Performance in respect of positively influencing third party activities to protect the Declared Sydney Catchment Area, and promote an environmentally responsible culture that anticipates and responds to WaterNSW's environmental obligations was similarly positive. Subsequent quarterly reports indicated that WaterNSW continued to meet its performance targets.

WaterNSW showed the A&I Assessment⁴⁵⁸ as evidence of identification of improvement actions. During the audit interviews, it was discussed that the A&I Process is used to process

⁴⁴⁹ WaterNSW, *WaterNSW Procurement Framework* (CD2016 77[v2])6 Jun-19.

⁴⁵⁰ WaterNSW, *ENV Environmental Impact Assessment Form (ELA) for Minor Works* (CD2016 81[v4]).

⁴⁵¹ WaterNSW, *Cold Water Pollution and Cyanobacteria Management - Operating Protocol* (CD2017 181[v1]).

⁴⁵² WaterNSW, *Fire Management WQ Policy Implem Guide* (CD2011 130) Dec-17.

⁴⁵³ WaterNSW, *Water Monitoring Program Manual* (CD2011 179[v6]) Jun-19.

⁴⁵⁴ WaterNSW, *Unexpected Aboriginal Objects Procedure* (CD2012 184[v4]).

⁴⁵⁵ WaterNSW, *2018 1009-10 Armidale Assurance Report_RACS 52_Final* (D2018 113250).

⁴⁵⁶ WaterNSW, *Split-Rock-Evan-Webb* (D2019 40531) 27-Mar-2019.

⁴⁵⁷ WaterNSW, *Board Committee on WQHCP - 21 November 2018 - Quarterly EMS Trend Analysis* (D2019 84957).

⁴⁵⁸ WaterNSW, *WaterNSW Environmental Significant Aspects and Impacts Assessment v5* (D2019 39984) 23 May-19.

improvement actions, however, the ‘Action Tracking’ column, which indicates that the RACS system should be used to record actions, was blank. During the discussion, WaterNSW indicated that a number of the actions had been progressed or completed; however, there was no documentation available to verify that the process is documented and auditable (**OFI-WNSW-2019-15**).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunities for improvement have been identified in respect of this obligation:

- **OFI-WNSW-2019-14:** Undertake a review of current procedures to ensure that all are current and reviewed within the specified timeframes.
 - **OFI-WNSW-2019-15:** Implement a process to document and track the ‘proposed actions’ identified in the Aspect and Impacts Assessment Process.
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Supplemental information

No supplemental information is provided in respect of this obligation.

3.6 Customers and stakeholder relations (Licence Part 6)

3.6.1 Accounting for water (clause 6.2)

Table 3.27 Accounting for water (clause 6.2.1)

Sub-clause	Requirement	Compliance Grade
6.2.1	Water NSW must maintain a Water Allocation Account for each Customer that holds a Water Licence.	 Compliant
Risk		Target for Full Compliance
Failure to maintain Water Allocation Account for each Customer presents a high risk that the availability and supply of water for Customers may not be appropriately accounted, with the result that water may be under or over supplied.		Evidence that WaterNSW has maintained a Water Allocation Account for each Customer that holds a Water Licence.
Obligation		
This obligation requires WaterNSW to maintain a Water Allocation Account for each customer that holds a Water Licence. A separate Account is maintained in respect of each Licence.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ Document: <i>6.2.1 IPART Audit_2018-2019 - WAS Accounts</i> (D2019/86792). ▪ Document: <i>6.2.1 IPART Audit_2018-2019 - WAS Accounts</i> (D2019/86792). ▪ Document: <i>WAS Manual - 3. Fundamental Business Rules</i> (D2019/86797). ▪ Document: <i>WAS Manual - Interpret Rules for Water Sharing Plans - Water Account Process</i> (D2019/86809). ▪ Document: <i>WAS Manual - 9. Water Source Water Account Parameters</i> (D2019/86806). ▪ Document: <i>WAS Manual - 5. Access Licence Dealings</i> (D2019/86803). ▪ Document: <i>WAS Manual - Manage Water Accounts Process</i> (D2019/86794). 		
Summary of reasons for grade		
WaterNSW demonstrated that processes are in place to generate a new Water Allocation Account whenever a Water Licence is registered in the Water Licensing System. This is an automated process, which ensures that a Water Account is generated in each case.		
WaterNSW further demonstrated that Water Accounts are actively used to register all water and related transactions related to the respective Water Licence.		
On this basis, WaterNSW is assessed to have demonstrated compliance with this obligation.		

Discussion and notes

WaterNSW advised that a Water Allocation Account is created when an Access Licence is registered in the Water Licensing System (WLS). Water accounts for all regulated, groundwater and unregulated Access Licences are maintained in the Water Accounting System (WAS).

WaterNSW provided an explanatory document that provided an overview of the WAS,⁴⁵⁹ specifically in respect of account creation. The process is summarised in the following.

A Water Account is created automatically when an Access Licence is registered. The WAS extracts details from the Water Licensing System, with which it shares the same database. Information held in the Water Licensing System, including the following, determines the characteristics of the Water Account:

- Work Approval – Water Source, River Section, Stream Order, Work Site, Extraction Site IDs, Link dates;
- Access Licence – Water Source, Water Type, Category, Entitlement Share, Status dates, Name & Address, Customer Number, etc.; and
- Water account status – current, expired, surrendered, suspended.

This information remains static and cannot be changed within the WAS.

A new account will automatically take on the algorithms already programmed in the WAS, which are related to the Water Sharing Plan (WSP) applicable to the source against which the Access Licence has been registered, as follows:

- each water source and category has an account model and associated configuration rules; these configuration rules have been interpreted and built from the WSP rules in collaboration with the water regulator, DPIE.
- when an Access Licence is registered within the WLS, it will be assigned a configuration rule(s) based on the water source and category.
- when a Water Account is automatically created in the WAS, it will be assigned account parameters in accordance with the assigned configuration rules.

Any dealing in Access Licences are managed within the WLS, with a note recorded on the Water Account and the resultant changes automatically applied.

WaterNSW provided a sample of procedural documents that detail the water accounting process. These include (for example):

- *WAS Manual - 3. Fundamental Business Rules*⁴⁶⁰ – this details the fundamental rules that guide the water accounting process. It addresses: Water Allocation Accounting Models; Other Sub-Accounts; Share Components; Accounting Limits Calculation Methods; Accounting Parameters for Duration of Water Sharing Plan; Annual Accounting Parameters; Periodic and Adhoc Announcements; and Key Formula(essentially a ‘how to’ guide);
- *WAS Manual - Interpret Rules for Water Sharing Plans - Water Account Process*⁴⁶¹ – this provides guidance for application of rules in respect of Water Sharing Plans.
- *WAS Manual - 9. Water Source Water Account Parameters*⁴⁶² – summarises the applicability of the water accounting parameters in relation to the water source type, accounting model and licence categories.

⁴⁵⁹ Document: *6.2.1 IPART Audit_2018-2019 - WAS Accounts* (D2019/86792).

⁴⁶⁰ Document: *WAS Manual - 3. Fundamental Business Rules* (D2019/86797).

⁴⁶¹ Document: *WAS Manual - Interpret Rules for Water Sharing Plans - Water Account Process* (D2019/86809).

⁴⁶² Document: *WAS Manual - 9. Water Source Water Account Parameters* (D2019/86806).

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- *WAS Manual - 5. Access Licence Dealings*⁴⁶³ – outlines to process for Access Licence dealings.

All water transactions (usage transactions and meter readings) are recorded against the Water Account within the WAS. WaterNSW advised that accounting rules vary from valley to valley; for example:

- in some Valleys, the account is debited for the ordered quantity of water even if not taken; whilst
- in other Valleys, the account is only debited for what is used.

Meter readings are generally taken by WaterNSW Customer Field Officers (CFOs), although readings can also be taken by customers and entered via iWAS, the WaterNSW online water ordering system.

Each Water Account is closed off, reconciled and re-opened at the end of each water year. This process is undertaken in accordance with documented procedures.⁴⁶⁴ This process ensures that all transactions have been captured and there are no anomalies.

A sample Water Account was reviewed online during the audit interviews; details were as follows:

- Licence No: 90AL813099 (WAL No: 20702);
- Regulated river source;
- Work Approval is in place for a DN100 centrifugal pump;
- a temporary transfer (within the water year) to Licence No: 90AL813085 had been recorded; a check of the Water Account for the receiving Licence No. confirmed the transfer; and
- a check between the WLS and WAS confirmed that all details were consistent between the Access Licence and the Water Account.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information


No supplemental information is provided in respect of this obligation.

⁴⁶³ Document: *WAS Manual - 5. Access Licence Dealings* (D2019/86803).

⁴⁶⁴ Document: *WAS Manual - Manage Water Accounts Process* (D2019/86794).

3.6.2 External dispute resolution scheme (clause 6.10)

Table 3.28 External dispute resolution scheme (clause 6.10.1)

Sub-clause	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
Risk	Failure to comply with this obligation presents a high level of risk in respect of WaterNSW’s customer relations. It is important that customers and consumers have an alternative independent means of raising concerns in respect of WaterNSW’s actions and/or performance.	Target for Full Compliance Evidence that WaterNSW is a member of the Energy & Water Ombudsman NSW.
Obligation	This obligation requires WaterNSW to be a member of the Energy and Water Ombudsman of NSW.	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ Document: <i>2018-19 EWON Casework Fee Q1 Projection Report_18-19</i> (D2019/86666). ▪ Document: <i>2018-19 EWON Membership invoice - Q3 INV00002641</i> (D2019/86626). ▪ Document: <i>2018-19 EWON Membership invoice - Q4 INV00002705</i> (D2019/86632). ▪ Document: <i>2018-19 EWON Membership invoice - Annual Fixed Fee INV00002762</i> (D2019/86637). ▪ Energy and Water Ombudsman of NSW website at: https://www.ewon.com.au/page/suppliers/list-of-member-providers. 	
Summary of reasons for grade	<p>WaterNSW demonstrated by the provision of membership invoices that it was a member of the Energy and Water Ombudsman of NSW during the audit period. Membership was also confirmed by visiting the Energy and Water Ombudsman of NSW website, where WaterNSW is identified as a member on the “Water providers” page.</p> <p>Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.</p>	
Discussion and notes	WaterNSW confirmed that it is a member of the Energy and Water Ombudsman of NSW (EWON) and provided copies of the following as evidence:	

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- EWON Casework Fee Projection Report as at 30/09/2018;⁴⁶⁵
 - Quarterly membership invoices for projected casework fees for: Q3 January to March 2019 and Q4 April to June 2019;^{466,467} and
 - Invoice for annual fixed fee for FY20.⁴⁶⁸

WaterNSW's membership was also confirmed by visiting the EWON website ("Water providers" page),⁴⁶⁹ which notes that WaterNSW is required to become a member of EWON under its Operating Licence.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

⁴⁶⁵ Document: *2018-19 EWON Casework Fee Q1 Projection Report_18-19* (D2019/86666).


⁴⁶⁶ Document: *2018-19 EWON Membership invoice - Q3* INV00002641 (D2019/86626).

⁴⁶⁷ Document: *2018-19 EWON Membership invoice - Q4* INV00002705 (D2019/86632).

⁴⁶⁸ Document: *2018-19 EWON Membership invoice - Annual Fixed Fee* INV00002762 (D2019/86637).

⁴⁶⁹ Energy and Water Ombudsman of NSW website at: <https://www.ewon.com.au/page/suppliers/list-of-member-providers>.

Table 3.29 External dispute resolution scheme (clause 6.10.2)

Sub-clause	Requirement	Compliance Grade
6.10.2	<p>Water NSW must:</p> <ul style="list-style-type: none"> 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 to any person, free of charge, on its website for downloading. 	 Compliant
Risk	<p>Failure to comply with this obligation presents a high level of risk in respect of WaterNSW’s customer relations. It is important that customers and consumers are aware that they have an alternative independent means of raising concerns in respect of WaterNSW’s actions and/or performance.</p>	Target for Full Compliance
		<p>Evidence that WaterNSW has prepared a pamphlet that explains the operation of the dispute resolution service provided by the Energy & Water Ombudsman NSW; has provided a copy to Customers at least annually with their Bills; and has made the pamphlet available on its website for downloading free of charge by any person.</p>
Obligation	<p>This obligation requires WaterNSW to provide information about the dispute resolution service provided by the Energy and Water Ombudsman of NSW. Such information is to be provided to Customers at least annually with their Bills and is to be available on the WaterNSW website for downloading free of charge.</p>	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ “Customer Feedback and Complaints” page on the WaterNSW website: https://www.watarnsw.com.au/customer-service/feedback/feedback-and-complaints-handling-policy. ▪ <i>Customer feedback</i> pamphlet, as available on the WaterNSW website at: https://www.watarnsw.com.au/data/assets/pdf_file/0020/140636/WaterNSW_Customer-Feedback.pdf. ▪ “How we investigate complaints” page on the EWON website: https://www.ewon.com.au/page/making-a-complaint/how-we-investigate-complaints. ▪ Document: <i>WaterNSW Customer-Feedback Mailout Feb 2019</i> (D2019/86685). ▪ Email dated 21 October 2019 from WNSW to DTS Communicate and response of same date (re: <i>Q4 [Q3] Feedback Insert</i>). ▪ WaterNSW internal email dated 29 May 2019 (re: <i>Q3 Customer newsletters</i>). 	

Summary of reasons for grade

WaterNSW demonstrated that it has prepared information that explains the dispute resolution service provided by the Energy and Water Ombudsman of NSW (EWON), and that such information is available on its website both on the “Customer Feedback and Complaints” page and as a pdf file that can be downloaded free of charge. Reference to the EWON website provides details of how a complaint or dispute is investigated by EWON.

WaterNSW advised that the *Customer feedback* pamphlet, which contains the required information, is posted out annually with customer invoices, and provided evidence to demonstrate that it had done so in May 2019 (i.e. with the 2018/19 Q3 Bills).

Accordingly, it is assessed that WaterNSW has demonstrated full compliance with this obligation.

Discussion and notes

WaterNSW demonstrated that it has prepared information that explains the dispute resolution service provided by the Energy and Water Ombudsman of NSW (EWON), including any right to have a Complaint or dispute referred to the EWON and how such a Complaint or dispute can be assessed. Such information is available on WaterNSW’s website, both on the “Customer Feedback and Complaints” page⁴⁷⁰ and as a pdf file⁴⁷¹ that can be downloaded free of charge.

The content of the information, which is presented with information regarding WaterNSW’s internal complaint handling system, is the same in both locations, as follows:

“Contacting the Energy & Water Ombudsman NSW (EWON)”

You have the right to contact EWON at any time for independent advice and information. However, we do hope you will contact us first to allow us the opportunity to resolve any issues.

EWON can be contacted on 1800 246 545 or you can make an online complaint on their website at ewon.com.au.”

This indicates that:

- EWON provides independent advice and information (EWON does not only handle complaints);
- any person has the right to contact EWON; and
- a complaint can be made by telephone or online via the EWON website.

WaterNSW provided information about how a complaint or dispute can be assessed by reference to the EWON website. The EWON website provides detailed information about “How we investigate complaints”, including details in respect of:⁴⁷²

- EWON’s approach to assessing each complaint individually;
 - how long it will take;
 - the investigation process;
 - making payments on the complainant’s account during an investigation;
 - no contact between the parties in respect of the matter being investigated; and
 - the ability of the complainant to request a review.
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⁴⁷⁰ “Customer Feedback and Complaints” page on the WaterNSW website: <https://www.watarnsw.com.au/customer-service/feedback/feedback-and-complaints-handling-policy>.

⁴⁷¹ *Customer feedback* pamphlet, as available on the WaterNSW website at: https://www.watarnsw.com.au/data/assets/pdf_file/0020/140636/WaterNSW_Customer-Feedback.pdf.

⁴⁷² “How we investigate complaints” page on the EWON website: <https://www.ewon.com.au/page/making-a-complaint/how-we-investigate-complaints>.

Whilst on the basis of the above observations, WaterNSW is assessed to have addressed the requirements of part (a) of this obligation from a technical perspective, there is scope to more clearly outline that a Customer or any other person has the right to have a Complaint or dispute referred; the current wording promotes the “*right to contact EWON at any time for independent advice and information*” as the primary message. As an opportunity for improvement (**OFI-WNSW-2019.16**), it is suggested that WaterNSW should revise the information explaining the dispute resolution service provided by EWON to more explicitly explain that a Customer or any other person has the right to have a Complaint or dispute referred to EWON.

WaterNSW advised that the *Customer feedback* pamphlet⁴⁷³ is posted out annually with customer invoices, and provided evidence that it had done so in May 2019, i.e. with the 2018/19 Q3 billing cycle. Email correspondence from the printer/ mailing house confirmed that the *Customer feedback* pamphlet (and other information) had been included with the Q3 invoices, which were lodged to Australia Post on 31 May 2019.⁴⁷⁴ WaterNSW also demonstrated that it had advised staff regarding the issue of invoices and the information included therewith.⁴⁷⁵

WaterNSW explained that whilst regulated water customers are invoiced quarterly, unregulated water and groundwater customer are only billed annually, which means there is only one opportunity each year to provide the information to these customers.

As reported above, information about the dispute resolution service provided by EWON is available on, and can be downloaded free of charge from, the WaterNSW website. Apart from using the direct link provided by WaterNSW, the auditor was able to locate the information by navigation from the “Home” page, as follows:

- searching for “complaint” from the site masthead; or
- drilling down from the site masthead: About Us > Make a complaint (under Working with us) > Customer Feedback (link to pdf file).

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this obligation:

- **OFI-WNSW-2019.16:** It is suggested that WaterNSW should revise the information explaining the dispute resolution service provided by the Energy and Water Ombudsman of NSW (EWON) to more explicitly explain that a Customer or any other person has the right to have a Complaint or dispute referred to EWON.

Supplemental information

No supplemental information is provided in respect of this obligation.


⁴⁷³ Document: *WaterNSW Customer-Feedback Mailout Feb 2019* (D2019/86685).

⁴⁷⁴ Email dated 21 October 2019 from WNSW to DTS Communicate and response of same date (re: *Q4 [Q3] Feedback Insert*).

⁴⁷⁵ WaterNSW internal email dated 29 May 2019 (re: *Q3 Customer newsletters*).

3.6.3 Educative role (clause 6.11.1)

Table 3.30 Educative role (sub-clause 6.11.1)

Sub-clause	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 Act, and report on its activities in accordance with the Reporting Manual.	 Compliant

Risk

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.

Target for Full Compliance

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.

Obligation

This obligation requires WaterNSW to educate the community about the work it undertakes in managing and protecting the Declared Catchment Areas, and to report to IPART annually on the activities it has undertaken to do so.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Annual Catchment Management Report 2017-18*, undated, as available on the WaterNSW website at: https://www.watarnsw.com.au/_data/assets/pdf_file/0004/138235/Annual-Catchment-Management-Report-2017-18.pdf.
- Document: *Draft Annual Catchment Management Report – Engaged Communities* (D2019/18970).
- “Water Quality” page on the WaterNSW website at: <https://www.watarnsw.com.au/water-quality>.
- IPART, *Water NSW Reporting Manual; Operating Licence 2017-2022* (Version 4.0), 29 June 2018.
- Email dated 30 November 2018 from WaterNSW to IPART (re: *WaterNSW Annual report on Catchment Management relevant to the Declared Catchment Areas - Section 2.1.3*).

Summary of reasons for grade

WaterNSW demonstrated that it had fulfilled its educative role during the audit period by delivering community education activities and programs and making significant educative information available on its website. Furthermore, during the audit period it reported on such activities (undertaken during 2017/18) in the Annual Report on Catchment Management submitted to IPART on 30 November 2018 and made that report available on its website, consistent with the requirements of the *Reporting Manual*.

Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

Section 6(1)(c) of the *Water NSW Act 2014* identifies one of WaterNSW's objectives as follows:

“... 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.”

This obligation is therefore taken to mean that WaterNSW must educate the community about its work in meeting these objectives, within the Declared Catchment Areas.

WaterNSW advised that it implements its educative role as part of its community engagement processes, which also involve working with the community and affected stakeholders in respect of capital projects.

In its *Annual Catchment Management Report 2017-18*,⁴⁷⁶ WaterNSW identifies the groups of people with whom it engages to support the long-term management of drinking water. It notes that:

“We use a range of communication tools including the visitor centre at Warragamba Dam, the WaterNSW website, publications and media articles, a community enquiry service and interpretation structures at our dams and recreation areas. We also deliver a school education program to primary and high schools from across the catchment and Sydney area, and professional development opportunities to teachers.”

WaterNSW provided a copy of draft input to the Annual Catchment Management Report for 2018/19,⁴⁷⁷ which identified activities that had been undertaken during the audit period. These activities included:

- Delivery of the Warragamba Dam school excursion program:
 - the curriculum linked school excursion program was delivered to 128 groups comprising a total of 4,480 primary, secondary and tertiary students;
 - WaterNSW educators delivered water quality activities/lessons for 150 primary school students at the annual Wingecarribee Schools Environment Day in October; and
 - excursion evaluations completed by teachers reported that 100% of their students (primary, secondary and tertiary) increased their knowledge of the catchment management techniques used, potential impacts on drinking water and WaterNSW's role in managing water quality and quantity.
- Hosting visitors to the Warragamba Dam Visitor Centre:
 - more than 73,135 visitors were hosted at the centre; and
 - a temporary exhibition “Underwater Warragamba” was designed and installed in December 2018 together with supporting material.
- Scoping an education program to increase awareness of the need to minimise water quality impacts and illegal entry in the Upper Canal corridor, with increasing encroachment of new development in the area – scoping of a program was commenced in 2018/19 and will be further developed in 2019/20.

It is noted that a significant amount of educative material is provided on the WaterNSW website, including that referenced above. This can be accessed by navigation from the “Water Quality” menu on the “Home” page and selecting from the “Learning Centre” or “Greater Sydney's Drinking Water Catchments”. The “Learning Centre” (for example) includes teacher and student resources covering topics including *What is a catchment*, *Our water supply system* and *How catchments are managed*.

⁴⁷⁶ WaterNSW, *Annual Catchment Management Report 2017-18*, undated, as available on the WaterNSW website at: https://www.waternsw.com.au/data/assets/pdf_file/0004/138235/Annual-Catchment-Management-Report-2017-18.pdf.

⁴⁷⁷ Document: *Draft Annual Catchment Management Report – Engaged Communities* (D2019/18970).

The *Reporting Manual*⁴⁷⁸ requires that “an explanation of the types of community education activities and programs run by WaterNSW” is to be included in the Annual Report on Catchment Management, which is to be submitted to IPART by 30 November and made available on WaterNSW’s website for downloading free of charge.

As referenced above, the *Annual Catchment Management Report 2017-18*, which was submitted during the audit period, is available on the website. WaterNSW provided evidence that the report was submitted on 30 November 2018.⁴⁷⁹

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.


⁴⁷⁸ IPART, *WaterNSW Reporting Manual; Operating Licence 2017-2022 (Version 4.0)*, 29 June 2018, section 2.1.3.

⁴⁷⁹ Email dated 30 November 2018 from WaterNSW to IPART (re: *WaterNSW Annual report on Catchment Management relevant to the Declared Catchment Areas - Section 2.1.3*).

3.7 Performance monitoring and reporting (Licence Part 7)

3.7.1 Reporting in accordance with this Licence and the Reporting Manual (clause 7.2)

Table 3.31 Reporting in accordance with this Licence and the Reporting Manual (sub-clause 7.2.1)

Sub-clause	Requirement	Compliance Grade
7.2.1	<p>Water NSW must comply with its reporting obligations set out in this Licence and in the Reporting Manual, including in relation to:</p> <ul style="list-style-type: none"> a) water source protection and conservation; b) Bulk Water storage and transmission; c) Performance Standards; d) organisational systems management; e) Customer and stakeholder relations; and f) performance monitoring and reporting including: <ul style="list-style-type: none"> i) IPART performance indicators; and ii) the National Water Initiative Performance Indicators. 	 Compliant
Risk	<p>Failure to comply with this obligation presents a low operational risk. Failure to report has no direct impact on operational performance, although compliant reporting enables independent monitoring and promotes public confidence.</p>	Target for Full Compliance
		<p>Evidence that WaterNSW has prepared, submitted and published all of the requisite reports in accordance with the requirements set out in the Reporting Manual.</p>
Obligation	<p>This obligation requires WaterNSW to prepare reports in respect of a range of matters, to submit specific reports to IPART, NSW Health and customers depending upon the nature of the report, and to make some reports available to the public on its website.</p>	
Evidence sighted	<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ Document: <i>Annual Water Quality Management System Report 2017-18</i> (D2018/94745). ▪ Email dated 1 September 2018 from WaterNSW to IPART (re: <i>WaterNSW 1 September Reporting</i>) (D2018/95966). ▪ Email dated 30 August 2018 from WaterNSW to NSW Health (re: <i>WaterNSW Water Quality Management System – 1 September 2018 Report</i>) (D2018/95509). ▪ Letter dated 29 March from WaterNSW to IPART (re: <i>WaterNSW Notification of Significant Changes</i>) (D2019/30979). ▪ WaterNSW, <i>Annual Water Quality Monitoring Report 2017-18; Sydney Catchment Area</i>, undated. ▪ Email dated 30 November 2018 from WaterNSW to IPART (re: <i>WaterNSW Annual report on Water Quality Monitoring relevant to Declared Catchment Areas - Section 2.1.2</i>) (D2018/131670). 	

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- WaterNSW, *Annual Catchment Management Report 2017-18; Sydney Catchment Area*, undated.
 - Email dated 30 November 2018 from WaterNSW to IPART (re: *WaterNSW Annual report on Catchment Management relevant to the Declared Catchment Areas - Section 2.1.3*) (attachment to D2019/19304).
 - WaterNSW, *Water Conservation Strategy*, undated.
 - Email dated 1 November 2018 from WaterNSW to IPART (re: *WaterNSW Water Conservation Strategy*) (D2018/110791).
 - WaterNSW, *Local Water Utility Releases; Review of the Monitoring of the Quality of Water Released to LWUs*, June 2019.
 - Email dated 28 June 2019 from WaterNSW to IPART (re: *Clause 3.4.6 and 3.4.7 - Report - Review of Water Quality Monitoring of water released to Local Water utilities*) (D2019/66341).
 - WaterNSW, *Compliance and Performance Report; Performance Standards 2017-2018*, undated (D2018/77702).
 - Email dated 2 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 Sept Reporting*) (D2018/95972).
 - WaterNSW, *Compliance and Performance Report; Asset Management System 2017-2018*, 1 September 2018.
 - Email dated 1 September 2018 from WaterNSW to IPART (re: *WaterNSW Compliance and Performance report (Asset Management System)*).
 - WaterNSW, *Compliance and Performance Report; Environmental Management System 2017-2018*, September 2018 (D2018/73234).
 - Email dated 2 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 Sept Reporting*) (D2018/95972).
 - WaterNSW, *Compliance and Performance Report; Customer and Stakeholder Relations 2017-2018*, undated (D2018/77701).
 - MS Excel workbook: *Water Utility performance indicators template – IPART – 1 Sept 2018*.
 - MS Excel workbook: *Environment - IPART Performance Indicators 2017-2018 - 1 Oct 2018* (D2018 96189).
 - Email dated 28 September 2018 from WaterNSW to IPART (re: *WaterNSW IPART and NWT Environment Indicator Data – 1 October 2018*) (D2019/75620).
 - MS Excel workbook: *NWT Indicator Data - Export from NRP Database - 1 Sept 2018 reporting* (D2018/95457).
 - Email dated 31 August 2018 from WaterNSW to IPART (re: *WaterNSW NWT Indicator Reporting – 1 September*) (D2018/95456).
 - MS Excel workbook: *NWT Environment Indicator Data - Export from NPR Database – 28 Sept 2018* (D2018/107337).
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Summary of reasons for grade

Review of an extensive portfolio of reports together with evidence of submission (typically email correspondence) provided by WaterNSW and inspection of the WaterNSW website revealed that, based on the sample of information provided, WaterNSW had complied with its reporting obligations during the audit period.

Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

The Reporting Manual requires reporting in respect of a range of matters, which collectively encompass the matters identified under this obligation. Such reporting includes both periodic reporting and 'as required' reporting pursuant to specific Licence obligations.

WaterNSW provided an extensive portfolio of reports together with evidence of submission (typically email correspondence). Considering reporting in respect of each of the categories identified under this obligation (for example):

- Water source protection and conservation:
 - *Annual Water Quality Management System Report 2017-18*⁴⁸⁰ submitted to IPART on 1 September 2018⁴⁸¹ and NSW Health on 30 August 2018;⁴⁸²
 - Notification of significant changes to the Water Quality Management System were notified to IPART on 29 March 2019;⁴⁸³
 - *Annual Water Quality Monitoring Report 2017-18*⁴⁸⁴ was submitted to IPART on 30 November 2018⁴⁸⁵ and is available on the website;⁴⁸⁶
 - *Annual Catchment Management Report 2017-18*⁴⁸⁷ was submitted to IPART on 30 November 2018⁴⁸⁸ and is available on the website;
 - *Water Conservation Strategy*⁴⁸⁹ was submitted to IPART on 1 November 2018;⁴⁹⁰ and
 - Whilst a recalculation of System Yield was triggered late in the audit period, no reporting was required (refer Table 3.7, Table 3.8 and Table 3.9).
 - Bulk Water storage and transmission:
 - *Local Water Utility Information Request Procedure* is available on the website (refer Table 3.18);
 - *Local Water Utility Releases; Review of the Monitoring of the Quality of Water Released to LWUs*,⁴⁹¹ was submitted to IPART on 28 June 2019;⁴⁹²
 - *Annual Water Balance* reports are available on the website.
 - Performance Standards:
 - *Compliance and Performance Report; Performance Standards 2017-2018*⁴⁹³ was submitted to IPART on 2 September 2018.⁴⁹⁴
 - Organisational systems management:
 - *Compliance and Performance Report; Asset Management System 2017-2018*⁴⁹⁵ was submitted to IPART on 1 September 2018⁴⁹⁶ and is available on the website; and
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⁴⁸⁰ Document: *Annual Water Quality Management System Report 2017-18* (D2018/94745).

⁴⁸¹ Email dated 1 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 September Reporting*) (D2018/95966).

⁴⁸² Email dated 30 August 2018 from WaterNSW to NSW Health (re: *WaterNSW Water Quality Management System – 1 September 2018 Report*) (D2018/95509).

⁴⁸³ Letter dated 29 March from WaterNSW to IPART (re: *WaterNSW Notification of Significant Changes*) (D2019/30979).

⁴⁸⁴ WaterNSW, *Annual Water Quality Monitoring Report 2017-18; Sydney Catchment Area*, undated.

⁴⁸⁵ Email dated 30 November 2018 from WaterNSW to IPART (re: *WaterNSW Annual report on Water Quality Monitoring relevant to Declared Catchment Areas - Section 2.1.2*) (D2018/131670).

⁴⁸⁶ Evidence of submission to NSW Health not identified within the documents provided; not followed up.

⁴⁸⁷ WaterNSW, *Annual Catchment Management Report 2017-18; Sydney Catchment Area*, undated.

⁴⁸⁸ Email dated 30 November 2018 from WaterNSW to IPART (re: *WaterNSW Annual report on Catchment Management relevant to the Declared Catchment Areas - Section 2.1.3*) (attachment to D2019/19304).

⁴⁸⁹ WaterNSW, *Water Conservation Strategy*, undated.

⁴⁹⁰ Email dated 1 November 2018 from WaterNSW to IPART (re: *WaterNSW Water Conservation Strategy*) (D2018/110791).

⁴⁹¹ WaterNSW, *Local Water Utility Releases; Review of the Monitoring of the Quality of Water Released to LWUs*, June 2019.

⁴⁹² Email dated 28 June 2019 from WaterNSW to IPART (re: *Clause 3.4.6 and 3.4.7 - Report - Review of Water Quality Monitoring of water released to Local Water utilities*) (D2019/66341).

⁴⁹³ WaterNSW, *Compliance and Performance Report; Performance Standards 2017-2018*, undated (D2018/77702).

⁴⁹⁴ Email dated 2 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 Sept Reporting*) (D2018/95972).

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- *Compliance and Performance Report; Environmental Management System 2017-2018*⁴⁹⁷ was submitted to IPART on 1 September 2018⁴⁹⁸ and is available on the website.
 - Customer and stakeholder relations:
 - *Compliance and Performance Report; Customer and Stakeholder Relations 2017-2018*⁴⁹⁹ was submitted to IPART on 1 September 2018⁵⁰⁰ and is available on the website.
 - Performance monitoring and reporting:
 - *IPART performance indicators*(excluding environmental)⁵⁰¹ were submitted to IPART on 2 September 2018;⁵⁰²
 - *IPART performance indicators*(environmental)⁵⁰³ were submitted to IPART on 28 September 2018;⁵⁰⁴
 - *NWI Indicator Data* (excluding environmental)⁵⁰⁵ was submitted to IPART on 31 August 2018.⁵⁰⁶
 - *NWI Indicator Data* (environmental)⁵⁰⁷ was submitted to IPART on 28 September 2018.⁵⁰⁸

It is noted that acknowledgement of receipt of some reports was included in the evidence provided, however, has not been reported.

On the basis of the above analysis of a representative sample of evidence, WaterNSW has fulfilled its reporting requirements pursuant to this obligation. A brief review of the reports reveals that the required matters have been addressed and reports have been submitted in accordance with the prescribed timelines.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

⁴⁹⁵ WaterNSW, *Compliance and Performance Report; Asset Management System 2017-2018*, 1 September 2018.

⁴⁹⁶ Email dated 1 September 2018 from WaterNSW to IPART (re: *WaterNSW Compliance and Performance report (Asset Management System)*).

⁴⁹⁷ WaterNSW, *Compliance and Performance Report; Environmental Management System 2017-2018*, September 2018 (D2018/73234).

⁴⁹⁸ Email dated 2 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 Sept Reporting*) (D2018/95972).

⁴⁹⁹ WaterNSW, *Compliance and Performance Report; Customer and Stakeholder Relations 2017-2018*, undated (D2018/77701).

⁵⁰⁰ Email dated 2 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 Sept Reporting*) (D2018/95972).

⁵⁰¹ MS Excel workbook: *Water Utility performance indicators template – IPART – 1 Sept 2018*.

⁵⁰² Email dated 2 September 2018 from WaterNSW to IPART (re: *WaterNSW 1 Sept Reporting*) (D2018/95972).

⁵⁰³ MS Excel workbook: *Environment - IPART Performance Indicators 2017-2018 - 1 Oct 2018* (D2018 96189).

⁵⁰⁴ Email dated 28 September 2018 from WaterNSW to IPART (re: *WaterNSW IPART and NWI Environment Indicator Data – 1 October 2018*) (D2019/75620).


⁵⁰⁵ MS Excel workbook: *NWI Indicator Data - Export from NPR Database - 1 Sept 2018 reporting* (D2018/95457).

⁵⁰⁶ Email dated 31 August 2018 from WaterNSW to IPART (re: *WaterNSW NWI Indicator Reporting - 1 September*) (D2018/95456).

⁵⁰⁷ MS Excel workbook: *NWI Environment Indicator Data - Export from NPR Database - 28 Sept 2018* (D2018/107337).

⁵⁰⁸ Email dated 28 September 2018 from WaterNSW to IPART (re: *WaterNSW IPART and NWI Environment Indicator Data – 1 October 2018*) (D2019/75620).

Table 3.32 Reporting in accordance with this Licence and the Reporting Manual (sub-clause 7.2.2)

Sub-clause	Requirement	Compliance Grade
7.2.2	Water NSW must maintain sufficient record systems that enable it to report accurately in accordance with clause 7.2.1.	

Compliant

Risk

Failure to comply with this obligation presents a moderate level of risk in respect of WaterNSW’s operational performance. The ability to accurately measure performance against specified indicators, and to otherwise report on performance is a key tool in assessing the effectiveness of a utility’s operations.

Target for Full Compliance

Evidence that WaterNSW maintains sufficient records to enable it to report accurately in accordance with sub-clause 7.2.1.

Obligation

This obligation requires WaterNSW to maintain sufficient record systems to report accurately in respect of the matters identified in clause 7.2.1, and to do so in accordance with the Reporting Manual.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Information Assurance Framework*, June 2018.
- WaterNSW, *Annual Water Quality Monitoring Report 2017-18; Sydney Catchment Area*, undated.
- MS Excel workbook: *Timeline for AWQMR 2018-19 Preparation*.
- MS Excel workbook: *Non-Complying Water Orders 2018-19*.
- MS Excel workbook: *Electricity usage data FY 2018/2019* (D2019 3348).
- MS Excel workbook: *Electronic File_100000257152_01072019_205223*.
- Document: *Origin invoice_100000257152_01072019_205223*.
- D2019/3348 - Electricity usage data FY 2018/2019.
- D2018/1069- Electricity usage data FY 2017 2018 – WaterNSW.
- D2019/11182 - WaterNSW NWI Audit - Operational Audit 2018 - Final Report.
- D2019/86109 Copy of CD2018/85 Information Assurance Framework.
- D2018/108468 IAF review document AWQMR.

Summary of reasons for grade

Based on review of the record systems and extraction processes used to prepare a sample of reports/derive reported values, it is apparent that WaterNSW has a robust record management system and processes are in place to enable it to report accurately in accordance with the requirements of clause 7.2.1 and the Reporting Manual.

Accordingly, WaterNSW is assessed to have demonstrated compliance with this obligation.

Discussion and notes

Overview:

The ISO standards against which WaterNSW's Quality, Environmental and Asset Management Systems are certified all require the accredited organisation to maintain an effective means of managing the information/records required for the organisation to operate. As WaterNSW's management systems are all certified as being compliant with the relevant standard, it can be assumed that it has such record systems in place.

Notwithstanding, to assess compliance with this obligation, the auditor reviewed the process used to derive reports/reported values in respect of the following:

- Annual Report on Water Quality Monitoring (relevant to Declared Catchment Areas); and
- Water Supplied Performance Standards (as reported pursuant to clause 4.2 of the Licence);
- IPART Indicators Nos W1, W2 and E2.

WaterNSW advised that it maintains an *Information Assurance Framework*⁵⁰⁹ to ensure confidence in the accuracy and validity of information reported. Compilers are required to describe sources of information, any analysis and possible sources of inaccuracy. A checker and approver review this information and provide details of any additional checking or validation required before sign off.

Annual Report on Water Quality Monitoring:

The *Annual Water Quality Monitoring Report*⁵¹⁰ presents the results of the water quality monitoring program. It consolidates and analyses water quality data, details responses to water quality events and examines trends for Declared Catchment areas.

The water quality monitoring program sets out all requirements for monitoring undertaken in the catchments, in storages, at dam walls, and within the distribution system. In 2018/19 all sampling was undertaken by contractors.

Raw data originates either from automated sampling devices or samples taken by technical staff. Chain of custody records are maintained for traceability purposes.

Relevant quality assurance/control processes include:

- the sampling process operates under a quality system with documented procedures;
- duplicate samples are often taken to provide data verification;
- laboratories are quality certified and NATA accredited; they implement quality assured testing processes;
- blank (positive and negative) samples are also used for test verification purposes.

Test results are compiled into the Water Quality Database. Automated flags identify any errors in data entry and exceptions, or if there are any changes to uploaded data. Data amendment is limited to system administrators; a ticket is raised in respect of any information that is to be changed. These measures ensure quality control and data integrity throughout the process.

Preparation of the *Annual Water Quality Monitoring Report*, which is to be provided to IPART and NSW Health by 30 November each year, commences in June. A detailed task list/timeline⁵¹¹ identifies all the activities to be undertaken, grouped by compilation process, including: agree on governance structure; annual data analysis; trend analysis (10 years of data); incidents events data/information; draft report; final report; report ready for IPART/NSW Health.

⁵⁰⁹ WaterNSW, *Information Assurance Framework*, June 2018.

⁵¹⁰ WaterNSW, *Annual Water Quality Monitoring Report 2017-18; Sydney Catchment Area*, undated.

⁵¹¹ MS Excel workbook: *Timeline for AWQMR 2018-19 Preparation*.

WaterNSW provided a copy of the Information Assurance Framework checklist in respect of the 2017/18 report. This indicates (for example) that data/information required for preparation of the report is drawn from the Water Quality Database, Tickit and RACS (Risk, Assurance and Compliance System).

Water Supplied Performance Standards:

Supply Water Quality Performance Standard:

Performance in respect of the Supply Water Quality Performance Standard is discussed in Table 3.21. Performance measures are determined using a similar approach to that outlined above in respect of the *Annual Water Quality Monitoring Report*.

Supply Service Interruption Performance Standard:

As reported in Table 3.22, the number of service interruptions is determined using data extracted from the maintenance management system, in which all activity/works associated with a service interruption is recorded.

IPART Indicator W1:

IPART Indicator W1 is defined as: “*Percent of customers who place a Non-complying Water Order whom WaterNSW contact within one working day to rectify that order*”. WaterNSW reported that in 2018/19, 99.8% of such customers had been contacted within one working day compared to a target of 99%.

This indicator is determined by extracting data from WaterNSW’s ticketing system. All water orders are recorded in the ticketing system; those that are found to be non-complying are recorded as such together with the reason they were assessed to be non-compliant. The time that the order was received/ticket created and the time the ticket was closed, i.e. the time that the customer was contacted and the issue resolved, are both recorded (date stamped within the ticketing system), thereby enabling the elapsed time to be determined.

A report detailing all non-complying water orders for the annual reporting period is extracted from the ticketing system.⁵¹² Tickets showing non-complying orders with an elapsed time greater than 24 hours (corrected for working days, etc.) are counted and compared to the total number of non-complying orders to determine the performance for the year.

IPART Indicator W2:

IPART Indicator W2 is defined as: “*Percent of Water Orders which are Delivered within one day of the scheduled day of Delivery*”. WaterNSW reported that in 2018/19, 100% of water orders were delivered within one day of the scheduled delivery; the target performance is 99%.

This indicator is measured by the number of complaints and/or if WaterNSW identifies a delivery delay. All complaints are recorded and managed through the WaterNSW ticketing system and are categorised accordingly. A report detailing all water delivery complaints is extracted and the number of water delivery related complaints analysed to determine performance in comparison to the total number of complying orders for the year.

It is noted that for the purposes of this indicator, the number of complying water orders consists of all days where a volume of water is delivered (i.e. an order for water over four days is considered to be four water orders).

IPART Indicator E2:

IPART Indicator E2 is defined as: “*Green electricity consumption as a % of total electricity consumed by WaterNSW*”. This indicator is reported in respect of the Declared Catchment only.

⁵¹² MS Excel workbook: *Non-Complying Water Orders 2018-19*.

Electricity use data is compiled from monthly meter readings in a spreadsheet based model.⁵¹³ For electricity supplied by ERM Power, data is downloaded from an online portal;⁵¹⁴ for electricity supplied by Origin Energy, data is extracted from invoices.⁵¹⁵ Where data is sourced from an Origin Energy, the ARK (document management system) reference is recorded for traceability purposes.

It is noted that this indicator relates to the “... *total electricity consumed by Water NSW*”, which is taken to mean electricity consumed by WaterNSW and any contractors undertaking work on its behalf. It is understood that, electricity used by contractors (whether undertaking site works or office based) is recorded as part of WaterNSW’s metered use; electricity used by contractors in undertaking work away from WaterNSW sites/premises is not recorded for the purposes of this reporting obligation.

Data is recorded for each meter by NMI (National Meter Identifier). The amount of green energy purchased for each meter is determined from the ERM data extract or Origin Energy invoices. The total energy consumption and total green energy supplied is determined within the spreadsheet model, and percentage green energy determined.

Recommendations

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Supplemental information

No supplemental information is provided in respect of this obligation.

⁵¹³ MS Excel workbook: *Electricity usage data FY 20182019* (D2019 3348).

⁵¹⁴ MS Excel workbook: *Electronic File_100000257152_01072019_205223*.

⁵¹⁵ Document: *Origin invoice_100000257152_01072019_205223*.

4. Previous Recommendations

4.1 Overview

This section sets out the detailed findings in respect of the status of previous recommendations. In each case the following is provided:

- the reference number for the previous recommendation;
- the previous recommendation;
- the assessed status (Complete, Ongoing or No action taken);
- a summary of the reason for the assessed status;
- a list of the evidence reviewed in assessing the status;
- discussion of the evidence reviewed and how it demonstrates the assessed status;
- any further recommendations; and
- any identified opportunities for improvement.

4.2 Detailed Assessment of Status

4.2.1 Water Quality Management System (clause 2.1)

Table 4.1 Previous Recommendation 2016/17-03

Reference	Requirement	Status
2016/17-03	<p><i>Water Quality Management System (clause 2.1.4)</i>.⁵¹⁶</p> <p>By 30 June 2018, WaterNSW undertakes a risk assessment to determine appropriate strategies and controls to address any current reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.</p>	Completed
Anticipated completion date		
Not applicable – recommendation has been addressed.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Aerator-Mixer AM Strategy Review-Asset Class Standard</i> (D2018/55359). ▪ WaterNSW, <i>Operate Destratification Systems</i> (CD2003/62[v3]). 		
Summary of reasons for assessed status		
WaterNSW provided evidence that a risk assessment for the mixers and aerators had been undertaken and a procedure had been established to manage the identified risks. This recommendation has been completed.		
Discussion and notes		
<p>WaterNSW provided the Spreadsheet⁵¹⁷ which demonstrated that a risk assessment of reliability and failures of the mixers and aerators. The procedure <i>Operate Destratification Systems</i>⁵¹⁸ includes updated documentation associated with the appropriate strategy and controls for managing identified risks connected with the mixer and aerator assets. The procedure incorporates monitoring of the diffuser bubble pattern.</p> <p>WaterNSW stated in its response to the Audit Questionnaire that a specific maintenance task relating to aerator pipework and diffusers has now been included in the maintenance plan. The correct description of Maintenance type of “Failure Finding Task” has been updated in the Aerator - Mixer Asset Maintenance Strategy review spreadsheet.</p> <p>This recommendation has been completed.</p>		
Further recommendations		
There are no further recommendations arising in respect of this previous recommendation.		

⁵¹⁶ Recommendation originally raised in respect of clause 2.1.2 in the previous *Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017*; clause 2.1.4 is the equivalent clause in the current Licence.

⁵¹⁷ WaterNSW, *Aerator-Mixer AM Strategy Review-Asset Class Standard* (D2018/55359).

⁵¹⁸ WaterNSW, *Operate Destratification Systems* (CD2003/62[v3]).

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

Table 4.2 Previous Recommendation 2016/17-04

Reference	Requirement	Status
2016/17-04	<p><i>Water Quality Management System (clause 2.1.4):⁶</i></p> <p>By 31 December 2018, WaterNSW implements appropriate strategies and controls to address any reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.</p>	Completed
Anticipated completion date		
Not applicable – recommendation has been addressed.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Aerator-Mixer AM Strategy Review-Asset Class Standard</i> (D2018/55359). ▪ WaterNSW, <i>Operate Destratification Systems</i> (CD2003/62[v3]). 		
Summary of reasons for assessed status		
<p>WaterNSW provided evidence that strategies and controls have been implemented to address failure and reliability concerns in relation to aerators and mixers.</p> <p>This recommendation has been completed.</p>		
Discussion and notes		
<p>The <i>Risk Assessment Spreadsheet</i>⁵¹⁹ and the procedure <i>Operate Destratification Systems</i>⁵²⁰ detail the controls required to manage the failure and reliability concerns in relation to aerators and mixers.</p> <p>A <i>Work Order Record</i>⁵²¹ was provided as evidence of regular inspections of destratification systems.</p> <p>This recommendation has been completed.</p>		
Further recommendations		
There are no further recommendations arising in respect of this previous recommendation.		
Opportunities for improvement		
No opportunities for improvement have been identified in respect of this previous recommendation.		
Supplemental information		
No supplemental information is provided in respect of this previous recommendation.		

⁵¹⁹ WaterNSW, *Aerator-Mixer AM Strategy Review-Asset Class Standard* (D2018/55359).

⁵²⁰ WaterNSW, *Operate Destratification Systems* (CD2003/62[v3]).

⁵²¹ WaterNSW, *Woronora Dam Aerator (Destratification System) – 3 Monthly work completed* WO00014973.

Table 4.3 Previous Recommendation 2018-01

Reference	Requirement	Status
2018-01	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4);</i> <i>Water Supply (clause 3.2.1):</i></p> <p>By 30 September 2019, WaterNSW should review and amend its Water Quality Management System to ensure that each water category covered by the WQMS addresses each element, component and activity of the Australian Drinking Water Guidelines framework.</p>	Completed
Anticipated completion date		
Not applicable – recommendation has been addressed.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Water Quality Management System 2018_UNDER REVIEW</i> (CD2013/56v5), 2019. ▪ WaterNSW, <i>FRW Supply Water Quality Management System</i> (CD2019/129). 		
Summary of reasons for assessed status		
<p>WaterNSW has updated its WQMS to clearly identify the water categories that are covered by the WQMS. The WQMS is largely consistent with the requirements of the ADWG. Where this audit (the 2019 Operational Audit) has identified non-compliance or opportunities for improvement, a targeted recommendation or opportunity for improvement has been provided.</p>		
This recommendation has been completed.		
Discussion and notes		
<p>WaterNSW has reviewed the DWQMS which addresses the 12 elements of the ADWG Framework that adequately manages the risks to drinking water quality. WaterNSW has established an overarching <i>Water Quality Management System</i> (WQMS)⁵²² that details the categories of water that are covered by the WQMS that are consistent with the licence requirements.</p>		
<p>The <i>Fish River Water Supply Drinking Water Quality Management System</i> (FRWSS DWQMS)⁵²³ was provided as evidence of the scheme specific WQMS for the Fish River Drinking Water Scheme (FRWSS).</p>		
This recommendation has been completed.		
Further recommendations		
There are no further recommendations arising in respect of this previous recommendation.		

⁵²² WaterNSW, *Water Quality Management System 2018_UNDER REVIEW* (CD2013/56v5), 2019.

⁵²³ WaterNSW, *FRW Supply Water Quality Management System* (CD2019/129).

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

Table 4.4 Previous Recommendation 2018-02

Reference	Requirement	Status
2018-02	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4);</i> <i>Water Supply (clause 3.2.1):</i></p> <p>By 30 September 2019, WaterNSW should document its procedures and processes to manage materials and chemicals used in its system where the water is supplied for a drinking water end-use.</p>	Completed
Anticipated completion date		
Not applicable – recommendation has been addressed.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Procurement Framework</i> (CD2016/77v2), 6-Jun-19. ▪ WaterNSW, <i>Materials and Chemicals with Drinking Water Supplies Procedure</i> (CD2019/36), 2019. 		
Summary of reasons for assessed status		
<p>WaterNSW provided evidence to demonstrate that the procedures and processes for managing chemicals has been documented and covers all categories of water where drinking water is the end use.</p> <p>This recommendation has been completed.</p>		
Discussion and notes		
<p>WaterNSW provided the <i>Procurement Framework</i>⁵²⁴ which includes a section relating to protecting water quality during the procurement process. The <i>Materials and Chemicals with Drinking Water Supplies Procedure</i>⁵²⁵ has been established for the purchase and use of materials and chemicals in contact with drinking water supplies, which is referenced in the WQMS. The procedure covers water treatment chemicals, materials used in plumbing, cleaning products, firefighting chemicals, herbicides and pesticides used across all of WaterNSW water supply systems.</p> <p>Standards for the procurement of suitable materials are documented, in addition to requirements for clean-up of spills, selection of reputable suppliers, and processes for receipt of chemicals and materials. The procedure also includes a list of relevant approved chemicals.</p> <p>This recommendation has been completed.</p>		
Further recommendations		
There are no further recommendations arising in respect of this previous recommendation.		
Opportunities for improvement		
No opportunities for improvement have been identified in respect of this previous recommendation.		

⁵²⁴ WaterNSW, *Procurement Framework* (CD2016/77v2), 6-Jun-19.

⁵²⁵ WaterNSW, *Materials and Chemicals with Drinking Water Supplies Procedure* (CD2019/36), 2019.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

Table 4.5 Previous Recommendation 2018-03

Reference	Requirement	Status
2018-03	<p><i>Water Quality Management System (clauses 2.1.1, 2.1.3 and 2.1.4);</i> <i>Water Supply (clause 3.2.1):</i></p> <p>By 31 December 2019, WaterNSW should review the operational and process control procedures underpinning its Water Quality Management System and:</p> <ol style="list-style-type: none"> identify the required operational procedures from catchment to consumer for processes and activities under its control develop a plan to compile this information commence implementation of the plan and document operational procedures for all processes and activities (eg, preventive measures, operational monitoring and verification procedures and maintenance requirements), and commence staff training to ensure staff are trained and proficient to implement the new operational procedures. 	Ongoing
Anticipated completion date		
31 December 2019.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Procedures and Processes for managing Water Quality</i> (D2019/30924). ▪ WaterNSW, <i>Spreadsheet - Copy of C2c x Controls 27Sep19</i> (unknown). 		
Summary of reasons for assessed status		
<p>WaterNSW has commenced the review of procedures and has established a number of new procedures as discussed elsewhere in this audit report. As this recommendation requires all processes and activities to be captured from catchment to tap, there was insufficient evidence to audit the full extent of this recommendation.</p> <p>The recommendation is ongoing and is due to be completed by 31 December 2019.</p>		
Discussion and notes		
<p>The document, <i>Procedures and Processes for managing Water Quality</i>⁵²⁶ provides a gap analysis against the requirements of the 12 elements of the ADWG, however, does not cover all processes and activities from catchment to consumer for each of WaterNSW's water systems covered by the Licence.</p>		

⁵²⁶ WaterNSW, *Procedures and Processes for managing Water Quality* (D2019/30924).

WaterNSW provided the *Spreadsheet - Copy of C2c x Controls 27Sep19*⁵²⁷ to demonstrate that it has reviewed preventive measures from the C2C risk assessment, and links back to the *Procedures and Processes for managing Water Quality* for many of the preventive measures, but it was not possible to track where they had been captured. For example, ‘dilution/shandy’ is a preventive measure on the *Spreadsheet - Copy of C2c x Controls 27Sep19*, but it was unclear where this had been captured on the *Procedures and Processes for managing Water Quality*, and where a procedure had been identified for this.

Additionally, the recommendation includes procedures for ‘operational monitoring and verification procedures and maintenance requirements’ it is unclear if these areas have been fully reviewed.

The recommendation is ongoing and is due to be completed by 31 December 2019.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

The recommendation is ongoing and is due to be completed by 31 December 2019. The auditors suggest that WaterNSW comprehensively assess each of its water supply systems from catchment to tap, using relevant inputs, such as catchment management strategies, risk assessments, process flow diagrams (etc.) to confirm that all operational and process control procedures have been identified and that there is a plan to compile these.

⁵²⁷ WaterNSW, *Spreadsheet - Copy of C2c x Controls 27Sep19* (unknown)

Table 4.6 Previous Recommendation 2018-04

Reference	Requirement	Status
2018-04	<p><i>Water Quality Management System (clause 2.1.2):</i></p> <p>By 31 December 2019, WaterNSW should review the manner in which it conducts all water utility risk assessments to ensure it meets the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.</p>	Ongoing
Anticipated completion date		
31 December 2019.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>C2C Risk Review Process</i> (D2019/30124). ▪ WaterNSW, <i>WQ Data Review and Reporting Procedure</i> (CD2012/130v5). ▪ WaterNSW, <i>Mid-term C2C Risk Assessment 2018 - Oberon Supply</i> (unknown)(undated). ▪ WaterNSW, <i>Lithgow C2C MidTerm Review</i> (D2019 55038) (undated). ▪ WaterNSW, <i>Lithgow C2C MidTerm Review</i> (D2019 55038) (undated). ▪ WaterNSW, <i>Lake Oberon and Duckmaloi Weir WQ Report</i> (D2019/69314), Jun-19. ▪ WaterNSW, <i>Fish River Drinking Water Quality Report</i> (D2019/58942), May-19. ▪ WaterNSW, <i>FRW Supply Water Quality Management System</i> (CD2019/129). ▪ WaterNSW, <i>Lithgow C2C MidTerm Review</i> (D2019 55038) (undated). ▪ WaterNSW, <i>Mid-term C2C Risk Assessment 2018 - Oberon Supply</i> (unknown)(undated). ▪ WaterNSW, <i>C2T MidTerm Review – Oberon-Lithgow 2018</i> (unknown)(undated). 		
Summary of reasons for assessed status		
<p>WaterNSW has commenced reviewing its risk assessment process; however, the auditors found that additional actions are required to align the risk methodology with the requirements of elements 2 and 3 of the ADWG framework and the Licence obligation.</p>		
Discussion and notes		
<p>WaterNSW has reviewed the risk assessment process and documented the process in a procedure, <i>C2C Risk Review Process</i>.⁵²⁸ The procedure details the catchment to customer risk review process and includes a requirement to identify the risk review group, develop or update the schematics for each supply and to identify the data requirements needed for the review.</p> <p>The <i>C2C Risk Review Process</i> includes a requirement to assemble all relevant material pertaining to incidents, WQ data; trends; CCP performance. The <i>WQ Data Review and Reporting Procedure</i>⁵²⁹ provides guidance on extracting and reviewing data but does not link back directly to the risk assessment process. The <i>C2C Risk Review Process</i> and <i>WQ Data Review and Reporting Procedure</i> provide limited guidance on the types of catchment data, the parameters to be analysed and the</p>		

⁵²⁸ WaterNSW, *C2C Risk Review Process* (D2019/30124).

⁵²⁹ WaterNSW, *WQ Data Review and Reporting Procedure* (CD2012/130v5).

dataset that should be included in the analysis. This could be improved by detailing within the *C2C Risk Review Process* or a standalone procedure, the process for conducting a water quality data assessment for risk assessment purposes. The *Mid-term C2C Risk Assessment 2018 - Oberon Supply*⁵³⁰ report was provided to demonstrate the risk assessment process, however, evidence of an assessment of water quality data was not included or provided as evidence and it was unclear what data analysis had been undertaken to inform the risk assessment.

The risk register, *Lithgow C2C MidTerm Review*⁵³¹ was provided as evidence of a risk review that was undertaken within the audit period. During the audit interviews it was discussed that this risk assessment had been reviewed to include new hazardous events associated with the reversal of flow in the distribution system. When reviewing the risk register, the scope of the review was not documented, and it was not clear if the risk register was fully or only partially reviewed. Details of the water quality data assessment used to assess the risk were not documented. A number of *Water Quality Reports*^{532,533} were provided, however, it was unclear which of these were used to inform the risk assessment. An opportunity for improvement (OFI-WNSW-2019-02) was identified in the assessment of previous clauses to improve documentation of water quality assessments (refer Table 3.2, Table 3.3 and Table 3.4).

In reviewing evidence of the risk assessment for the Lithgow system,^{534,535,536,537} the auditors found a number of inconsistencies. Table 4 of the FRWSS DWQMS identifies a list of medium to high risks identified in the Fish River Water Supply Scheme C2C assessment process. However, when the auditors reviewed the risk register spreadsheets, the hazardous events corresponding to the following medium to high risks could not be located:

- Poor control/management of pre-chlorination causes excessive DBPs in water supply; and
- Poor control/management of filtration reduces *Cryptosporidium* treatment effectiveness which impacts drinking water supply.

Additionally, the *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (Drinking Water Quality Catchment-to-Customer Risk Assessment Report) indicates that 23 hazardous events emanated from the treatment processes, however, there are only 6 treatment hazardous events on the *Lithgow C2C MidTerm Review* and *C2T MidTerm Review – Oberon-Lithgow 2018*. Furthermore, there is no information to indicate when hazardous events were added, removed or reviewed in the risk registers. It is therefore unclear if there is another risk assessment register that covers the operation of the Duckmolo Treatment Plant, or if a large number of treatment hazardous events have been removed from the risk register.

Uncertainty is captured in the initial discussions. The *C2C Risk Review Process* and the WQMS do not discuss ‘significant risk’ but do mention risk prioritisation. The process for identifying significant risk and prioritisation of risk should be clearly set out to ensure consistency across different risk assessments. An opportunity for improvement (OFI-WNSW-2019-03) has been provided in assessment of previous clause to include identification of significant risk in the risk assessment process (refer Table 3.2 and Table 3.3).

During the review it was observed that the schematics do not include treatment processes such as destratification systems. This creates a risk that these processes could be missed in the risk assessment. Additionally, the review process and document history are not captured on the schematics.

⁵³⁰ WaterNSW, *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (unknown)(undated)

⁵³¹ WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated)

⁵³² WaterNSW, *Lake Oberon and Duckmaloi Weir W/Q Report* (D2019 69314), Jun-19

⁵³³ WaterNSW, *Fish River Drinking Water Quality Report* (D2019 58942), May-19

⁵³⁴ WaterNSW, *FRW Supply Water Quality Management System* (CD2019 129)

⁵³⁵ WaterNSW, *Lithgow C2C MidTerm Review* (D2019 55038) (undated)

⁵³⁶ WaterNSW, *Mid-term C2C Risk Assessment 2018 - Oberon Supply* (unknown)(undated)

⁵³⁷ WaterNSW, *C2T MidTerm Review – Oberon-Lithgow 2018* (unknown)(undated)

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

To further progress implementing this previous recommendation by the due date, it is suggested that WaterNSW:

- ensures that the process is applied consistently across both Declared and Non-Declared catchment areas;
 - uses the procedure for all risk assessments and risk assessment reviews undertaken, in part or in full;
 - provides guidance on the requirements for the water quality system analysis and water quality data assessment, including all sources of data that should be considered, the minimum requirements for data analysis and trending, including parameters and time periods to be analysed. The results of the system analysis and water quality data assessment should be documented for each risk assessment;
 - ensures that schematics include all treatment processes, for example destratification systems and hand over points. The schematics should be verified by field audits and/or checked by those with specific knowledge of the system; and
 - establishes document control processes for risk registers. Risk registers should be controlled and include tracking of hazardous events, and suitable document history. Following a risk assessment or review, a record of the outcomes of that process should be documented.
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4.2.2 Research on catchments (clause 2.8)

Table 4.7 Previous Recommendation 2018-05

Reference	Requirement	Status
2018-05	<p><i>Research on catchments (clause 2.8.1):</i></p> <p>By 31 December 2019, WaterNSW should explicitly identify how the research program for each Declared Catchment Area relates to catchment management and catchment health.</p>	Completed
Anticipated completion date		
Not applicable – recommendation has been addressed.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Science Program 2016-2020</i> (D2015/126524), 2016-2020. ▪ WaterNSW, <i>Science Program Overview 2019</i> (D2019/74187), 2019. 		
Summary of reasons for assessed status		
<p>WaterNSW provided evidence to demonstrate that it had identified how the Science Program relates to catchment management and catchment health for each declared catchment.</p> <p>This recommendation has been completed.</p>		
Discussion and notes		
<p>WaterNSW provided the <i>Science Program 2016-2020</i>⁵³⁸ which details the research program for each declared catchment area. A review of the Science Program is captured in the <i>Science Program Overview 2019</i>.⁵³⁹ The review includes the primary and secondary objectives of each project and details how each project relates to catchment management and catchment health as well as any other related objectives.</p> <p>This recommendation has been completed.</p>		
Further recommendations		
There are no further recommendations arising in respect of this previous recommendation.		
Opportunities for improvement		
No opportunities for improvement have been identified in respect of this previous recommendation.		
Supplemental information		
No supplemental information is provided in respect of this previous recommendation.		

⁵³⁸ WaterNSW, *Science Program 2016-2020* (D2015/126524), 2016-2020.

⁵³⁹ WaterNSW, *Science Program Overview 2019* (D2019/74187), 2019.

4.2.3 Asset management system (clause 5.1)

Table 4.8 Previous Recommendation 2018-06

Reference	Requirement	Status
2018-06	<p><i>Catchment management (clause 2.2.1); Catchment Infrastructure Works management (clause 2.4.1); Construct, maintain and operate Water Management Works (clause 3.1.1); Water Supplied Performance Standards (clause 4.2.3); Asset Management System (clause 5.1.1):</i></p> <p>By 31 December 2019, WaterNSW should revise the Asset Management System to ensure it is consistent with clause 5.1.1 in particular:</p> <ul style="list-style-type: none"> ▪ the scope accurately reflects the licence requirements including the Design Criteria, and related requirements for water supply security, robustness and reliability are adequately incorporated within the system; ▪ the correct stakeholders have been identified and that stakeholder requirements including those relating to supply interruptions are reflected; ▪ identify whether any elements of the Asset Management System do not meet the requirements and intent of the Strategic Asset Management Plan and if found, make a plan to revise the relevant elements to ensure that the Asset Management System meets the requirements and intent of the Strategic Asset Management Plan; ▪ revise the Fish River Water Supply Scheme Incident Management Plan so that it reflects stakeholder requirements; and ▪ identify if any other processes or documents for managing supply interruptions should be revised to meet stakeholder requirements and develop a plan and timeframe for revising these processes and documents. 	Completed

Anticipated completion date

31 December 2019 – as per the recommendation, subject to WaterNSW comment.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual (CD2015/436) (Version 6)*, April 2019.
- WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual (CD2015/436) (Under Review)*, August 2019.

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- WaterNSW, *Protocol for Managing Supply Interruptions in Greater Sydney* (CD2019/140) (Revision 1), July 2019.
 - Assetivity, *Asset Management Assurance Audit; WaterNSW* (Revision 1), 1 August 2019 (D2019/74052).
 - WNSW, *Asset Management Policy* (CD2015/488) (Under Review), August 2019.
 - WaterNSW, *Fish River Water Supply Scheme, Incident Management Plan* (D2018/116921) (Version 1.7), March 2019.
 - WNSW, *Water Quality Incident Management Protocol* (CD2004/183) (Version 3), April 2018.
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Summary of reasons for assessed status

WaterNSW demonstrated that it has addressed those parts of the recommendation that relate to the scope of the Asset Management System, stakeholders, revision of Fish River Water Supply Scheme Incident Management Plan and the Management of Supply Interruptions.

WaterNSW also demonstrated that has made, and is implementing, plans to revise elements of the Asset Management System deemed necessary to ensure that it meets the requirements and intent of the SAMP. Action to address recommendations arising from an Asset Management Assurance Audit are yet to be fully addressed and the development of Asset Class Strategies, which was the issue to which this part of the recommendation was primarily related, is yet to be completed; however, action is ongoing in accordance with the respective implementation plans.

On this basis, this previous recommendation is considered to have been fully addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“D2018/116921 – Fish River Water Supply Scheme Incident Management Plan March 2019. Section 5.4 updated to be consistent with Operating Protocols – Notification to LCC for any break that will have an impact on customers regardless of duration. Note some breaks do not result in an interruption to supply as customers are supplied from reservoirs.

CD2019/140 Procedure for Managing Supply Interruptions in Greater Sydney.

AMS: Strategic Asset Management Plan now explicitly states requirement to exercises its functions authorised by the Operating Licence. Functions under the Operating Licence are listed and stated as within the scope of the WNSW Asset Management System.

AMS: SAMP now includes the Design Criteria as a requirement for Stakeholders. Design Criteria listed as a key aspect of meeting the levels of service, for instance it is referenced in the Raw Water Supply Agreement and associated documentation.

AMS: Asset Management Objective associated with the Design Criteria developed.

AMS: WNSW has revised the SAMP by reviewing and expanding the Stakeholder list through consultation with multiple Business units. The Stakeholder list explicitly states the stakeholder requirements.

AMS: Supply and Service interruptions are explicitly discussed in the SAMP.

AMS: A Supply Interruptions Procedure has been developed to explicitly address managing supply interruptions.

AMS: Asset Management Consultancy, Assetivity, engaged to undertake audit. Audit conducted 13 June -21 June 2019. The Final Audit report was received on 01 August 2019. WNSW has developed a plan to address the recommendations.

FRWS Incident Management Plan to be supplied.”

The status of action in respect of this recommendation has been assessed for each part as follows:

▪ **Point 1 – Scope:**

As indicated by WaterNSW in its response, it has updated its *Strategic Asset Management Plan* (SAMP)⁵⁴⁰ to address the identified issues in respect of its Asset Management System. The SAMP is a key component of the Asset Management System, which outlines the structure and operational details of the system.

The 'listed functions' as identified in clause 1.2.1 of the Licence have now been identified verbatim in the *Strategic Asset Management Plan* (SAMP).⁵⁴¹ It is, however, noted that the SAMP does not refer to or identify functions under clauses 1.2.3 (conferred functions), 1.2.4 or 1.2.5 of the Licence.

Review of the conferred functions, as listed in Schedule A of the Licence reveals that they relate predominantly to licensing, approvals and compliance, which are unlikely to involve management of WaterNSW's assets. Some conferred functions related to metering may do so, however, it does not appear that these would involve the implementation of asset management practices. It is not readily apparent whether WaterNSW implements any functions pursuant to clauses 1.2.4 or 1.2.6; if it does not implement such functions.

As there was some uncertainty when queried about these functions during the audit interviews, as an opportunity for improvement (**OFI-WNSW-2019-17**), it is suggested that WaterNSW assesses whether or not any functions implemented pursuant to clauses 1.2.3, 1.2.4 or 1.2.5 involve the implementation of asset management practices, and if so, that they be identified within the Asset Management System.

The SAMP has also been updated to reference the Design Criteria and related requirements for water supply security, robustness and reliability. Ensuring that the water supply system is operated in accordance with the Design Criteria has been identified as one of WaterNSW's asset management objectives; ensuring that supply to customers is managed in accordance with the design criteria for security, robustness and reliability is identified as the measurement reference with monthly reporting the basis for assessment of performance.⁵⁴²

The Design Criteria has also been identified as a specific level of service requirement for Sydney Water. The SAMP acknowledges that implementation of the Design Criteria is a key aspect in meeting Sydney Water's level of service requirements, and notes that documented operating protocols and outage planning principles are used to ensure that these requirements are achieved.

▪ **Point 2 – Stakeholders:**

As indicated by WaterNSW in its response, the listing of stakeholders in the SAMP⁵⁴³ has been enhanced. For each identified Stakeholder; their role/relationship with WaterNSW, their requirements and key communication needs are identified.

The requirements of WaterNSW's customers are identified as follows (for example):

- Sydney Water – compliance with the *Design Criteria* and the *Raw Water Supply Agreement*, and ensuring that capital planning, operational and maintenance activities are compatible and supportive of the respective system operator's requirements;
- Local councils and county councils – compliance with Water Supply Agreements and *Water Management Act* licences, meeting Water Monitoring Assets Service Level Agreements, and compliance with Effluent and Camp Ground licence conditions; and

⁵⁴⁰ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019.

⁵⁴¹ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019, section 1.3.

⁵⁴² WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019, appendix E.

⁵⁴³ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Version 6), April 2019, section 1.2.

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- Stock and domestic water users – compliance with Water Sharing Plans, meeting High Security Licence service levels, compliance with the Water Management Act, and meeting Water Monitoring Assets Service Level Agreements.

Requirements are similarly identified for other users/user groups, including Industrial and Commercial water users, Irrigation corporations, Unregulated River and Groundwater users, Aboriginal cultural heritage water users, and Other customers (Regulated, small, medium and large). This demonstrates that customers, as one stakeholder category, have been fully captured in the list of identified stakeholders.

The requirements and interests of customers in respect of service interruptions has also been acknowledged in the SAMP by reference to the *Protocol for Managing Supply Interruptions in Greater Sydney*⁵⁴⁴ and the *Protocol for Managing Capture Storage Release (CSR) Interruptions* (not sighted). Review of the *Protocol for Managing Supply Interruptions in Greater Sydney* reveals that it details level of service and arrangements, including notification requirements, in relation to both planned and unplanned outages for each customer/customer group.

- **Point 3 – Alignment between Asset Management System and Strategic Asset Management Plan:**

WaterNSW referenced the audit undertaken by Assetivity⁵⁴⁵ (refer Table 3.23) in respect of this requirement. That audit, which assessed compliance with ISO 55001 taking into account comments arising from the 2018 Operational Audit, made a number of recommendations and identified a number of opportunities for improvement. WaterNSW has been addressing those recommendations and opportunities for improvement in accordance with an implementation plan; however, it has not yet fully addressed all recommendations. For example:

- the *Asset Management Policy*⁵⁴⁶ and SAMP⁵⁴⁷ have both been updated to address some issues, but are yet to be approved; the forecast completion date is currently 30 November 2019; and
- recommendations in relation to asset change management are currently under review and update with a completion date of 31 December 2019.

Furthermore, upon reviewing the 2018 Operational Audit Report, it appears that the basis for this component of the recommendation is the fact that only a small number of Asset Class Strategies were in place at the time of that audit. Although development of the Asset Class Strategies remains in progress, WaterNSW has demonstrated that an updated plan for their completion has been developed (refer Table 4.9).

On this basis, it is considered that WaterNSW has made, and is implementing, plans to revise the relevant elements of the Asset Management System to ensure that it meets the requirements and intent of the SAMP.

- **Point 4 – Revision of Fish River Water Supply Scheme Incident Management Plan:**

WaterNSW advised that it has updated the *Fish River Water Supply Scheme Incident Management Plan*,⁵⁴⁸ specifically section 5.4, to include stakeholder requirements. Review of the Plan reveals that it includes details of actions to be taken in respect of a service interruption (i.e. main break), including details of notification requirements for both minor and major incidents.

⁵⁴⁴ WaterNSW, *Protocol for Managing Supply Interruptions in Greater Sydney* (CD2019/140) (Revision 1), July 2019.

⁵⁴⁵ Assetivity, *Asset Management Assurance Audit; WaterNSW* (Revision 1), 1 August 2019 (D2019/74052).

⁵⁴⁶ WNSW, *Asset Management Policy* (CD2015/488) (Under Review), August 2019.

⁵⁴⁷ WaterNSW, *Strategic Asset Management Plan; Asset Management System Manual* (CD2015/436) (Under Review), August 2019.

⁵⁴⁸ WaterNSW, *Fish River Water Supply Scheme, Incident Management Plan* (D2018/116921) (Version 1.7), March 2019.

The notification requirements do not, however, include specific timelines for notification to customers; these are, however, detailed in the *Protocol for Managing Supply Interruptions in Greater Sydney*. As an opportunity for improvement (**OFI-WNSW-2019.18**), it is suggested that WaterNSW either includes time requirements for notifying customers of service interruptions within the *Fish River Water Supply Scheme Incident Management Plan*, or alternatively, cross references to the *Protocol for Managing Supply Interruptions in Greater Sydney*.

It is noted that the *Fish River Water Supply Scheme Incident Management Plan* also addresses water quality incidents. It includes cross references to the *Water Quality Incident Management Protocol*,⁵⁴⁹ which outlines management arrangements in respect of water quality incidents.

▪ **Point 5 – Management of Supply Interruptions:**

As indicated by WaterNSW, it has developed a *Protocol for Managing Supply Interruptions in Greater Sydney*. This protocol details level of service requirements and arrangements, including notification requirements, in relation to both planned and unplanned outages for each customer/customer group.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

The following opportunities for improvement have been identified in respect of this previous recommendation:

- **OFI-WNSW-2019-17:** It is suggested that WaterNSW assesses whether or not any functions implemented pursuant to clauses 1.2.3, 1.2.4 or 1.2.5 involve the implementation of asset management practices, and if so, that they be identified within the Asset Management System.
- **OFI-WNSW-2019.18:** It is suggested that WaterNSW either includes time requirements for notifying customers of service interruptions within the *Fish River Water Supply Scheme Incident Management Plan*, or alternatively, cross references to the *Protocol for Managing Supply Interruptions in Greater Sydney*.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁴⁹ WNSW, *Water Quality Incident Management Protocol* (CD2004/183) (Version 3), April 2018.

Table 4.9 Previous Recommendation 2018-07

Reference	Requirement	Status
2018-07	<p><i>Catchment Infrastructure Works management (clause 2.4.1); Construct, maintain and operate Water Management Works (clause 3.1.1); Asset Management System (clause 5.1.2):</i></p> <p>By 31 December 2019, WaterNSW should provide an updated plan for completion of Asset Class Standards with appropriate owners assigned to each action in the plan.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Asset Class Strategy Procedure* (CD2019/46), March 2019.
- Document: *Asset Class Strategy Template and content guide* (D2019/21771).
- Document: *Asset Class Strategies Development Plan* (D2019/79611), Revision August 2019.

Summary of reasons for assessed status

WaterNSW demonstrated that a plan for completion of its Asset Class Standards has been developed, owners assigned and due dates set. Furthermore, the plan was reviewed and updated in August 2019; at that time, WaterNSW forecast that approximately 75% of all Asset Class Strategies would be completed on or before 31 December 2019.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“[It had] *Developed a procedure for Asset Class Strategies.*

[It had] *Developed a template and content guide to ensure stakeholder requirements and asset class objectives are explicitly stated.*

The plan was initially developed in March 2019 and has subsequently been revised.”

Review of the *Asset Class Strategy Procedure*⁵⁵⁰ reveals that it provides the “specification” for an Asset Class Strategy, including details of content and the context in which it is to be used. It is noted that the term “Asset Class Strategy” is being used by WaterNSW rather than “Asset Class Standard”.

The *Asset Class Strategy Template and content guide*⁵⁵¹ is a template for use in preparing an Asset Class Strategy document, which includes specific guidance in respect of content. It is noted that it provides for the inclusion of stakeholder requirements, thereby further addressing the requirement under Recommendation 2018-06 for the Asset Management System to identify stakeholders and their requirements.

⁵⁵⁰ WaterNSW, *Asset Class Strategy Procedure* (CD2019/46), March 2019.

⁵⁵¹ Document: *Asset Class Strategy Template and content guide* (D2019/21771).

WaterNSW provided an *Asset Class Strategies Development Plan*,⁵⁵² which (as advised by WaterNSW) had initially been prepared in March 2019 and was shown to have been updated in August 2019. This *Development Plan* lists all proposed Asset Class Strategies (35No) together with status, resourcing, due date and forecast completion date (as at August 2019). Eight (8) are complete,⁵⁵³ 14 not yet started and the remainder in progress. Some are forecast to be completed ahead of due date; however, the majority have extended forecast dates.

It is noted that all Asset Class Strategies that have been commenced, and some that have not yet been commenced, are shown to have forecast completion dates on or prior to 31 December 2019. WaterNSW indicated that it is confident of meeting the forecast completion dates. Asset Class Strategies for which completion dates have not yet been nominated relate to less critical asset classes.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁵² Document: *Asset Class Strategies Development Plan* (D2019/79611), Revision August 2019.

⁵⁵³ An alternative document (a Master Plan) is deemed to satisfy the requirements of an Asset Class Strategy for the Warragamba Pipeline.

4.2.4 Customer Supply Agreements – Customers other than Sydney Water (clause 6.1)

Table 4.10 Previous Recommendation 2018-08

Reference	Requirement	Status
2018-08	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.1); Code of Practice on Payment Difficulties (clause 6.8.3):</i></p> <p>By 31 December 2019, WaterNSW should ensure that all Customer Supply Agreement templates and relevant supporting processes are reviewed to ensure:</p> <ul style="list-style-type: none"> ▪ relevant and current regulatory instruments are included, including references to the Plumbing Code of Australia, and all requirements of clause 6.1.3 and clause 6.8.3; ▪ templates are kept under regular review ▪ users of the templates are prompted to check the most up to date version of the licence and other regulatory instruments; and ▪ users of Customer Supply Agreements, including the legal representatives who review them, are trained to use the template and do not use previous agreements. 	Ongoing

Anticipated completion date

31 December 2019 – as per the recommendation, subject to WaterNSW comment.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- Document (template): *Draft Customer Supply Agreement - Bulk Water* (D2019/52602).
- Document (template): *Draft Customer Supply Agreement Off-take Other* (D2019 52614).
- Document (template): *Agreement for the Supply of Water Minor Consumer Agreement- Off-take* (D2019 52617).
- WaterNSW, *Customer Supply Agreement Procedure (Draft)* (CD2019/112), August 2019.
- MS Excel workbook: *Customer Supply Agreement Checklist – Draft 03.2019*.
- MS Excel workbook: *D2019 27567 Register of Customer Supply Agreements 03.2019* (D2019/27567).
- WaterNSW, *Project Delivery Framework; Implementation of Customer Water Supply Agreement Procedure (Draft)* (D2019/86187), August 2019.

Summary of reasons for assessed status

WaterNSW demonstrated that has undertaken work to review and update its Customer Water Supply Agreement templates. In each case they address the requirements of Licence clauses 6.1.3 and 6.8.3, and relevant regulatory instruments are now referenced in most cases (references to two

Acts of Parliament have not yet been updated).

WaterNSW has updated its *Customer Supply Agreement Procedure* to require staff to check the currency of templates (including their contents) prior to use. It has also commenced preparation of an Implementation Plan aimed at addressing the requirements of this recommendation.

As the training required pursuant to this recommendation has not yet been fully planned or implemented, action in respect of this recommendation is assessed to be ongoing.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“A Customer Supply Agreement checklist is in place along with procedures for managing the agreements.

No Agreements have renewed within the period; hence none have been updated to the new template.

A risk review has been completed for each agreement, identifying gaps and assessing business actions as a result. No further action has been taken because no agreements expire in the near future.

The new template was established and placed in ARK and created as a Controlled Document for regular review.

An Implementation plan is in draft for signoff by the business.”

The clauses referenced in the Recommendation relate to:

- clause 6.1.3 – lists the minimum provisions that must be included in the Customer Supply Agreements; and
- clause 6.8.3 – requires that details of the Code of Practice for Payment Difficulties must be included in the Customer Supply Agreements.

WaterNSW provided draft templates for three types of customer agreements, including for:

- Bulk Water Supply;
- Offtake Other Supply; and
- Minor Customer Supply.

Review of these templates confirmed that they address the requirements of both clauses 6.1.3 and 6.8.3. In the case of the Bulk Water Supply and Offtake Other Supply agreements:

- the agreements incorporate a restatement of the requirements of clause 6.1.3, with direction to the section of the agreement in which it is addressed; and
- the requirement of paragraph f) of clause 6.1.3 is addressed by specific reference to the council (to which these agreement are applicable) being: “... *constituted under the Local Government Act 1993 (LG Act) and has obligations to distribute and supply safe drinking water to its customers and other members of the public*”.

There is reference to the *Plumbing Code of Australia* (replacing NSW Plumbing and Drainage Code of Practice). Acts of Parliament are in most cases correctly referenced; however:

- *Dam Safety Act 1978* has been replaced by the *Dam Safety Act 2015*; and
- *Rural Fires Act 1987* should read *Rural Fires Act 1997* (presumably a typographic error).

There are no other references to regulatory instruments.

To ensure that the incorrect references to the *Dam Safety Act* and *Rural Fires Act* are addressed, this issue has been identified as an opportunity for improvement (**OFI-WNSW-2019.19**) for implementation as part of the process of finalising the Customer Supply Agreement templates.

The *Customer Supply Agreement Procedure*⁵⁵⁴ requires that, when a Customer Supply Agreement is being reviewed or a new Agreement is required, staff should:

- check that the correct template and most recent format is being used; and
- consult the *Customer Supply Agreement Checklist*^{555,556} to ensure that all current regulatory requirements and best practice are included. The checklist identifies each provision that needs to be included in a Customer Supply Agreement as well as listing current applicable legislation, regulatory requirements and standards/best practice.

It further indicates that the *Customer Supply Agreement Checklist* is to be reviewed annually by the Risk Assurance and Compliance team to ensure that all regulatory requirements remain current.

WaterNSW has prepared a draft *Register of Customer Supply Agreements*.⁵⁵⁷ This includes a Master List of its customers, excluding minor customers, and a worksheet in which specific requirements for each customer are to be included. A sample of entries has been included.

WaterNSW has also partially prepared an *Implementation Plan*⁵⁵⁸ that aimed at addressing the requirements of this recommendation, including training and ensuring the relevance and currency of regulatory instruments.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this previous recommendation:

- **OFI-WNSW-2019-19:** It is suggested that, in finalising the Customer Supply Agreement templates, WaterNSW undertakes a review to ensure that all relevant Acts of Parliament, specifically the current versions of the *Dam Safety Act* and *Rural Fires Act*, are correctly referenced.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁵⁴ WaterNSW, *Customer Supply Agreement Procedure* (Draft) (CD2019/112), August 2019.

⁵⁵⁵ MS Excel workbook: *Customer Supply Agreement Checklist* – Draft 03.2019.

⁵⁵⁶ In the *Customer Supply Agreement Procedure*, the *Customer Supply Agreement Checklist* is referenced as Document D2019/51111. A draft version, which will presumably be designated as Document D2019/51111 when finalised was provided to the auditors.

⁵⁵⁷ MS Excel workbook: *D2019 27567 Register of Customer Supply Agreements: 03.2019* (D2019/27567).

⁵⁵⁸ WaterNSW, *Project Delivery Framework; Implementation of Customer Water Supply Agreement Procedure* (Draft) (D2019/86187), August 2019.

Table 4.11 Previous Recommendation 2018-09

Reference	Requirement	Status
2018-09	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.2):</i></p> <p>By 1 June 2019, commence re-negotiation of the Customer Supply Agreement with Wingecarribee Council, with the intent of including water quality reporting that meets the sampling and monitoring capability of the supply system.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- Document (file note): *Wingecarribee Shire Council - notes from D365 (introduction call)* (D2019/82297).
- WaterNSW internal email dated 9 May 2019 (re: *Wingecarribee Shire Council (WSC)*).
- Email correspondence dated 30 July 2019 and follow-up dated 8 August 2019 from WaterNSW to Wingecarribee Council (re: *Operational Interface Meeting 15th August – WaterNSW*) (D2019/86420).
- Document: *File note – Meeting with Wingecarribee and Goulburn Councils 15/8/2019 at Goulburn Council* (D2019/86458).

Summary of reasons for assessed status

WaterNSW demonstrated through the provision of file notes and email correspondence that it had commenced review/re-negotiation of the Customer Supply Agreement with Wingecarribee Council, which is not due for renewal until July 2020. The need to update the water quality section of the agreement was referenced in the evidence and it is noted that a water quality subject matter expert has been involved with the initial phases of the review.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW Advised that:

“Discussions have commenced both internally and externally on this agreement.

Initial discussions with Wingecarribee have been started with an initial mark up on the proposed agreement.”

WaterNSW provided evidence that discussions were commenced prior to 30 June 2019, and are ongoing, as follows:

- File note of introductory call from WaterNSW to Wingecarribee Council on 1 May 2019.⁵⁵⁹
- WaterNSW internal email dated 9 May 2019,⁵⁶⁰ which records details of an internal meeting held to discuss the renewal of the agreement. Notes reference the need to update the water

⁵⁵⁹ Document (file note): *Wingecarribee Shire Council - notes from D365 (introduction call)* (D2019/82297).

⁵⁶⁰ WaterNSW internal email dated 9 May 2019 (re: *Wingecarribee Shire Council (WSC)*).

quality section; it is noted that a water quality subject matter expert participated in the meeting.

- Email correspondence dated 30 July 2019 and follow-up dated 8 August 2019 from WaterNSW to Wingecarribee Council noting that WaterNSW has commenced internal review of the Customer Supply Agreement, seeking input and suggesting an opportunity to meet in conjunction with a scheduled Operational Interface Meeting to be held on 15 August 2019.⁵⁶¹
- File note of meeting with Wingecarribee and Goulburn Council on 15 August 2019, which includes record of discussions and reference to email and telephone interaction with Wingecarribee Council representative on 30 July 2019 and 8 August 2019 and 8 August 2019 respectively.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁶¹ Email correspondence dated 30 July 2019 and follow-up dated 8 August 2019 from WaterNSW to Wingecarribee Council (re: *Operational Interface Meeting 15th August – WaterNSW*) (D2019/86420).

Table 4.12 Previous Recommendation 2018-10

Reference	Requirement	Status
2018-10	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clauses 6.1.2 and 6.1.3):</i></p> <p>By 31 December 2019, WaterNSW should undertake a risk-based review of Customer Supply Agreements across all types of customers (including all customers who are supplied drinking water) to ensure that the supply of water meets the terms and conditions of those agreements.</p>	Ongoing
Anticipated completion date		
31 December 2019 – as per the recommendation, subject to WaterNSW comment.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ MS Excel workbook: <i>D2019 27567 Register of Customer Supply Agreements 03.2019 (D2019/27567)</i>. 		
Summary of reasons for assessed status		
<p>WaterNSW provided a draft <i>Register of Customer Supply Agreements</i> which, in the case of some customers, identifies gaps in the provisions of the respective Water Supply Agreement. It is not apparent how this register either documents or reflects the outcomes of an assessment of the risk of ensuring that the supply of water meets the terms and conditions of the Water Supply Agreements. Furthermore, it is noted that minor customers are not included in the Master List, either individually or collectively as a group.</p> <p>On this basis, action in respect of this previous recommendation is considered to be ongoing.</p>		
Discussion and notes		
<p>In its response to the Audit Questionnaire, WaterNSW advised that:</p> <p><i>“A risk review has been completed for each agreement, identifying gaps and assessing business actions as a result. Some information received from WCP but still waiting on SO to confirm compliance to Agreement clauses from a system operations perspective.</i></p> <p><i>No further action has been taken because no agreements expire in the near future.”</i></p> <p>WaterNSW provided a draft <i>Register of Customer Supply Agreements</i>,⁵⁶² which includes a Master List of its customers, excluding minor customers, and a worksheet in which specific requirements for each customer are to be included. A sample of entries has been included.</p> <p>More specifically, the Master List provides for the inclusion of information in respect of each customer in columns headed:</p> <ul style="list-style-type: none"> ▪ <i>WaterNSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (above recommendation) – it is not apparent what information should be included in this column, which contains no entries.</i> 		

⁵⁶² MS Excel workbook: *D2019 27567 Register of Customer Supply Agreements 03.2019 (D2019/27567)*.

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- *Other gaps/ comments* – this column, which has been populated for some customers, appears to identify gaps in the provisions of the respective Water Supply Agreements, together with some comments regarding the status of the agreement.
 - *Account Manager* – an account manager is nominated for some, but not all customers.
 - *ARK Reference* – includes the document reference for the Water Supply Agreement for all customers.
 - *Expiry/ Review Date* – identifies the Water Supply Agreement expiry/review date for most, but not all customers.
 - *Other References* – includes a document/file reference for one customer/offtake.

In summary, this register (Master List) presents a summary of the status of Water Supply Agreements in place with the listed customers, together with (in some cases) an assessment of gaps in the provisions of the respective Agreement. It is not, however, apparent how this register either documents or reflects the outcomes of an assessment of the risk of ensuring that the supply of water meets the terms and conditions of the Water Supply Agreements.

Furthermore, it is noted that minor customers are not included in the Master List, either individually or collectively as a group.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

Table 4.13 Previous Recommendation 2018-11

Reference	Requirement	Status
2018-11	<p><i>Water Supply (clause 3.2.1); Customer Supply Agreements – Customers other than Sydney Water (clause 6.1.2):</i></p> <p>By 30 June 2020, WaterNSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (Recommendation 2018-10).</p>	No action taken
Anticipated completion date		
30 June 2020 – as per the recommendation, subject to WaterNSW comment.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ MS Excel workbook: <i>D2019 27567 Register of Customer Supply Agreements 03.2019 (D2019/27567)</i>. 		
Summary of reasons for assessed status		
<p>It is not apparent that a risk review required under Recommendation 2018-10 has been completed. Until the risk review has been completed, no action can be taken in respect of developing and implementing processes to address identified gaps based on the outcomes of the review.</p>		
Discussion and notes		
<p>In its response to the Audit Questionnaire, WaterNSW advised that:</p>		
<p><i>“A risk review has been completed for each agreement, identifying gaps and assessing business actions as a result. Some information received from WCP but still waiting on SO to confirm compliance to Agreement clauses from a system operations perspective.”</i></p>		
<p>As reported in Table 4.12, it is not apparent that a risk review has been completed. The auditor is of the view that, until the risk review has been completed, no action can be taken in respect of developing and implementing processes to address identified gaps based on the outcomes of the review.</p>		
Further recommendations		
<p>There are no further recommendations arising in respect of this previous recommendation.</p>		
Opportunities for improvement		
<p>No opportunities for improvement have been identified in respect of this previous recommendation.</p>		
Supplemental information		
<p>No supplemental information is provided in respect of this previous recommendation.</p>		

4.2.5 Water metering and monitoring (clause 6.3)

Table 4.14 Previous Recommendation 2018-12

Reference	Requirement	Status
2018-12	<p><i>Water metering and monitoring (clause 6.3.1):</i></p> <p>By 30 September 2019, WaterNSW should set objectives for the accuracy of water take determination with respect to billing, account management and reporting.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Determining Water Take Procedure*, May 2019 (CD2019/80).
- WaterNSW, *Water Usage Variance Report Work Instruction (Draft)*, May 2019 (D2019/32980).

Summary of reasons for assessed status

WaterNSW demonstrated that it has updated its *Determining Water Take Procedure* to identify objectives that have been set in respect of the accuracy of water take measurements. These objectives include a target measurement accuracy of $\pm 5\%$ and a materiality limit of $\pm 5\%$ as a trigger for investigation of variations in water take from one year to the next.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“WaterNSW has updated its procedure CD2019/80 to include an accuracy target of a +/- 5% tolerance of what is recorded for accurate account management, billing and reporting.

Once Regulated Quarter 4, unregulated and groundwater billing are finalised a reconciliation of assessed water take to billing will be undertaken to establish the accuracy to this clause. This is anticipated to be completed by December 31 2019 subject to bills being issued on target.”

Review of the *Determining Water Take Procedure*⁵⁶³ reveals that it includes a section in respect of accuracy, as follows:

“5. Accuracy

5.1 The accuracy of determining water take is the responsibility of the licence holder either through completing a logbook as required by their water sharing plan or having installed a water meter. Water user compliance is the licence holder’s responsibility whilst audit and enforcement of compliance with above is responsibility of NRAR. WaterNSW accuracy target is to ensure that water take assessments are within a +/-5% tolerance of what is recorded for accurate account management, billing and reporting.

5.2 Where a CFO believes that the accuracy of the water take is in question the CFO should refer this to NRAR who have this responsibility.

⁵⁶³ WaterNSW, *Determining Water Take Procedure* (CD2019/80), May 2019.

5.3 The Field Services Manager will develop a process to review usage material (+/- 15%) variances between water years and monitor customer complaints and investigate any significant issues.”

This clearly indicates that the target accuracy for water take measurement has been set at $\pm 5\%$. It also indicates that a material variance in water usage between water years is to be reviewed as such variance may be reflective of metering inaccuracy; a materiality limit of $\pm 15\%$ has been nominated, noting that there are multiple factors that may impact water use from one year to the next (e.g. drought, water allocation, change in water use).

As indicated in the above extract, WaterNSW has developed a work instruction that details the steps and processes used by the Field Services Manager to determine, investigate and report on unusual variances in licence holder water take, when compared to the previous year. The procedure notes that the minimum reporting period under this work instruction is one billing cycle as meter reads/assessment of usage is not guaranteed until such time, i.e. the end of a billing period, as indicated in WaterNSW’s advice quoted above.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

Table 4.15 Previous Recommendation 2018-13

Reference	Requirement	Status
2018-13	<p><i>Water metering and monitoring (clause 6.3.1):</i></p> <p>By 31 December 2019, WaterNSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.</p>	Ongoing
Anticipated completion date		
31 December 2019 – as per the recommendation, subject to WaterNSW comment.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ WaterNSW, <i>Determining Water Take Procedure</i>, May 2019 (CD2019/80). ▪ WaterNSW, <i>Water Usage Variance Report Work Instruction (Draft)</i>, May 2019 (D2019/32980). ▪ MS Excel workbook: <i>Water usage Assessment Tool</i> (CD2015/313). 		
Summary of reasons for assessed status		
<p>WaterNSW had advised that action in response to this recommendation is to be undertaken once Q4 billing is finalised is noted. On that basis, this recommendation is considered to remain ongoing.</p>		
Discussion and notes		
<p>In its response to the Audit Questionnaire, WaterNSW advised that:</p> <p><i>“WaterNSW has updated its procedure CD2019/80 to include an accuracy target of a +/-5% tolerance of what is recorded for accurate account management, billing and reporting.</i></p> <p><i>Once Regulated Quarter 4, unregulated and groundwater billing are finalised a reconciliation of assessed water take to billing will be undertaken to establish the accuracy to this clause. This is anticipated to be completed by December 31 2019 subject to bills being issued on target.”</i></p> <p>WaterNSW’s advice that action in response to this recommendation is to be undertaken once Q4 billing is finalised is noted. On that basis, this recommendation remains ongoing.</p> <p>Upon reviewing the 2018 Operational Audit Report, it appears that this recommendation relates to the accuracy of estimates used to determine water take in the absence of a meter (e.g. logbooks and power consumption).</p> <p>Based on discussion during the audit interviews, the auditor understood that the <i>Water usage Assessment Tool</i>⁵⁶⁴ is a tool to be used to undertake such accuracy assessment; however, upon looking more closely, it appears to be a tool for assessing water take when a meter is inoperative. The <i>Assessment Tool</i> uses actual metered data to estimate the volume of water extracted from the source during a period that the meter is inoperable.</p> <p>It is therefore not apparent, based on the information provided, how an assessment of the accuracy of water take measurement in the absence of a meter is to be undertaken.</p>		

⁵⁶⁴ MS Excel workbook: *Water usage Assessment Tool* (CD2015/313).

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

Table 4.16 Previous Recommendation 2018-14

Reference	Requirement	Status
2018-14	<p><i>Water metering and monitoring (clause 6.3.2):</i></p> <p>By 31 December 2019, WaterNSW should establish a register of ownership and responsibilities for all meters in which it has a joint interest.</p>	Completed
Anticipated completion date		
Not applicable – recommendation has been addressed.		
Evidence sighted		
<ul style="list-style-type: none"> ▪ WaterNSW response to 2019 Audit Questionnaire. ▪ DPI Office of Water, <i>Sydney Catchment Authority; Water Licences and Approvals Package</i> (D2013/95242), May 2012. ▪ MS Excel workbook, <i>Register of Council water meter contact details</i> (D2019/26854). ▪ Email dated 12 March 2019 from Shoalhaven Water to WaterNSW (re: <i>Meter calibrations</i>), including attachments (D2019/26818). 		
Summary of reasons for assessed status		
<p>WaterNSW demonstrated that it has registers in place that identify the ownership and responsibility for meters in which it has a joint interest. These include a register included in the <i>Water Licences and Approvals Package</i>, which captures all meters in the Greater Sydney area and a <i>Register of Council water meter contact details</i> which identifies ownership of meters on council supply points in the Illawarra region.</p> <p>On this basis, this previous recommendation is considered to have been addressed.</p>		
Discussion and notes		
<p>In its response to the Audit Questionnaire, WaterNSW advised that:</p> <p><i>“Review of all Greater Sydney large customer meters complete. Ownership of each meter and calibration requirements confirmed.</i></p> <p><i>Ownership of each meter is specified within the Raw Water Supply agreements, Works approvals and Customer Supply agreements.”</i></p> <p>Details of meters in the Greater Sydney area of operations are detailed in the <i>Water Licences and Approvals Package</i>,⁵⁶⁵ which details the Water Access Licences, Combined Water Supply Works and Water Use Approvals for Surface Water, and Water Supply Works Approval for Ground Water held by WaterNSW.⁵⁶⁶ The <i>Operating Protocol</i> for implementation of these water access licences and work and use approvals detailed is included as Part 4 of the package; attachment 4.5 lists all flow meters.</p> <p>Flow meter details include owner; location (description and coordinates); meter number, type make and model; and relevant SCADA details.</p>		

⁵⁶⁵ DPI Office of Water, *Sydney Catchment Authority; Water Licences and Approvals Package*, May 2012.

⁵⁶⁶ Carried over from the former Sydney Catchment Authority when WaterNSW formed.

A *Register of Council water meter contact details*⁵⁶⁷ identifies contact details for Shoalhaven Water, Wingecarribee Shire Council and Goulburn Mulwarree Council, each of which owns meters in which WaterNSW has an interest. Copies of the last three years' calibration certificates for the Shoalhaven Water meter (for example) demonstrate ownership and responsibility held by Shoalhaven Water.

Whilst the register identifies these meters by ownership and function (supply to the respective council), as an opportunity for improvement (**OFI-WNSW-2019-20**), it is suggested that WaterNSW adds to the detail captured in the *Register of Council water meter contact details* to include at least basic details (size, type and location) of the meters installed at those supply points.

WaterNSW owns and is responsible for meters installed in the Murrumbidgee Valley as part of the Murrumbidgee Metering Project. It also has responsibility for meters in the Bega Valley following the transfer (conference) of responsibilities from DPI Water to WaterNSW on 1 July 2016. Although not sighted, WaterNSW advised that it has registers of these meters; it is noted that WaterNSW holds sole responsibility for these meters.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this previous recommendation:

- **OFI-WNSW-2019-20:** It is suggested that WaterNSW adds to the detail captured in the *Register of Council water meter contact details* to include at least basic details (size, type and location) of the meters installed at those supply points.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁶⁷ MS Excel workbook, *Register of Council water meter contact details* (D2019/26854).

4.2.6 Customer advisory groups (clause 6.5)

Table 4.17 Previous Recommendation 2018-15

Reference	Requirement	Status
2018-15	<p><i>Customer advisory groups (clauses 6.5.3 and 6.5.4):</i></p> <p>By 30 September 2019, WaterNSW should ensure that a process is in place to record assessment and approval of nominations to the Customer Advisory Groups in accordance with reference to both the Customer Advisory Group Charter and requirements of the licence clause 6.5.4.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- *Customer Advisory Groups Charter*, as available on the WaterNSW website at: https://www.watarnsw.com.au/_data/assets/pdf_file/0009/127593/Customer-Advisory-Groups-Charter-2019-2022.pdf
- MS Excel workbook: *Customer Advisory Groups (CAG) - Nominations Register - 2019-2022* (D2018/124243).
- MS Excel workbook: *CAG Membership Nominations - Water Representation Analysis May 2019* (D2019/44358).

Summary of reasons for assessed status

WaterNSW demonstrated that it has a process in place to record assessment and approval of nominations to the Customer Advisory Groups. Records are maintained in two spreadsheet based registers which are used to assess each individual nominee based on nomination content, representation and relevant experience, and to assess water user group representation for each Customer Advisory Group.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“This action is complete, a register has been added to for approval of CAG membership giving greater detail on the assessment and approval process.”

It is noted that the *Customer Advisory Groups Charter*,⁵⁶⁸ as available on the WaterNSW website sets out membership selection criteria including (in summary):

- the objective of including at least one customer representative from each of the listed categories, which aligns with the requirements of Licence clause 6.5.4;
- where necessary, consideration is given to: the relative number of customers representing a nominating organisation; licence type and geographic representation; and the inclusion of an

⁵⁶⁸ *Customer Advisory Groups Charter*, as available on the WaterNSW website at: https://www.watarnsw.com.au/_data/assets/pdf_file/0009/127593/Customer-Advisory-Groups-Charter-2019-2022.pdf

alternate delegate nominee; and

- limiting each Customer Advisory Group to a maximum of fifteen members.

As noted, the first criterion addresses the requirements of Licence clause 6.5.4.

WaterNSW provided copies of two spreadsheet based registers, which are used to manage membership of the Customer Advisory Groups (CAG):

- *Customer Advisory Groups (CAG) - Nominations Register - 2019-2022* – this register lists, by individual CAG, all nominees and related information as obtained from their nomination forms, including:
 - name of nominee;
 - name of nominating organisation;
 - water user group(s) represented;
 - nominee’s details;
 - whether or not a declaration had been provided;
 - emergency contact details;
 - details of an alternative nominee (if any), whether or not a declaration had been provided and emergency contact details;
 - details of information provided in support of the nomination.

There is also provision for WaterNSW internal assessment. This includes indication as to whether the nomination had been accepted or rejected, the reason for rejection, previous involvement with the CAG and notes.

- *Membership Nominations - Water Representation Analysis May 2019* – this register lists all nominees by name and nominating organisation of each CAG. It also records whether the nominees for each CAG include representation of the various water user groups applicable to that CAG.

An overall summary of representation across all CAGs shows that the nominees cover all relevant water user groups in all CAGs. It also shows that there were sixteen nominees to the Macquarie-Cudgegong CAG, thereby exceeding the limit; one nominee was accepted as an alternate representative to another nominee representing the same organisation. A note indicates that the nominating organisation agreed to that change.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

4.2.7 Code of Practice on Payment Difficulties (clause 6.8)

Table 4.18 Previous Recommendation 2018-16

Reference	Requirement	Status
2018-16	<p><i>Code of Practice on Payment Difficulties (clause 6.8.2):</i></p> <p>By 31 December 2019, WaterNSW should review the Code of Practice on Payment Difficulties to clarify procedures for all modes of identification of hardship (ie, self, community welfare organisations, and Water NSW).</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- *Debt Management Code of Practice*, as available on the WaterNSW website at: https://www.waternsw.com.au/_data/assets/pdf_file/0018/143442/WaterNSW_Debt-Management-Code-of-Practice_2019.pdf
- Document: *Debt Management Code of Practice* (CD2017/70[V3]).

Summary of reasons for assessed status

WaterNSW demonstrated that the Debt Management Code of Practice has been updated and now documents four (4) methods by which a customer may be identified as requiring financial assistance. These include self-identification, identification by a registered welfare organisation or community group, or identification by WaterNSW either through discussions with a customer or their failure to pay their account.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“The Code of Practise on Payment Difficulties has been updated and 4 methods to identify when customers may require financial assistance have been included.

The Updated Code of Practise on Payment difficulties is available on the WaterNSW website.

There is also a plan in place to train the customer helpdesk to approve and implement payments plans of up to three months on the first call, further assisting our customers who may be experiencing hardship.”

Review of the *Debt Management Code of Practice*⁵⁶⁹ confirms that it identifies four methods of identifying when customers may require financial assistance. These, which are listed under the header “How do Customers Qualify for Affordability assistance?”, include:

- Self-selection;
- Identification by WaterNSW customer service staff during conversation with a customer;
- Notification to WaterNSW by a registered welfare organisation or community group; and

⁵⁶⁹ *Debt Management Code of Practice*, as available on the WaterNSW website at: https://www.waternsw.com.au/_data/assets/pdf_file/0018/143442/WaterNSW_Debt-Management-Code-of-Practice_2019.pdf.

-
- Identification by WaterNSW through lack of payments on an account.

WaterNSW also provided a separate copy of the *Debt Management Code of Practice*.⁵⁷⁰ It is noted that, whilst the content matter is consistent with the version published on the website, the actual wording varies in some respects (e.g. use of the term “hardship” as opposed to “affordability” in the website version). Although this version may be for internal use only, as an opportunity for improvement (**OFI-WNSW-2019-21**), it is suggested that WaterNSW takes action to ensure that all currently available versions of documents, including the *Debt Management Code of Practice*, are consistent in their content and wording.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this previous recommendation:

- **OFI-WNSW-2019-21:** It is suggested that WaterNSW takes action to ensure that all currently available versions of documents, including the *Debt Management Code of Practice*, are consistent in their content and wording.
-

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁷⁰ Document: *Debt Management Code of Practice* (CD2017/70[V3]).

Table 4.19 Previous Recommendation 2018-17

Reference	Requirement	Status
2018-17	<p><i>Code of Practice on Payment Difficulties (clause 6.8.4):</i></p> <p>By 30 September 2019, WaterNSW should include a definition of financial hardship in the Debt Management Code of Practice. Water NSW should ensure that Customer Support Officers are trained in this definition and that records are kept to support when customers are first identified as experiencing financial hardship.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- *Debt Management Code of Practice*, as available on the WaterNSW website at: https://www.watarnsw.com.au/_data/assets/pdf_file/0018/143442/WaterNSW_Debt-Management-Code-of-Practice_2019.pdf.
- Document: *Debt Management Code of Practice (CD2017/70[V3])*.
- Training records: *Training Acknowledgement 2019 - OL Section 6 - Customer and Stakeholder Relations (D2019/54224, D2019/54225, D2019/54227, D2019/57556, D2019/57562, D2019/57570 & D2019/57572)*.
- Email dated 11 October 2019 from WaterNSW to Cobbitty Consulting (re: *2019 WaterNSW Audits - Recommendations 2018-16 & 17*).

Summary of reasons for assessed status

WaterNSW demonstrated that it has included a definition of financial hardship in the *Debt Management Code of Practice*, using the term “affordability” instead of “financial hardship”. WaterNSW also demonstrated:

- through the provision of a sample of training records, that it had trained Customer Service Officers in respect of this definition; and
- through the provision of screenshots, that records are kept to support when customers are first identified as experiencing financial hardship

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“A definition of financial hardship has been applied to the Code of Practice on payment difficulties, the definition has been applied to the customer fact sheet on the website (PDF), on the main web page and also our internal document.

The Customer Helpdesk has been trained on the updated definition and will also be trained by 15 September on recognising how a customer may be experiencing hardship, this may be an overdue account or a history of late payments, or a customer verbally advising that they are experiencing hardship.

The Helpdesk will be trained to offer a payment plan or extension of up to 3 months over the phone, on the first call. This will assist our customers and allow them more time to pay their accounts with WaterNSW in the event they are experiencing hardship.”

Review of the *Debt Management Code of Practice* as published on the WaterNSW website reveals that it defines financial hardship, as follows:⁵⁷¹

“We call it affordability when customers would like to pay their water charges, but really cannot manage to do so.”

It is noted that the internal version of the *Debt Management Code of Practice*⁵⁷² uses the term “hardship” rather than “affordability”. It is considered that the term “affordability” is less negative from a customer’s perspective and is supported. In either case, the definition of financial hardship is clear.

In respect of training, a sample of eight (8) training records⁵⁷³ confirms that Customer Service Officers completed this training in late-May and early-June 2019. These records specifically indicate that training was provided in respect of the Internal Customer Hardship Procedure, including ‘Four methods of identification’ and ‘What we can offer’.

To demonstrate that records are kept to support when customers are first identified as experiencing financial hardship, WaterNSW provided screenshots showing that:⁵⁷⁴

- a ticket had been raised by a Customer Service Officer that has identified a customer requiring financial assistance;
- a copy of the account in respect of which this financial assistance was required; and
- confirmation that the payment deadline was extended in the system to support the request.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

The following opportunity for improvement has been identified in respect of this previous recommendation:

- **OFI-WNSW-2019-22:** It is suggested that WaterNSW corrects the wording in the pdf version of the *Debt Management Code of Practice* published on the website by revising the term “affordability difficulties” to read “affordability assistance”.

Supplemental information

It is noted that the *Debt Management Code of Practice* as published on the website (pdf document) appears to include incorrect wording. It is anticipated that the term “affordability difficulties” where it appears in the following extract should read “affordability assistance”:

“Affordability assistance/support

We are committed to helping customers who may require affordability difficulties to keep their water flowing.”

⁵⁷¹ *Debt Management Code of Practice*, as available on the WaterNSW website at:
https://www.waternsw.com.au/_data/assets/pdf_file/0018/143442/WaterNSW_Debt-Management-Code-of-Practice_2019.pdf

⁵⁷² Document: *Debt Management Code of Practice* (CD2017/70[V3]).

⁵⁷³ Training records: *Training Acknowledgement 2019 - OL Section 6 - Customer and Stakeholder Relations* (D2019/54224, D2019/54225, D2019/54227, D2019/57556, D2019/57562, D2019/57570 & D2019/57572).

⁵⁷⁴ Email dated 11 October 2019 from WaterNSW to Cobbitty Consulting (re: *2019 WaterNSW Audits - Recommendations 2018-16 & 17*).

It is further noted that the wording on the “Your Account And Paying Bills” website page: <https://www.waternsw.com.au/customer-service/service-and-help/my-account#stay> uses the term “affordability assistance”.

As an opportunity for improvement (**OFI-WNSW-2019-22**), it is suggested that WaterNSW corrects the wording in the pdf version of the *Debt Management Code of Practice* published on the website by revising the term “affordability difficulties” to read “affordability assistance”.

4.2.8 Internal Complaints Handling Procedure (clause 6.9)

Table 4.20 Previous Recommendation 2018-18

Reference	Requirement	Status
2018-18	<p><i>Internal Complaints Handling Procedure (clause 6.9.1):</i></p> <p>By 30 September 2019, WaterNSW should ensure that a water quality category and associated issue descriptors are added to the customer complaint issues for capturing relevant information, including information that could signal contamination of the drinking water supply.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Complaints Management Procedure (CD2007/13) (Version 5)*, March 2019.
- Email dated 11 October 2019 from WaterNSW to Cobbitty Consulting (re: *2019 WaterNSW Audits - Recommendations 2018-18 & 19*).

Summary of reasons for assessed status

WaterNSW demonstrated that a water quality category and associated issue descriptors have been added to the customer complaint issues to enable the capture of relevant information. The *Complaints Management Procedure* has also been updated to reflect Water Quality as a special category of complaint.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

- “1. *Water Quality categories have been added to the WaterNSW customer service request system to accurately capture water quality complaints.*
2. *The Complaints procedure CD2007/13 has been updated to include a Water Quality section.*”

Review of the *Complaints Management Procedure*⁵⁷⁵ confirms that Water Quality has been identified as a special complaint category. More specifically, point 5 under the header “Recording a Complaint” indicates that:

“Complaints made about water quality are a special category that carries inherent public safety risk. Again, training in Water Quality complaints will be provided to all CSO’s, to ensure they understand the levels of urgency to assign the complaint, the correct categorisation of the complaint in the Customer Helpdesk Ticketing System, and any escalation procedures that should be followed. The Customer Experience Service improvement Specialist should be notified immediately for all water quality complaints.”

WaterNSW provided a screenshot of Manage Engine, the customer helpdesk ticketing system in which complaints are recorded.⁵⁷⁶ This demonstrated that water quality is listed as a complaint category within the customer service request system.

⁵⁷⁵ WaterNSW, *Complaints Management Procedure (CD2007/13) (Version 5)*, March 2019.

Three categories are included:

- Water Quality – Drinking;
- Water Quality – Filtered; and
- Water Quality – Unfiltered.

In the case of the “Water Quality – Drinking” category (for example), there are sub-categories including algae, colour, contamination, smell, taste, supply/pressure issue, and other. The ticketing system enables identification as to whether the customer contact was a complaint, compliment, enquiry or feedback/concern.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁷⁶ Email dated 11 October 2019 from WaterNSW to Cobbitty Consulting (re: *2019 WaterNSW Audits - Recommendations 2018-18 & 19*).

Table 4.21 Previous Recommendation 2018-19

Reference	Requirement	Status
2018-19	<p><i>Internal Complaints Handling Procedure (clause 6.9.1):</i></p> <p>By 31 December 2019, WaterNSW should ensure that Customer Service Officers are trained in responding to customer complaints and issues relating to water quality, including distinguishing whether the customer knows whether they are receiving potable or non-potable water.</p>	Completed

Anticipated completion date

Not applicable – recommendation has been addressed.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- WaterNSW, *Complaints Management Procedure (CD2007/13) (Version 5)*, March 2019.
- PowerPoint presentation: *Customer Service Training; Operating Licence Section 6; Customer and Stakeholder Relations (D2019/50968)*.
- Document: D2019/86449 - Email – IPART Evidence for 6.9.1 - New mandatory training [Water Quality].
- Training records: *Training Acknowledgement 2019 - OL Section 6 - Customer and Stakeholder Relations (D2019/54224, D2019/54225, D2019/54227, D2019/57556, D2019/57562, D2019/57570 & D2019/57572)*.

Summary of reasons for assessed status

WaterNSW demonstrated, by the provision of a sample training acknowledgement records, that Customer Services Officers had completed training in respect of the handling of complaints related to water quality. They, together with all WaterNSW staff, have also been required to complete mandatory training (via e-learning) in respect of water quality.

On this basis, this previous recommendation is considered to have been addressed.

Discussion and notes

WaterNSW demonstrated that Customer Service Officers had been trained in respect of the updated Complaints Management Procedure and have also completed an e-learning module in respect of water quality.

The training presentation *Customer Service Training; Operating Licence Section 6; Customer and Stakeholder Relations*⁵⁷⁷ includes a slide focussed on water quality as a special complaint category. It:

- References the e-learning module in respect of water quality;
- Notes the requirement to distinguish between potable and non-potable water;
- Suggests questions that might be used to better understand the water quality issue to which the complaint relates; and
- Notes that, if required, water quality complaints are to be escalated in accordance with the

⁵⁷⁷ PowerPoint presentation: *Customer Service Training; Operating Licence Section 6; Customer and Stakeholder Relations (D2019/50968)*.

Water Incident Response Protocol.

A sample of eight (8) training records⁵⁷⁸ confirms that Customer Service Officers completed this training in late-May and early-June 2019. These records specifically indicate that training was provided in respect of water quality, including complaint categorisation, algae alerts and escalation procedures.

WaterNSW provided a copy of an internal notification advising all staff of the requirement to complete new mandatory training in respect of “Water Quality Awareness”; such training was to be completed by 7 October 2019.

Review of the e-learning module confirms that it provides appropriate information in respect of water quality management and water quality incidents.

Given that this training (not specifically required by the recommendation, but considered a positive action) is mandatory and WaterNSW has follow-up procedures in place to ensure the training is completed, it is assumed for the purposes of this assessment that Customer Service Offices will also have completed this training.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

Supplemental information

No supplemental information is provided in respect of this previous recommendation.

⁵⁷⁸ Training records: *Training Acknowledgement 2019 - OL Section 6 - Customer and Stakeholder Relations* (D2019/54224, D2019/54225, D2019/54227, D2019/57556, D2019/57562, D2019/57570 & D2019/57572).

4.2.9 Roles and Responsibilities with Department of Industry (clause 6.16)

Table 4.22 Previous Recommendation 2018-20

Reference	Requirement	Status
2018-20	<p><i>Roles and Responsibilities with Department of Industry (clause 6.16.1):</i></p> <p>By 31 December 2019, WaterNSW should review the roles and responsibilities in the Deed of Business Transfer (or the most recent variation of the Deed) for the conduct of the Conferred Functions specified in Schedule A of the licence, to clarify and confirm the roles and responsibilities with the Department of Industry – Water, and ensure it remains current in light of changes to the conferred functions.</p>	Ongoing

Anticipated completion date

31 December 2019 – as per the recommendation, subject to WaterNSW comment.

Evidence sighted

- WaterNSW response to 2019 Audit Questionnaire.
- Document (email): *IPART OL audit Evidence for recommendation 20*, including attachments.
- Document (email): *Operating Licence audit material*, including attachments (D2019/88435).
- Email dated 6 June 2019 from Boston Consulting Group to WaterNSW (re: *for our discussion this afternoon*), including attachment (D2019/88440).
- Letter (undated) from DPIE Water to IPART (re: *IPART Operational Audit 2019 – WaterNSW*).

Summary of reasons for assessed status

WaterNSW demonstrated through the provision of inter-agency correspondence that it commenced a review of roles and responsibilities for the conduct of the Conferred Functions specified in Schedule A of the Licence in conjunction with DOI Water/DPIE Water. This review is being undertaken as part of a Stage 2 review of the Operating Licence and a review of the *Deed of Business Transfer* between DOI Water and WaterNSW and its subsequent Variation.

The most recent correspondence from DPIE Water indicates that it is aiming to finalise the amendments to the Licence and the review of the deed by December. On that basis it is assessed that action in response to this recommendation is ongoing.

Discussion and notes

In its response to the Audit Questionnaire, WaterNSW advised that:

“WaterNSW has been in discussions with DPIE, as the Regulator with requisite authority to enact any required changes, to clarify roles and responsibilities to ensure they remain current. This includes work to progress amendments to the WaterNSW operating licence, as well as contributing to an external review of water management functions commissioned by DPIE (conducted by Boston Consulting Group). We anticipate this latter piece of work to inform DPIE in its consideration of any clarification of roles and responsibilities between the respective agencies.”

WaterNSW provided a number of documents demonstrating that it had commenced a review of roles and responsibilities for the conduct of the Conferred Functions specified in Schedule A of the Licence in conjunction with DOI Water/DPIE Water.⁵⁷⁹ This review is being undertaken as part of a Stage 2 review of the Operating Licence and a review of the *Deed of Business Transfer* between DOI Water and WaterNSW and its subsequent Variation.

The documents provided include:^{580,581,582}

- A chronology of correspondence/discussions related to the review, which identified eight inter-agency emails, four internal emails and one meeting (WaterNSW and IPART).
- Internal email correspondence seeking comment in respect of the scope of the review.
- Email correspondence dated 21 May 2019 from WaterNSW to DOI Water submitting WaterNSW's proposed revised scope for the Stage 2 Operating Licence review.
- Email correspondence dated 6 June 2019 from Boston Consulting Group to WaterNSW with background notes for meeting of same date.
- Email correspondence dated 18 July 2019 from DPIE Water to WaterNSW apologising for delayed response to 21 May 2019 correspondence and noting that: *"We would aim to finalise the amendments to the licence and the review of the deed by December"*.

These documents demonstrate that the required review of roles and responsibilities has commenced and is ongoing.

In comments provided to IPART in respect of WaterNSW's performance during the audit period, DPIE Water noted that:⁵⁸³

"DPIE Water and WaterNSW are in the process of reviewing the Deed of Business Transfer with a view to clarifying the roles and responsibilities of DPIE Water and WaterNSW in relation to the functions conferred on WaterNSW in Schedule A of the operating licence. Work is also underway to improve processes between the agencies and better define monitoring and other service requirements."

This confirms and validates the assessment that the required review is in progress.

Further recommendations

There are no further recommendations arising in respect of this previous recommendation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this previous recommendation.

⁵⁷⁹ Structural change implemented on 1 July 2019 has resulted in the functions of DOI Water (as they relate to this recommendation) being transferred to DPIE Water.

⁵⁸⁰ Document (email): *IPART OL audit Evidence for recommendation 20*, including attachments.

⁵⁸¹ Document (email): *Operating Licence audit material*, including attachments (D2019/88435).

⁵⁸² Email dated 6 June 2019 from Boston Consulting Group to WaterNSW (re: *for our discussion this afternoon*), including attachment (D2019/88440).

⁵⁸³ Letter (undated) from DPIE Water to IPART (re: *IPART Operational Audit 2019 – WaterNSW*).

Supplemental information

In the comments provided to IPART in respect of WaterNSW's performance during the audit period,⁵⁸⁴ DPIE Water provided feedback in respect of WaterNSW's performance against various aspects of the *Deed of Business Transfer*. More specifically, DPIE Water expressed some concern regarding WaterNSW's performance of its obligations in respect of:

- Referral of matters to DPIE Water for technical assessment;
- Collection of groundwater quantity and quality data, collection of groundwater metering data;
- Groundwater database and related data services;
- Controlled allocation orders; and
- Records and record management.

These issues were not investigated or assessed as part of this audit. They are, however, noted as they further demonstrate the need for a clear and shared understanding of roles and responsibilities in respect of the conferred functions.

⁵⁸⁴ Letter (undated) from DPIE Water to IPART (re: *IPART Operational Audit 2019 – WaterNSW*).

Appendix A Audit Scope

The audit scope, as defined by IPART, is included in this Appendix.

2019 operational audit scope Water NSW

2019 audit scope

This document sets out the 2019 operational audit scope for Water NSW.

This scope is based on IPART's 5-year audit program for Water NSW's 2017-2022 Operating Licence. Auditors should note any directions in the comments column of Table 2.

Audit period

The audit period is 1 July 2018 to 30 August 2019. Interviews for the audit will be held in September 2019.

Outstanding audit recommendations

Table 3 outlines outstanding audit recommendations. The auditor is required to review these recommendations to determine progress. We report on outstanding audit recommendations separately within IPART's operational audit report to the Minister.

Statement of compliance

The utility is required to provide a Statement of Compliance (SC), signed by the CEO and a Board Member, by 1 September. The SC is an exception based report that outlines any non-compliance with licence clauses during the previous financial year. It also identifies what remedial action has or is being taken with respect to these non-compliances.

The SC covers all licence clauses regardless of whether they are scheduled to be audited in that year. The SC may cause a late variation to the audit scope to allow non-compliances to be reviewed if necessary.

Interpretation

In the case of any discrepancies between the Water NSW Operating Licence 2017-2022 (licence) and the audit scope, the licence will prevail.

Table 1 Key

Requirement	Meaning
Audit/Review	Audit/review clause in 2019 audit
SC	Audit of this clause not required in the 2019 audit unless the utility's Statement of Compliance identifies a non-compliance or we become aware of other reasons to audit the clause.
NR	No requirement for audit.

Table 2 2019 Audit scope for Water NSW

Licence clause	Operating Licence obligation	2019 audit requirement	Comments for the auditor
1	Licence Context and authorisation		
1.1	Objectives of this Licence		
1.1.1	<p>This licence aims to:</p> <ul style="list-style-type: none"> a) provide transparent and auditable terms and conditions for Water NSW to lawfully undertake its activities to industry good-practice; b) recognise the interests of stakeholders within its Area of Operations; and c) impose the minimum regulatory burden on Water NSW by avoiding duplication or conflict with other regulatory instruments. <p><i>[Note: Consistent with the Act, the purpose of this Licence is to:</i></p> <ul style="list-style-type: none"> a) <i>specify the listed functions and other functions conferred upon Water NSW to which this Licence relates;</i> b) <i>authorise Water NSW to carry out the listed functions specified in this Licence and Conferred Functions;</i> c) <i>specify the areas and circumstances in which Water NSW is authorised to carry out the specified Listed Functions and Conferred Functions;</i> d) <i>set out the terms and conditions which apply to the conduct of the functions authorised by this Licence;</i> e) <i>make provision for the preparation of Operational Audits;</i> f) <i>include terms and conditions under which Water NSW is required to provide, construct, operate, manage and maintain efficient, co-ordinated and commercially viable systems and services to capture, store, release or supply water;</i> g) <i>include terms and conditions under which Water NSW is required to ensure that the systems and services meet the Performance Standards specified in this Licence in relation to water delivery, water quality, service interruptions or any other matters set out in this Licence;</i> 	NR	

Licence clause	Operating Licence obligation	2019 audit requirement	Comments for the auditor
h)	<p><i>with respect to a Declared Catchment Area – include terms and conditions under which Water NSW is required to compile indicators of the direct impact of Water NSW’s activities (including, but not limited to, the impact of energy used and waste generated) on the environment so as to provide information about its performance and enable reports to be prepared; and</i></p>		
i)	<p><i>specify other requirements as required and allowed for under the Act.</i></p>		
<p><i>In addition to sections 11 and 12 of the Act which specify matters that must be included in this Licence, sections 7, 15, 16, 21, 25, 31 and 60 of the Act provide for other terms and conditions to be included in the Licence.</i></p> <p><i>This Licence does not reproduce Water NSW’s statutory obligations in full. Water NSW’s licence obligations may be subject to other laws including the Water Management Act 2000 (NSW) and the Water Act 1912 (NSW).]</i></p>			
1.2	Licence authorisations	NR	
1.2.1	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, this Licence authorises Water NSW to undertake the following listed functions within its Area of Operations:</p> <ul style="list-style-type: none"> a) to capture and store water and to release water: <ul style="list-style-type: none"> i) to persons entitled to take the water, including release to regional towns; and ii) for any other lawful purpose, including the release of environmental water; b) to supply water to Sydney Water; c) to supply water to water supply authorities and to local councils or county councils prescribed by the Regulations; d) to supply water to persons referred to in section 7(1)(d) of the Act; e) to supply water to other persons and bodies, but under terms and conditions that prevent the person or body concerned from supplying the water for consumption by others within the State unless the person or body is authorised to do so by or under an Act; f) to construct, maintain and operate Water Management Works (including providing or constructing systems or services for supplying water); g) to protect and enhance the quality and quantity of water in Declared Catchment Areas; h) 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; 		

Licence clause	Operating Licence obligation	2019 audit requirement	Comments for the auditor
	<p>i) to undertake research on catchments generally, and in particular on the health of Declared Catchment Areas; and</p> <p>j) to undertake an educative role within the community.</p> <p><i>[Note: Clause 1.2.1 authorises all of Water NSW's listed functions referred to in section 7(1) of the Act, except for its listed function under section 7(1)(i) of the Act: to undertake flood mitigation and management. As a consequence, Water NSW may undertake flood mitigation and management only if it is authorised to do so under a different operating licence, a provision of the Act other than section 7, or under any other Act or law.]</i></p>		
1.2.2	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, this Licence authorises Water NSW, within its Area of Operations to:</p> <p>a) provide facilities or services that are necessary, ancillary or incidental to its Listed Functions; and</p> <p>b) conduct any business or activity (whether or not related to its Listed Functions) that it considers will further its objectives.</p>	SC	
1.2.3	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, this Licence authorises Water NSW, within its Area of Operations, to undertake the Conferred Functions specified in Schedule A.</p>	SC	
1.2.4	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence and to the maximum extent permissible by law, this Licence authorises Water NSW pursuant to section 15(4)(b) of the Act to exercise any function of a type referred to in section 15(2) of the Act, but only with the agreement of the Relevant Body.</p>	SC	
1.2.5	<p>Subject to any terms and conditions, areas and circumstances specified in this Licence, and to the maximum extent permissible by law, this Licence authorises Water NSW pursuant to section 31(1) of the Act, to exercise the functions set out in section 31(1) within its Area of Operations.</p>	SC	
1.2.6	<p>Despite anything in this clause 1.2, but subject to any terms and conditions, areas and circumstances specified elsewhere in this Licence, and to the maximum extent permissible by law, this Licence authorises Water NSW, pursuant to section 15(4)(a) of the Act, to carry out any of its functions outside of the State.</p>	SC	
1.2.7	<p>For the avoidance of any doubt, where this clause 1.2 authorises a function of Water NSW, that authorisation is intended to apply in respect of the Fish River Water Supply Scheme, to the maximum extent permissible by law.</p> <p><i>[Note: The intention behind clause 1.2.7 is that clauses 2.1.3-2.1.5, 3.1.1, 3.2.1, 4.2.1-4.2.3, 5.1.1, 5.1.2, 5.2.1, 5.2.2, 6.1.1-6.1.3, 6.3.1, 6.3.2, 6.5.1-6.5.5, 6.6.1-6.6.4, 6.8.1-6.8.4, 6.9.1-6.9.4, 6.10.1 and 6.10.2 apply in respect of the Fish River Water Supply Scheme, to the maximum extent permissible by law. See section 293(2) of the Water Management Act 2000 (NSW).]</i></p>	NR	

1.3	Term of this Licence					
1.3.1	The term of this Licence is 5 years from the Commencement Date.	NR				
1.4	Non-exclusive Licence					
1.4.1	This Licence does not prohibit another person from providing Services in the Area of Operations that are the same as, or similar to, the services provided by Water NSW, if the person is lawfully entitled to do so.	NR				
1.5	Making copies of this Licence available					
1.5.1	Water NSW must make this Licence available free of charge on its website for downloading by any person.	SC				
1.6	End of term review					
1.6.1	It is anticipated that a review of this Licence will commence in the first quarter of 2021 to investigate: a) whether this Licence is fulfilling its objectives; and b) any issues which have arisen during the term of this Licence, which may affect the effectiveness of this Licence, (End of Term Review)	NR				
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.	NR				
1.7	Notices					
1.7.1	Any notice or other communication given under this Licence must be made in writing addressed to the intended recipient at the address shown below or the last address notified by the recipient.	SC				
	<table border="1"> <thead> <tr> <th>Water NSW</th> <th>IPART</th> </tr> </thead> <tbody> <tr> <td>The Chief Executive Officer Water NSW Level 14, 161-169 Macquarie St Parramatta NSW 2150</td> <td>The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW Level 15, 2-24 Rawson Place Sydney NSW 2000</td> </tr> </tbody> </table>	Water NSW	IPART	The Chief Executive Officer Water NSW Level 14, 161-169 Macquarie St Parramatta NSW 2150	The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW Level 15, 2-24 Rawson Place Sydney NSW 2000	
Water NSW	IPART					
The Chief Executive Officer Water NSW Level 14, 161-169 Macquarie St Parramatta NSW 2150	The Chief Executive Officer Independent Pricing and Regulatory Tribunal of NSW Level 15, 2-24 Rawson Place Sydney NSW 2000					

2	Water Source protection and conservation		
2.1	Water Quality Management System		
2.1.1	Water NSW must maintain a Water Quality Management System in accordance with this clause 2.1.	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-01 2018-02 2018-03</p>
2.1.2	<p>With respect to Declared Catchment Areas, Water NSW must maintain a Water Quality Management System that is consistent with either:</p> <ul style="list-style-type: none"> 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. <p><i>[Note: It is generally expected that for the Declared Catchment Areas Water NSW will develop a Water Quality Management System consistent with the Australian Drinking Water Guidelines. However, where NSW Health considers appropriate, the application of those Guidelines may be amended or added to, to take account of Water NSW's circumstances and/or policy and practices within New South Wales regarding Drinking Water quality.</i></p> <p><i>It is generally expected that Water NSW will manage the Declared Catchment Areas and the associated Catchment Infrastructure Works in light of its knowledge of the whole system for the Supply of Drinking Water (including the Bulk Water Supply System associated with Declared Catchment Areas together with each system for treating, storing and supplying Drinking Water of each Customer to whom Water NSW Supplies water which is sourced from Declared Catchment Areas). That is, Water NSW should have adequate systems and processes in place to manage Bulk Water quality to its water Supply Customers, taking into account the implementation of planning and risk management across the whole Drinking Water Supply system.]</i></p>	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-04</p>

2.1.3	<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> <ul style="list-style-type: none"> i) a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW); ii) the Australian Drinking Water Guidelines; or iii) any other requirements as specified or approved by NSW Health or IPART, <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 2.1.3(a):</p> <ul style="list-style-type: none"> i) the Australian Guidelines for Water Recycling; or ii) any other requirements as specified or approved by NSW Health or IPART. <p>(a) <i>[Note: It is generally expected that Water NSW will manage the water under its control in light of its knowledge of the downstream water supply system, including that of its Customers. Therefore the Water Quality Management System should be developed in consultation with the relevant Customers to whom it Supplies water.]</i></p>	Audit	<p>We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <p>2018-01 2018-02 2018-03</p>
2.1.4	<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>	Audit	<p>We last audited this clause in 2018. We assigned a Compliant Minor Shortcomings grade in that audit.</p> <p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p> <p>Auditor should refer to the following recommendations relevant to this clause (see Table 3):</p> <p>2016-17-03 2016-17-04 2018-01 2018-02 2018-03</p>
2.1.5	<p>Water NSW must notify IPART and NSW Health, in accordance with the Reporting Manual, of any significant changes that it proposes to make to a Water Quality Management System.</p>	SC	<p>We will contact NSW Health to comment on Water NSW's performance against this clause.</p>

2.2	Catchment management		
2.2.1	Water NSW must manage and protect the Declared Catchment Areas in a manner that is consistent with its objectives and functions under the Act, the Water Quality Management System required under Clause 2.1 of this Licence, the Asset Management System required under Clause 5.1 of this Licence, and the Environmental Management System required under Clause 5.2 of this Licence.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06.
2.3	Information on the Declared Catchment Areas		
2.3.1	Water NSW must: a) reasonably cooperate with the Appointed Auditor; b) publish information collected by Water NSW on water quality relevant to Declared Catchment Areas in accordance with the Reporting Manual; <i>[Note: For the avoidance of doubt, the above reference to information collected in accordance with the Reporting Manual is a reference to Water NSW's obligations in respect of the IPART water quality H1 and H2 indicators and water quality monitoring reports in the Reporting Manual]</i> c) provide data in relation to the Catchment Health Indicators to the Appointed Auditor, in accordance with the Reporting Manual; d) monitor, record and compile data on the Environmental Indicators relevant to Declared Catchment Areas; and e) report on the Environmental Indicators in accordance with the Reporting Manual.	SC	
2.4	Catchment Infrastructure Works management		
2.4.1	Water NSW must ensure that, in Declared Catchment Areas, the Catchment Infrastructure Works are operated and managed consistently with the Design Criteria and the Asset Management System referred to in clause 5.1.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06 2018-07
2.4.2	Water NSW must, in accordance with the Reporting Manual make the Design Criteria available to the public free of charge on its website for downloading by any person.	SC	

2.5 Calculating System Yield			
2.5.1	Water NSW must recalculate the System Yield in respect of a Declared Catchment Area on the occurrence of any one or more of the following events: a) the conclusion of any drought event affecting the Declared Catchment Area; b) the commencement of any modification or augmentation to the Catchment Infrastructure Works or Customers' infrastructure, that will have a significant impact on Water NSW's Supply of water in respect of the Declared Catchment Area; c) any material change to the operating rules of the Catchment Infrastructure Works in respect of the Declared Catchment Area; or d) any material change to the Design Criteria in respect of the Declared Catchment Area.	Audit	This is the first audit of this clause in this licence period.
2.5.2	In accordance with the Reporting Manual, Water NSW must advise the Minister: 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 b) if Water NSW considers that future demand for Bulk Water may exceed the System Yield and when this exceedance might occur.	Audit	This is the first audit of this clause in this licence period.
2.5.3	As soon as practicable after advising the Minister of any changes to the System Yield under clause 2.5.2, Water NSW must, in accordance with the Reporting Manual, make details of those changes and the reasons for those changes available free of charge on its website for downloading by any person.	Audit	This is the first audit of this clause in this licence period.
2.6 Reviewing the model for the System Yield			
2.6.1	By the first quarter of 2021, Water NSW must engage a suitably qualified independent expert to: a) review its modelling and procedures for calculating the System Yield to ensure that it reflects good industry practice; b) test the robustness of the modelling, the key assumptions used in the modelling, and the process for calculating the System Yield, including the appropriate frequency of yield re-calculation and the appropriateness of the trigger events in clause 2.5.1; and c) advise Water NSW on whether it should re-calculate the System Yield based on the findings of the test conducted under clause 2.6.1(b).	NR	
2.6.2	Water NSW must consult with: a) Customers who are Supplied water from the Declared Catchment Area, including Sydney Water; b) stakeholders and regulators as agreed with, or directed by, IPART; and c) any other persons that Water NSW reasonably expects to have an interest in the review of the modelling under clause 2.6.1, regarding the review of the modelling under clause 2.6.1, and provide the results of the consultation to the suitably qualified independent expert.	NR	
2.6.3	The review of the model for the System Yield must be completed by 30 June 2021 and reported to IPART in accordance with the Reporting Manual.	NR	

2.7 Water conservation			
2.7.1	By 1 November 2018, or by a later date as approved by IPART, Water NSW must submit to IPART, a report outlining Water NSW's water conservation strategy in relation to its operations under this Licence (Water Conservation Strategy).	Audit	This is the first audit of this clause in this licence period.
2.7.2	The Water Conservation Strategy must include: a) identification and documentation of existing water conservation activities; b) a process for identifying additional options for conserving water; c) a process for comparing these options; and d) a process for selecting options for implementation.	Audit	This is the first audit of this clause in this licence period.
2.7.3	By 1 September 2019, or by a later date as approved by IPART, Water NSW must develop and submit to IPART a water conservation work program using the process set out in the Water Conservation Strategy	NR	
2.8 Research on catchments			
2.8.1	Water NSW must maintain a program of research for each Declared Catchment Area which: a) relates to catchments within that Declared Catchment Area generally and in particular their health; b) is consistent with its objectives under section 6 of the Act; and c) assists Water NSW to discharge its functions under sections 7(1)(g) and 7(1)(h) of the Act.	SC	
2.8.2	Water NSW must report on its research programs referred to in clause 2.8.1 in accordance with the Reporting Manual.	SC	
3 Bulk Water storage and transmission			
3.1 Construct, maintain and operate Water Management Works			
3.1.1	Water NSW must construct, maintain and operate its Water Management Works in accordance with its Asset Management System referred to in clause 5.1.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06 2018-07
3.2 Water Supply			
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.	SC	
3.3 CSR Water			
3.3.1	For CSR Water, Water NSW must take all reasonable steps to: a) process all Water Orders promptly and efficiently; and b) manage Water Orders to ensure water is Delivered to its Customers in a timely manner.	Audit	This is the first audit of this clause in this licence period.

3.4	Bulk Water released to Local Water Utilities for Drinking Water purposes		
3.4.1	Water NSW must maintain a register of all Local Water Utilities: a) for which Water NSW maintains a Water Allocation Account; and b) to which Water NSW releases water that will be used for the purposes of Drinking Water (Local Water Utility Customers), (LWU Register).	Audit	This is the first audit of this clause in this licence period.
3.4.2	The LWU Register must include contact details for each Local Water Utility Customer, and the Water Source and approximate location from which the Local Water Utility Customer Extracts water.	Audit	This is the first audit of this clause in this licence period.
3.4.3	Water NSW must maintain and implement a procedure for providing information to Local Water Utilities (LWU Information Request Procedure). Water NSW must follow the LWU Information Request Procedure when any Local Water Utility requests information to inform that utility's Drinking Water quality assurance program. Water NSW must maintain the LWU Information Request Procedure during the term of this Licence.	Audit	This is the first audit of this clause in this licence period.
3.4.4	Water NSW's LWU Information Request Procedure must: a) describe how a Local Water Utility is to request information; b) describe how Water NSW will respond to the request in a timely manner; and c) define any fees and charges that may be charged by Water NSW to recover reasonable costs incurred for responding to an information request, how these will be calculated, and how they are to be paid.	Audit	This is the first audit of this clause in this licence period.
3.4.5	Water NSW must make details of the LWU Information Request Procedure available free of charge on its website for downloading by any person.	Audit	This is the first audit of this clause in this licence period.
3.4.6	By 31 December 2018, Water NSW must, in consultation with NSW Health, the Local Water Utility Customers on the LWU Register and its customer advisory groups established under clause 6.5, complete a review of its water quality monitoring, of water released by Water NSW to Local Water Utilities.	Audit	This is the first audit of this clause in this licence period. We will contact NSW Health to comment on Water NSW's performance against this clause.
3.4.7	By 30 June 2019, Water NSW must provide IPART with a report detailing the outcomes of the review referred to in clause 3.4.6. The report should describe measures that were identified and the timing by which they could be implemented. Any barriers to immediate implementation of identified measures, including limitations to funding, should be outlined in the report. <i>[Note: The purpose of clause 3.4 is to ensure that there are mechanisms in place for Water NSW to share information which it currently has, or is best placed to collect with interested Local Water Utilities, where that information could usefully inform a Local Water Utility's Drinking Water quality assurance program.]</i>	Audit	This is the first audit of this clause in this licence period.
4	Performance Standards		
4.1	Requirement to meet Performance Standards		
4.1.1	Water NSW is required to ensure that its systems and services meet the Performance Standards specified in this chapter.	SC	

4.2 Water Supplied Performance Standards			
4.2.1	The Performance Standards set out in paragraphs 4.2.2 and 4.2.3 apply in respect of the Supply of water by Water NSW.	NR	
4.2.2	Water NSW must manage the quality of water Supplied to its Customers in accordance with the relevant Water Quality Management System required under clause 2.1.2 or 2.1.3 (Supply Water Quality Performance Standard).	Audit	We last audited this clause in 2018. We assigned a Compliant grade in that audit.
4.2.3	Water NSW must manage service interruptions in accordance with the Asset Management System required under clause 5.1.1 (Supply Service Interruption Performance Standard).	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06
4.3 CSR Water Performance Standards			
4.3.1	The Performance Standards set out in clause 4.3.2 - 4.3.7 apply to Water NSW with respect to CSR Water.	NR	
CSR Water Delivery Performance Standard A		SC	
4.3.2	Water NSW must ensure that: a) 99% of Customers who place a Non-complying Water Order are contacted within one working day to rectify that order; and b) this is calculated as a percentage of all Non-complying Water Orders placed in the financial year.		
CSR Water Delivery Performance Standard B		SC	
4.3.3	Water NSW must ensure that: a) 99% of Water Orders are Delivered within one day of the scheduled day of Delivery; and b) this is calculated as a percentage of all complying Water Orders placed in the financial year. <i>[Note: The scheduled day of Delivery takes into account the period of required notice specified in Water Management Work approvals, licences, or entitlements. This is measured by Complaints and/or if Water NSW identifies a Delivery delay, e.g. through its staff, systems or otherwise identifies or becomes aware of a Delivery delay.]</i>		
CSR Water Service Interruptions Performance Standard		SC	
4.3.4	Water NSW must ensure that: a) 100% of Water Orders rescheduled, are rescheduled in consultation with an affected Customer within one working day of an expected water shortage, or other delivery delay; and b) this is calculated as a percentage of all Water Orders rescheduled in the financial year due to an expected shortage or Delivery delay.		

4.3.5	<p>CSR Water Account Processing Performance Standard A</p> <p>Water NSW must ensure that no less than 90% of complying Temporary Trades within the State in the financial year are processed within five working days of Water NSW's receipt of a correct application and fee.</p>	SC	
4.3.6	<p>CSR Water Account Processing Performance Standard B</p> <p>Water NSW must ensure that no less than 90% of Interstate Temporary Trades (except to South Australia) in the financial year are processed within 10 working days of Water NSW's receipt of a correct application and fee.</p>	SC	
4.3.7	<p>CSR Water Account Processing Performance Standard C</p> <p>Water NSW must ensure that no less than 90% of Interstate Temporary Trades to South Australia in the financial year are processed within 20 working days of Water NSW's receipt of a correct application and fee.</p>	SC	

5	Organisational systems management		
5.1	Asset Management System		
5.1.1	Water NSW must at all times maintain a Management System for carrying out its functions authorised under this Licence that is consistent with the Australian Standard AS ISO 55001:2014 Asset Management – Management systems – Requirements or other standard approved by IPART on request by Water NSW (the Asset Management System).	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-06
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.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should refer to the following recommendations relevant to this clause (see Table 3): 2018-07
5.2	Environmental Management System		
5.2.1	Water NSW must at all times maintain an Environmental Management System for carrying out the functions authorised under this Licence that is consistent with the Australian/New Zealand Standard AS/NZS ISO 14001:2016: Environmental management systems – Requirements with guidance for use or other standard approved by IPART, on request by Water NSW (the Environmental Management System).	Audit	This is the first audit of this clause in this licence period.
5.2.2	Water NSW must fully implement the Environmental Management System and carry out all relevant activities in accordance with the Environmental Management System.	Audit	This is the first audit of this clause in this licence period.
6	Customer and stakeholder relations		
6.1	Customer Supply Agreements – Customers other than Sydney Water		
6.1.1	Water NSW must establish and maintain agreements with each of its Customers to whom it Supplies water (except Sydney Water), which agreements must set out the terms and conditions for the Supply of water (Customer Supply Agreements). <i>[Note: Under section 25 of the Act, Water NSW is required to enter into arrangements with Sydney Water regarding the Supply of water by Water NSW to Sydney Water. Therefore, this Licence does not regulate the Supply arrangements with Sydney Water under section 25 of the Act.]</i>	SC	
6.1.2	Water NSW must only Supply water to these Customers in accordance with the terms and conditions of these Customer Supply Agreements.	SC	

6.1.3	The terms and conditions of the Customer Supply Agreements must, at a minimum, include provisions addressing: a) the standard of water quality Supplied by Water NSW; b) the continuity of the water Supplied by Water NSW (that is, provisions relating to interruptions, disconnections and reconnections to Supply); c) any metering arrangements; d) the fees and charges to be paid by the Customers for the Supply of water to them; e) dispute resolution and Complaints handling procedures; and f) in the case of a Customer Supply Agreement with a Customer referred to in clause 1.2.1(e), terms and conditions preventing the Customer concerned from supplying the water for consumption by others within the State unless the Customer is authorised to do so by or under an Act.	SC	
6.2	Accounting for water		
6.2.1	Water NSW must maintain a Water Allocation Account for each Customer that holds a Water Licence.	Audit	This is the first audit of this clause in this licence period.
6.3	Water metering and monitoring		
6.3.1	Water NSW must determine the volume of water Extracted by, or Supplied to, each of its Customers, at least annually, for the purpose of accurate account management, billing and reporting.	SC	
6.3.2	Prior to Water NSW operating, replacing, repairing, maintaining, removing, connecting, disconnecting or otherwise modifying Metering Equipment it does not own, it must obtain the agreement of the owner of that equipment. <i>[Note: In accordance with section 31(1) of the Act and clause 1.2.5 of this Licence, Water NSW is authorised to operate, replace, repair, maintain, remove, connect, disconnect or modify Metering Equipment that Water NSW does not own. Water NSW must only exercise this authority in accordance with this condition.]</i>	SC	
6.4	Advance notification of changes to flow release patterns		
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.	SC	
6.5	Customer advisory groups		
6.5.1	Water NSW must establish and maintain area-based advisory groups representing a broad cross-section of its Customers for those areas (Customer Advisory Group).	SC	
6.5.2	Water NSW must regularly consult with the area-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).	SC	
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.	SC	

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 area and include at least one Customer representing each of the following categories (where there are Customers in this category for the area associated with the Customer Advisory Group):</p> <ul style="list-style-type: none"> a) stock and domestic water users; b) Regulated River water users; c) Unregulated River water users; d) groundwater users; e) environmental water users; f) industrial and commercial water users; g) Local Water Utilities; h) Major Utilities; i) small water users based on their Water Licence volume; j) medium water users based on their Water Licence volume; k) large water users based on their Water Licence volume ; and l) Aboriginal cultural heritage water users. 	SC	
6.5.5	<p>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.</p>	SC	
6.6 Customer Advisory Group Charter			
6.6.1	<p>Water NSW, in consultation with Customers representing all of the categories in clause 6.5.4, must for the term of this Licence, establish and maintain a Customer advisory group charter in accordance with this clause 6.6 (Customer Advisory Group Charter). Water NSW may have one or more Customer Advisory Group Charters, for different Customer Advisory Groups, as it deems appropriate.</p>	SC	
6.6.2	<p>The Customer Advisory Group Charter must address all of the following issues:</p> <ul style="list-style-type: none"> a) the role of the Customer Advisory Group; b) how members and the chair of the Customer Advisory Group will be appointed; c) the term for which members are appointed; d) information on how the Customer Advisory Group will operate; e) a description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred; f) procedures for communicating the outcomes of the Customer Advisory Groups' work to the public; g) procedures for monitoring issues raised at meetings of the Customer Advisory Groups and ensuring appropriate follow-up of those issues; h) procedures for amending the charter; and i) funding and resourcing of the Customer Advisory Groups by Water NSW. 	SC	

6.6.3	Water NSW or any member of the Customer Advisory Groups may propose any amendments to the Customer Advisory Group Charter(s). However, such amendments will not be effective until they have been approved by the relevant Customer Advisory Group.	SC	
6.6.4	Water NSW must make the Customer Advisory Group Charter available free of charge on its website for downloading by any person.	SC	
6.7	Customer Service Charter		
6.7.1	Water NSW must, in consultation with relevant Customers and/or Customer Advisory Groups, establish and maintain a Customer service charter (Customer Service Charter) in accordance with this clause 6.7. Water NSW may have one or more Customer Service Charters, for different categories of Customers, as it deems appropriate. Where Water NSW has established a Customer Supply Agreement with a Customer (or category of Customers), or where Water NSW has entered into an arrangement with Sydney Water under section 25 of the Act, a Customer Service Charter covering that Customer or category of Customers is not required.	SC	
6.7.2	The Customer Service Charter(s) must set out the mutual responsibilities of Water NSW and its Customers consistently with this Licence, the Act, the <i>Water Management Act 2000</i> (NSW), the <i>Water Act 1912</i> (NSW) and any other applicable law.	SC	
6.7.3	Water NSW must make the Customer Service Charter available free of charge on its website for downloading by any person.	SC	
6.8	Code of Practice on Payment Difficulties		
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.	SC	
6.8.2	The Code of Practice on Payment Difficulties must: <ul style="list-style-type: none"> 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; 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); 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 d) include procedures for self-identification, identification by community welfare organisations and identification by Water NSW of Customers experiencing financial hardship. 	SC	
6.8.3	Water NSW must set out details of the Code of Practice on Payment Difficulties in the Customer Service Charter, or, where a Customer Supply Agreement is established in respect of a Customer, in that Customer Supply Agreement. <i>[Note: This requirement does not apply to any arrangements with Sydney Water under section 25 of the Act.]</i>	SC	

6.8.4	Water NSW must provide, free of charge, information on the Code of Practice on Payment Difficulties: a) to Customers, except Sydney Water, at least once annually with their Bills; and b) 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 c) on its website for downloading by any person	SC	
6.9	Internal Complaints Handling Procedure		
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: Guidelines for complaints management in organizations (AS/NZS 10002:2014) or other standard approved by IPART on request by Water NSW (Internal Complaints Handling Procedure).	SC	
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.	SC	
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.	SC	
6.9.4	Water NSW must make the information concerning internal Complaints handling referred to in clause 6.9.3 available to any person, free of charge, on its website for downloading.	SC	
6.10	External dispute resolution scheme		
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.	Audit	This is the first audit of this clause in this licence period.
6.10.2	Water NSW must: 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 to any person, free of charge, on its website for downloading.	Audit	
6.11	Educative role		
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 Act, and report on its activities in accordance with the Reporting Manual.	Audit	
6.12	Code of Conduct with WIC Act Licensees		
6.12.1	Water NSW must use reasonable endeavours to cooperate with any WIC Act Licensee that seeks to establish with Water NSW a code of conduct required under a licence under the WIC Act.	SC	
6.12.2	Where the Minister administering the WIC Act has established a code of conduct under clause 25 of the WIC Regulation, Water NSW will be taken to have satisfied its obligation under clause 6.12.1 by applying the water industry code of conduct established by the Minister to the relevant WIC Act Licensee.	NR	

6.13	Memorandum of Understanding with NSW Health		
6.13.1	<p>Water NSW must:</p> <p>a) maintain a memorandum of understanding with the Secretary of the Ministry of Health entered into under section 21(1) of the Act; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.13.1(a).</p> <p><i>[Note: Clause 6.13.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	SC	We will contact NSW Health to comment on Water NSW's performance against this clause.
6.13.2	The purpose of the memorandum of understanding referred to in clause 6.13.1 is to form the basis for cooperative relationships between the parties to the memorandum of understanding and particularly to recognise the role of NSW Health in providing advice to the NSW Government in relation to water quality standards and public health, with respect to CSR Water and the Supply of water by Water NSW.	NR	
6.13.3	<p>The memorandum of understanding referred to in clause 6.13.1 must include arrangements for Water NSW to report to NSW Health information on any events, in relation to Water NSW's systems or service that might impact on public health.</p> <p><i>[Note: Clause 6.13.2 does not limit the matters which may be included in the memorandum of understanding with NSW Health.]</i></p>	SC	We will contact NSW Health to comment on Water NSW's performance against this clause.
6.13.4	Water NSW must publish on its website for downloading by any person, the memorandum of understanding maintained with NSW Health under clause 6.13.1(a).	SC	
6.14	Memorandum of Understanding with Environment Protection Authority		
6.14.1	<p>Water NSW must:</p> <p>a) maintain the memorandum of understanding with the Environment Protection Authority entered into under section 21(1) of the Act; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.14.1(a).</p> <p><i>[Note: Clause 6.14.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	SC	We will contact the Environment Protection Authority to comment on Water NSW's performance against this clause.
6.14.2	<p>The purpose of the memorandum of understanding referred to in clause 6.14.2 is to form the basis for cooperative relationships between the parties to the memorandum of understanding and particularly to recognise the role of the Environment Protection Authority as the environment regulator of New South Wales.</p> <p><i>[Note: Clause 6.14.2 does not limit the matters which may be included in the memorandum of understanding with the Environmental Protection Agency.]</i></p>	NR	
6.14.3	Water NSW must publish on its website, for downloading by any person, the memorandum of understanding maintained with the Environmental Protection Authority under clause 6.14.1(a).	NR	

6.15 Memorandum of Understanding with Department of Planning and Environment		
6.15.1	<p>Water NSW must:</p> <p>a) use its best endeavours to establish and maintain a memorandum of understanding with the Department of Planning and Environment; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.15.1(a).</p> <p><i>[Note: Clause 6.15.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	<p>SC</p> <p>We will contact the Department of Planning and Environment to check that Water NSW continues to comply with the Memorandum of Understanding.</p>
6.15.2	<p>The purpose of the memorandum of understanding referred to in clause 6.15.1 is to form the basis for a cooperative relationship between the parties to the memorandum regarding the role of Water NSW for the review and implementation of the Metropolitan Water Plan.</p> <p><i>[Note: Clause 6.15.2 does not limit the matters which may be included in the memorandum of understanding with the Department of Planning and Environment.]</i></p>	NR
6.16 Roles and Responsibilities with Department of Primary Industry		
6.16.1	<p>Water NSW must:</p> <p>a) agree in writing with the Department of Primary Industry the roles and responsibilities regarding the conduct of Conferred Functions specified in Schedule A of this Licence; and</p> <p>b) comply with the agreement established under clause 6.16.1(a).</p> <p><i>[Note: Clause 6.16.1 does not limit the persons with whom Water NSW may enter into an agreement or the matters which may be contained in the agreement.]</i></p>	<p>SC</p> <p>We will contact the Department of Primary Industry to comment on Water NSW's performance against this clause.</p>
6.16.2	<p>By 30 June 2018, Water NSW must publish on its website, for downloading by any person, a statement setting out the roles and responsibilities required under clause 6.16.1(a).</p> <p><i>[Note: The statement may also include roles and responsibilities agreed with the Water Administration Ministerial Corporation or any other relevant Government departments or agencies.]</i></p>	SC
6.17 Memorandum of Understanding with Natural Resources Access Regulator		
6.17.1	<p>Water NSW must:</p> <p>a) use its best endeavours to establish and maintain a memorandum of understanding with the Natural Resources Access Regulator; and</p> <p>b) comply with the memorandum of understanding maintained under clause 6.17.1(a).</p> <p><i>[Note: Clause 6.17.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</i></p>	<p>NR</p> <p>This is a new clause which was included in the licence on 13 February 2019.</p>
6.17.2	<p>The purpose of the memorandum of understanding referred to in clause 6.17.1 is to form the basis for an ongoing cooperative relationship between the parties to the memorandum to assist in meeting their joint responsibilities and principal objectives of water supply and compliance and enforcement.</p> <p><i>[Note: Clause 6.17.2 does not limit the matters which may be included in the memorandum of understanding with the Natural Resources Access Regulator.]</i></p>	NR

7	Performance monitoring and reporting		
7.1	Operational Audits		
7.1.1	IPART may annually, or from time to time as occasion requires, undertake, or may appoint an Auditor to undertake, an audit on Water NSW's compliance with: a) this Licence; b) the Reporting Manual; or c) any other matters required by the Minister. (Operational Audit).	NR	
7.1.2	Water NSW must provide to IPART or the Auditor all information in Water NSW's possession, or under Water NSW's custody or control, which is necessary or convenient for the conduct of the Operational Audit.	SC	
7.1.3	Without limiting clause 7.1.2, Water NSW must provide to IPART or the Auditor any information necessary or convenient for the conduct of the Operational Audit which IPART or the Auditor requests in writing, within any reasonable period of time specified by IPART or the Auditor in writing.	SC	
7.1.4	For the purpose of any Operational Audit or verifying a report on an Operational Audit, Water NSW must, within a reasonable period of time from receiving a request from IPART or the Auditor, permit IPART or the Auditor to: a) access any Works, premises or offices occupied by Water NSW; b) carry out inspections, measurements and tests on, or in relation to, any such Works, premises or offices; c) take on to any such premises, Works or offices any person or equipment necessary for the purpose of performing the Operational Audit or verifying any report on the Operational Audit; d) inspect and make copies of, and take extracts from, any books and records of Water NSW that are maintained in relation to the performance of Water NSW's obligations under this Licence (including the Reporting Manual); and e) discuss matters relevant to the Operational Audit or any report on the Operational Audit with Water NSW, including Water NSW's officers and employees. <i>[Note: Water NSW is required under section 60 of the Act to pay to the Treasurer the cost (as certified by IPART) involved in and in connection with carrying out the Operational Audit of Water NSW.]</i>	SC	
7.2	Reporting in accordance with this Licence and the Reporting Manual		
7.2.1	Water NSW must comply with its reporting obligations set out in this Licence and in the Reporting Manual, including in relation to: a) water source protection and conservation; b) Bulk Water storage and transmission; c) Performance Standards; d) organisational systems management; e) Customer and stakeholder relations; and f) performance monitoring and reporting including: i) IPART performance indicators; and ii) the National Water Initiative Performance Indicators.	Audit	This is the first audit of this clause in this licence period.
7.2.2	Water NSW must maintain sufficient record systems that enable it to report accurately in accordance with clause 7.2.1.	Audit	This is the first audit of this clause in this licence period.

7.2.3	In the case of any ambiguity in the interpretation or application of any requirements in the Reporting Manual, IPART's interpretation or assessment will prevail.	NR	
<i>[Note: The Reporting Manual identifies the details of when, what, to whom and how Water NSW must report to IPART and NSW Health. The Reporting Manual also specifies what and how reports and other information must be made publicly available.]</i>			
7.3 Provision of information to IPART and Auditor			
7.3.1	Water NSW must provide IPART or an Auditor with information relating to the performance of any of Water NSW's obligations under clause 7.2 (including providing IPART with physical and electronic access to the records required to be kept under clause 7.2) within a reasonable period of time from Water NSW receiving a request from IPART for that information.	SC	
7.3.2	Water NSW must provide IPART or an Auditor with such information as is reasonably required to enable IPART or an Auditor to conduct any review or investigation of Water NSW's obligations under this Licence within a reasonable period of time from Water NSW receiving a request from IPART for that information.	SC	
7.3.3	If Water NSW contracts out any of its activities to any person (including a subsidiary), it must take all reasonable steps to ensure that, if required by IPART, or any Auditor, any such persons provide information and do the things specified in this clause 7.3 as if that person were Water NSW.	SC	
7.3.4	Where this Licence requires Water NSW to provide information to IPART or an Auditor that is information to which: a) section 24FF of the IPART Act applies; or b) section 24FF of the IPART Act does not apply but IPART or the Auditor has agreed to treat the information as though section 24FF of the IPART Act applies to that information, Water NSW must, to the maximum extent permitted by the law, provide that information even if it is confidential.	SC	

Table 3 Recommendations / outstanding items from previous audits

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2016-17-03	Water Quality Management System clause 2.1.2 in the previous <i>Water NSW (Sydney Catchment Authority [SCA]) Operating Licence 2012-2017</i> (equivalent clause 2.1.4 in current licence)	By 30 June 2018, Water NSW undertakes a risk assessment to determine appropriate strategies and controls to address any current reliability concerns or potential failure of all such mixer or aerator assets within its portfolio. (SCA licence clause 2.1.2)	Our auditor noted that Water NSW had undertaken a workshop to identify the risks associated with its aerator assets. However, Water NSW had not fully documented appropriate strategies and controls for managing these risks, as follows: <ul style="list-style-type: none"> ▼ there is no planned maintenance task relating to aerator pipework and diffusers ▼ Water NSW inaccurately referenced condition based maintenance as a maintenance strategy as Water NSW does not currently undertake any condition based maintenance for the diffusers and pipework ▼ Water NSW had not documented the operational control to monitor the diffuser bubble pattern. 	Auditor to check completeness.
2016-17-04	Water Quality Management System clause 2.1.2 in the previous <i>Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017</i> (equivalent clause 2.1.4 in current licence)	By 31 December 2018, Water NSW implements appropriate strategies and controls to address any reliability concerns or potential failure of all such mixer or aerator assets within its portfolio.	This recommendation is continuing until Water NSW has completed Recommendation 2016-17-03. The appropriate strategies and controls can be implemented after they have first been determined/documented.	Auditor to check completeness.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2018-01	<p>Water Quality Management System</p> <ul style="list-style-type: none"> ▼ clause 2.1.1 ▼ clause 2.1.3 ▼ clause 2.1.4 <p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 	By 30 September 2019, Water NSW should review and amend its Water Quality Management System to ensure that each water category covered by the WQMS addresses each element, component and activity of the Australian Drinking Water Guidelines framework.	New <u>priority</u> recommendation from 2018 audit.	<p>Auditor to check progress noting that the due date is outside of this audit period.</p> <p>Addressing this recommendation should improve Water NSW's compliance with clause 2.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 2.1.1.</p>
2018-02	<p>Water Quality Management System</p> <ul style="list-style-type: none"> ▼ clause 2.1.1 ▼ clause 2.1.3 ▼ clause 2.1.4 <p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 	By 30 September 2019, Water NSW should document its procedures and process to manage materials and chemicals used in its system where the water is supplied for a drinking water end-use.	New <u>priority</u> recommendation from 2018 audit.	<p>Auditor to check progress noting that the due date is outside of this audit period.</p> <p>Addressing this recommendation should improve Water NSW's compliance with clause 2.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 2.1.1.</p>
2018-03	<p>Water Quality Management System</p> <ul style="list-style-type: none"> ▼ clause 2.1.1 ▼ clause 2.1.3 ▼ clause 2.1.4 <p>Water Supply</p>	By 31 December 2019, Water NSW should review the operational and process control procedures underpinning its Water Quality Management System and:	New <u>priority</u> recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	▼ clause 3.2.1	<ul style="list-style-type: none"> a) identify the required operational procedures from catchment to consumer for processes and activities under its control b) develop a plan to compile this information c) commence implementation of the plan and document operational procedures for all processes and activities (eg, preventive measures, operational monitoring and verification procedures and maintenance requirements), and d) commence staff training to ensure staff are trained and proficient to implement the new operational procedures. 		Addressing this recommendation should improve Water NSW's compliance with clause 2.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 2.1.1.
2018-04	Water Quality Management System ▼ clause 2.1.2	By 31 December 2019, Water NSW should review the manner in which it conducts all water utility risk assessments to ensure it meets the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.	New <u>priority</u> recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-05	Research on catchments ▼ clause 2.8.1	By 31 December 2019, Water NSW should explicitly identify how the research program for each Declared Catchment Area relates to catchment management and catchment health.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-06	Catchment management ▼ clause 2.2.1 Catchment infrastructure works management	By 31 December 2019, Water NSW should revise the Asset Management System to ensure it is consistent with clause 5.1.1 in particular:	New <u>priority</u> recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	<ul style="list-style-type: none"> ▼ clause 2.4.1 Construct, operate and maintain Water Management Works ▼ clause 3.1.1 Water Supplied Performance Standards ▼ clause 4.2.3 Asset Management System ▼ clause 5.1.1 	<ul style="list-style-type: none"> ▼ the scope accurately reflects the licence requirements including the Design Criteria, and related requirements for water supply security, robustness and reliability are adequately incorporated within the system ▼ the correct stakeholders have been identified and that stakeholder requirements including those relating to supply interruptions are reflected ▼ identify whether any elements of the Asset Management System do not meet the requirements and intent of the Strategic Asset Management Plan and if found, make a plan to revise the relevant elements to ensure that the Asset Management System meets the requirements and intent of the Strategic Asset Management Plan ▼ revise the Fish River Water Supply Scheme Incident Management Plan so that it reflects stakeholder requirements, and ▼ identify if any other processes or documents for managing supply interruptions should be revised to meet stakeholder requirements and develop a plan and timeframe for revising these processes and documents. 		<p>Addressing this recommendation should improve Water NSW's compliance with clause 5.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 5.1.1.</p>
2018-07	<p>Catchment infrastructure works management</p> <ul style="list-style-type: none"> ▼ clause 2.4.1 	<p>By 31 December 2019, Water NSW should provide an updated plan for completion of Asset Class Standards with appropriate owners assigned to each action in the plan.</p>	<p>New recommendation from 2018 audit.</p>	<p>Auditor to check progress noting that the due date is outside of this audit period.</p>

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	<p>Construct, operate and maintain Water Management Works</p> <ul style="list-style-type: none"> ▼ clause 3.1.1 <p>Asset Management System</p> <ul style="list-style-type: none"> ▼ clause 5.1.2 			
2018-08	<p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 <p>Customer Supply Agreements – Customers other than Sydney Water</p> <ul style="list-style-type: none"> ▼ clauses 6.1.1 and 6.8.3 	<p>By 31 December 2019, Water NSW should ensure that all Customer Supply Agreement templates and relevant supporting processes are reviewed to ensure:</p> <ul style="list-style-type: none"> ▼ relevant and current regulatory instruments are included, including references to the Plumbing Code of Australia, and all requirements of clause 6.1.3 and clause 6.8.3 ▼ templates are kept under regular review ▼ users of the templates are prompted to check the most up to date version of the licence and other regulatory instruments, and ▼ users of Customer Supply Agreements, including the legal representatives who review them, are trained to use the template and do not use previous agreements. 	<p>New recommendation from 2018 audit.</p>	<p>Auditor to check progress noting that the due date is outside of this audit period.</p> <p>Addressing this recommendation should improve Water NSW's compliance with clause 6.1.1. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.1.</p>
2018-09	<p>Water Supply</p> <ul style="list-style-type: none"> ▼ clause 3.2.1 	<p>By 1 June 2019, commence re-negotiation of the Customer Supply Agreement with Wingecarribee Council, with the intent of including water quality reporting that meets the sampling and monitoring capability of the supply system.</p>	<p>New recommendation from 2018 audit.</p> <p>Recommendation related to material non-compliance.</p>	<p>Audit to check completeness.</p>

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
	Customer Supply Agreements – Customers other than Sydney Water ▼ clause 6.1.2			Addressing this recommendation should improve Water NSW's compliance with clause 6.1.2. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.2.
2018-10	Water Supply ▼ clause 3.2.1 Customer Supply Agreements – Customers other than Sydney Water ▼ clauses 6.1.2 and 6.1.3	By 31 December 2019, Water NSW should undertake a risk-based review of Customer Supply Agreements across all types of customers (including all customers who are supplied drinking water) to ensure that the supply of water meets the terms and conditions of those agreements.	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period. Addressing this recommendation should improve Water NSW's compliance with clause 6.1.2. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.2.
2018-11	Water Supply ▼ clause 3.2.1 Customer Supply Agreements – Customers other than Sydney Water ▼ clause 6.1.2	By 30 June 2020, Water NSW should develop and implement processes to address identified gaps based on the outcomes of the review of Customer Supply Agreements (Recommendation 2017-18-10).	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
				Addressing this recommendation should improve Water NSW's compliance with clause 6.1.2. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.1.2.
2018-12	Water metering and monitoring ▼ clause 6.3.1	By 30 September 2019, Water NSW should set objectives for the accuracy of water take determination with respect to billing, account management and reporting.	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period.
2018-13	Water metering and monitoring ▼ clause 6.3.1	By 31 December 2019, Water NSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.	New recommendation from 2018 audit. Recommendation related to material non-compliance.	Auditor to check progress noting that the due date is outside of this audit period. .
2018-14	Water metering and monitoring ▼ clause 6.3.2	By 31 December 2019, Water NSW should establish a register of ownership and responsibilities for all meters in which it has a joint interest.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-15	Customer advisory groups ▼ clauses 6.5.3 and 6.5.4	By 30 September 2019, Water NSW should ensure that a process is in place to record assessment and approval of nominations to the Customer Advisory Groups in accordance with reference to both the Customer Advisory Group Charter and requirements of the licence clause 6.5.4.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2018-16	Code of Practice on Payment Difficulties ▼ clause 6.8.2	By 31 December 2019, Water NSW should review the Code of Practice on Payment Difficulties to clarify procedures for all modes of identification of hardship (ie, self, community welfare organisations, and Water NSW).	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-17	Code of Practice on Payment Difficulties ▼ clause 6.8.4	By 30 September 2019, Water NSW should include a definition of financial hardship in the Debt Management Code of Practice. Water NSW should ensure that Customer Support Officers are trained in this definition and that records are kept to support when customers are first identified as experiencing financial hardship.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-18	Internal Complaints Handling Procedure ▼ clause 6.9.1	By 30 September 2019, Water NSW should ensure that a water quality category and associated issue descriptors are added to the customer complaint issues for capturing relevant information, including information that could signal contamination of the drinking water supply.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

Addressing this recommendation should improve Water NSW's compliance with clause 6.5.3. However, we did not make this recommendation as a direct result of the 2018 non-compliance assigned to clause 6.5.3.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported in audit report ^a	Guidance for 2019 audit
2018-19	Internal Complaints Handling Procedure ▼ clause 6.9.1	By 31 December 2019, Water NSW should ensure that Customer Service Officers are trained in responding to customer complaints and issues relating to water quality, including distinguishing whether the customer knows whether they are receiving potable or non-potable water.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.
2018-20	Roles and Responsibilities with Department on Industry ▼ clause 6.16.1	By 31 December 2019, Water NSW should review the roles and responsibilities in the Deed of Business Transfer (or the most recent variation of the Deed) for the conduct of the Conferred Functions specified in Schedule A of the licence, to clarify and confirm the roles and responsibilities with the Department of Industry – Water, and ensure it remains current in light of changes to the conferred functions.	New recommendation from 2018 audit.	Auditor to check progress noting that the due date is outside of this audit period.

^a **Source:** IPART, *WaterNSW Operational Audit 2018, Report to the Minister*, February 2019 Water NSW - Status of Recommendations – 2017-18 Operational Audit is not due until 31 May 2019.

Table 4 Previous field verification locations for Water NSW

Audit year	Location	Facility
2018	Burrawang	Pump station
	Nepean	Dam
	Corrimal No. 3 shaft and associated transformer yard	Declared catchment area
Water NSW (State Water Corporation) Operating Licence 2013-2018		
2016-17	Griffith - Murrumbidgee, Beavers Creek, Tombullen Creek	Weirs, Outlet
2015-16	Burrinjuck Dam	Infrastructure
2014-15	Fish River	Water Supply
2013-14	Warren	Marebone Weir fishway
	Dubbo	Burrendong Dam floating curtain
Previous Licence		
2012-13	Dubbo	Burrendong Dam
	Macquarie River near Dubbo	Metering sites
2011-12	Fish River	Water Supply
	Duckmaloi	Water Treatment Plant
2010-11	Nil	-
Water NSW (Sydney Catchment Authority) Operating Licence 2012-2017		
2016-17	Nepean	Catchment Areas
2015-16	Brayton	Catchment Areas
	Goulburn	Bradley Street Sewage Pumping Station
2014-15	Leura Falls	Catchment works
2013-14	Cataract Dam	Chemical dosing facility
		Outlet works
	Broughton's Pass	Weir
	Prospect Reservoir	Warragamba Pipeline Outlet Works Prospect RWPS (WP0903)
2012-13	Broughton's Pass to Prospect Reservoir	Upper Canal
	Prospect Reservoir	Prospect Reservoir
2011-12	Nil	-
2010-11	Nil	-

Appendix B WaterNSW Representatives

A list of WaterNSW representatives that attended audit interviews and/or field verification visits is presented in this Appendix.

Day 1 – Interview sessions

Inception Meeting

David Harris – Chief Executive Officer
Fiona Smith – Executive Manager Water and Catchment Protection
Adrian Langdon – Executive Manager System Operations
David Stockler – Executive Manager Customer and Community
Andrew George – Executive Manager Water Solutions and Market Strategy
Ronan Magaharan – Executive Manager Assets
Helen Burgess – Executive Manager, Legal, Governance, Risk and Communication

Organisational Systems management

– Asset Management System

Ronan Magaharan – Executive Manager Assets
Mark Clayton – Manager Asset Capability
Tony Pithers – Asset Systems & Information Manager
Abraham Vedamonickam – Asset Management System Specialist

Bulk Water storage and transmission

– Construct, maintain and operate Water Management Works

Ronan Magaharan – Executive Manager Assets
Adrian Langdon – Executive Manager System Operations
Andrew George – Executive Manager Water Solutions and Market Strategy
Mark Clayton – Manager Asset Capability
Tony Pithers – Asset Systems & Information Manager
Abraham Vedamonickam – Asset Management System Specialist
Dan Berry – Manager Water System Operations
David Tomlinson – Water System Operations Manager Greater Sydney
Bryan Mayhew – Manager Asset Maintenance and Services
Andrew Fraser – Manager Asset Strategy

Customer and Stakeholder relations

– Accounting for water

– External dispute resolution scheme

David Stockler – Executive Manager Customer and Community
Russell Cocks – Manager Customer Experience
Karen Isbester – Customer Systems and Reporting Manager
Keti Perez – Customer Service Centre Manager
Simon Keough – Customer Experience Service Improvement Specialist

Water Source Protection and conservation

- Calculating System Yield**
- Water conservation**

Adrian Langdon – Executive Manager System Operations

Fiona Smith – Executive Manager Water and Catchment Protection

David Tomlinson – Water System Operations Manager Greater Sydney

Mahes Maheswaran – Manager Water Modelling & Advice

Recommendations 2018-14 & 20

David Tomlinson – Water System Operations Manager Greater Sydney

Adrian Langdon – Executive Manager System Operation

Madeleine Hartley – Regulatory & Corporate Strategy Adviser

Ben Shine – Manager Government Relations & Regulatory Strategy

Andrew George – Executive Manager Water Solutions and Market Strategy

Day 2 – Interview sessions

Water Source Protection and conservation

– Water Quality Management System

Fiona Smith – Executive Manager Water and Catchment Protection
Graham Begg – Manager Water Information Systems
Louise Parsons – Water Quality Systems Manager
Ramen Charan – Water Quality Services Manager
Adrian Langdon – Executive Manager System Operations
Dan Berry – Manager Water System Operations
David Tomlinson – Water System Operations Manager Greater Sydney
Tony Pithers – Asset Systems & Information Manager
Mark Clayton – Manager Asset Capability
Abraham Vedamonickam – Asset Management System Specialist

Water Source Protection and conservation

– Catchment management

and

Customer and Stakeholder and conservation

– Educative role

Fiona Smith – Executive Manager Water and Catchment Protection
Trevor Ahale – Manager Land & Catchment Management
Alan Benson – Catchment Programs Manager
Clay Preshaw – Manager Catchment Protection
Malcolm Hughes – Manager Environment & Planning
Lisa Hamilton – Water Quality Programs Manager
Helen Burgess – Executive Manager, Legal, Governance, Risk and Communication
Debbie Low – Community Engagement & Education Manager
Caroline Dearson – Education and Visitor Services Manager
Joshua St Clair – Manager Health Safety and Environment
Evan Webb – Environmental Services Manager
Tony Pithers – Asset Systems & Information Manager
Mark Clayton – Manager Asset Capability
Abraham Vedamonickam – Asset Management System Specialist

Organisational Systems management

– Environmental Management System

Daniel Lucas – Executive Manager Safety, People and Performance

Ronan Magaharan – Executive Manager Assets

Adrian Langdon – Executive Manager System Operations

Joshua St Clair – Manager Health Safety and Environment

Evan Webb – Environmental Services Manager

Maria McElvenny – Environment and Sustainability Officer

Scott Russell – Manager Continuous Improvement

Clay Preshaw – Manager Catchment Protection

Malcolm Hughes – Manager Environment & Planning

Trevor Ahale – Manager Land and Catchment Management

Alan Benson – Catchment Programs Manager

Mark Clayton – Manager Asset Capability

Tony Pithers – Asset Systems & Information Manager

Abraham Vedamonickam – Asset Management System Specialist

Day 3 – Interview sessions

Performance Standards

– Water Supplied Performance Standards

Adrian Langdon – Executive Manager System Operations
Dan Berry – Manager Water System Operations
David Tomlinson – Water System Operations Manager Greater Sydney
Fiona Smith – Executive Manager Water and Catchment Protection
Graham Begg – Manager Water Information Systems
Louise Parsons – Water Quality Systems Manager
Ronan Magaharan – Executive Manager Assets
Mark Clayton – Manager Asset Capability
Tony Pithers – Asset Systems & Information Manager
Abraham Vedamonickam – Asset Management System Specialist

Performance Monitoring and reporting

– Reporting in accordance with this Licence and the Reporting Manual

Adrian Langdon – Executive Manager System Operations – Water System Operations
Fiona Smith – Executive Manager Water and Catchment Protection
David Stockler – Executive Manager – Customer and Community
Dan Berry – Manager Water System Operations
David Tomlinson – Water System Operations Manager Greater Sydney
Graham Begg – Manager Water Information Systems
Mahes Maheswaran – Manager Water Modelling & Advice

NWI Indicators – Water Resources

David Tomlinson – Water System Operations Manager Greater Sydney

Day 3 – Site briefing

Woronora Dam/Lake Woronora Catchment

Douglas Fagerstrom – Regional Manager – Greater Sydney
Brian Mayhew – Manager Asset Maintenance & Services
Clay Preshaw – Manager Catchment Protection
Malcolm Hughes – Manager Environment & Planning
Fiona Smith – Executive Manager Water and Catchment Protection
David Tomlinson – Water System Operations Manager Greater Sydney
Graham Begg – Manager Water Information Systems

Day 4 – Site inspections

Peel Valley (Tamworth) Drought Security Works Briefing

Andrew Scott – System Operations Manager - North

Ronan Magaharan – Executive Manager Assets

Metering site

Zeb Chapman – Customer Field Officer

Brian Mayhew – Manager Asset Maintenance & Services

Ronan Magaharan – Executive Manager Assets

Chaffey Dam

Troy Sands – Maintenance Team Leader Keepit

Ian Ladbroke – Asset Custodian Chaffey

Brian Mayhew – Manager Asset Maintenance & Services

Ronan Magaharan – Executive Manager Assets

Zeb Chapman – Customer Field Officer

Day 5 – Interview sessions

Bulk Water storage and transmission

– **CSR Water**

– **Bulk Water released to Local Water Utilities for Drinking Water purposes**

Russell Cocks – Manager Customer Experience

Jonathon Dickson

David Stockler – Executive Manager Customer and Community

Dan Berry – Manager Water System Operations

Graham Begg – Manager Water Information Systems

Fiona Smith – Executive Manager Water and Catchment Protection

Close-out meeting

David Harris – Chief Executive Officer

David Stockler – Executive Manager Customer and Community

Fiona Smith – Executive Manager Water and Catchment Protection

Andrew George – Executive Manager Water Solutions and Market Strategy

Ronan Magaharan – Executive Manager Assets

Helen Burgess

Daniel Lucas – Executive Manager Safety, People and Performance

E WaterNSW's statement of compliance

28 August 2019

Statement of Compliance 2019

For 2018/2019

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:

1. This statement documents compliance during 2018/2019 with all obligations to which WaterNSW is subject by virtue of its operating licence.
2. 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 WaterNSW Act 2014.
3. Schedule A provides information on all obligations with which WaterNSW did not comply during 2018/2019.
4. Other than the information provided in Schedule A, WaterNSW has complied with all conditions to which it is subject.
5. This compliance report has been approved by the Chief Executive Officer (or equivalent) and the Chairman of the Board of Directors of WaterNSW.

DATE: 28 August 2019
Signed: 
Name: ANNE McDONALD
Designation: CHAIR

DATE: 28 AUGUST 2019
Signed: 
Name: DAVID HARRIS
Designation: CEO

Schedule A: Non-Compliances

Table #	List of clauses breached, including a brief description of each licence clause	Describe: <ol style="list-style-type: none"> i. Date or Period of non-compliance ii. Nature and extent of non-compliance (including whether and how many customers have been affected) iii. Results of any monitoring (where applicable) iv. Reasons for non-compliance v. Remedial action taken vi. Actual/anticipated date of full compliance
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NON-COMPLIANCE

The following information identifies those clauses that WaterNSW has been non-compliant with for periods within the 2018-2019 Audit year.

There have been no impacts on our customers and assets throughout the audit period as a result of this non-compliance.

1	2.1.1 WaterNSW must maintain a Water Quality Management System in accordance with this clause 2.1	<p>NON-COMPLIANT PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019</p> <p>The Water Quality Management System (WQMS) was graded non-compliant - material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).</p> <p>Relevant 2017-2018 IPART Audit Recommendation: Recommendations 1, 2 and 3.</p> <p>Reasons for non-compliance:</p> <ul style="list-style-type: none"> • The overarching WQMS was found to have deficiencies ie not all categories of water within the scope contained the documented elements, components and activities of the ADWG. • Some legacy documents were still in use with no clear plan of when and how they were to be updated and integrated into the WQMS. • Operation and maintenance documentation were incomplete and sometimes not known by operational staff. • Deficiencies identified were also applicable to clauses 2.1.2 and 2.1.3. • The deficiencies had not resulted in impacts on water quality within or outside of the declared catchment area. <p>The following activities have been completed:</p> <ul style="list-style-type: none"> • Scope of Water Quality Management System clarified (see CD2013/56[v5]).
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- 2018-01: workshop held 12/02/19 to determine coverage of each element for each category of supply (matrix produced - D2019/14746). Updated references included in revised Water Quality Management System provided to NSW Health for comment 19/07/19 (D2019/75586).
- 2018-02: new Materials and Chemicals in contact with Drinking Water Supplies procedure (CD2019/36) developed and edits made to Procurement Framework (CD2016/77[v2]) to support procedure.
- 2018-03: List of procedures and processes for managing water quality (D2019/30924) developed with timeframe and responsibilities for review assigned.

Assessment of system status conducted using WSAA Aquality.

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings,

Anticipated date of full compliance:

Recommendations 1 and 2 will be completed by 30 September 2019, as stipulated by IPART.

Recommendation 3 will be completed by 31 December 2019, as stipulated by IPART.

2 2.1.2 With respect to Declared Catchment Areas, WaterNSW 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 WaterNSW, the Australian Drinking Water Guidelines as amended or added to by NSW Health; or

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 9 April 2019

The Water Quality Management System (WQMS) was graded non-compliant – material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:

Recommendation 4.

Reasons for non-compliance:

- The WQMS lacked documentation associated with material and chemicals selection and evaluation.
- Unclear which operational and process control procedures underpinned the WQMS.
- Inconsistencies with the Australian Drinking Water Guidelines Declared Catchment Area risk assessments.
- Recommendation 4 required all water utility risk assessment meet the requirements of elements 2 and 3 of the ADWG framework and the licence obligation.

The following activities have been completed:

c) any other requirements specified or approved by NSW Health or IPART.

- New Materials and Chemicals in Contact with Drinking Water Supplies procedure (CD2019/36) developed and supported by changes to the Procurement Framework (CD2016/77[v2]) and "Spendwise" Procurement portal on WaterNSW intranet. Training in the new procedure has been developed (D2019/48488) and will be rolled out shortly to selected roles.
- List of procedures and processes for managing water quality developed (D2019/14746) with review dates and responsibilities assigned.
- 2018-04: Catchment to Customer Risk Review process (D2019/30124) developed following system health check on procedure (D2019/56863).

Following the completion of the above activities, WaterNSW believes it is now compliant with this clause 2.1.2.

3 2.1.3 With respect to Non-Declared Catchment Areas from which WaterNSW Supplies water, WaterNSW must maintain Water Quality Management Systems that are consistent with:

- a) in the case of water with the final end use as Drinking Water:
 - i) a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW);
 - ii) the Australian Drinking Water Guidelines; or
 - iii) any other requirements as specified or approved by NSW Health or IPART,
- b) in the case of water that does not have a final end use as Drinking Water and that is not to be managed

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Water Quality Management System (WQMS) was graded non-compliant – material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:
Recommendations 1, 2 and 3.

Reasons for non-compliance:

- The WQMS did not reference the Oberon catchment, the WQMS is required under the ADWG to cover non-declared catchment areas which WATERNSW supplies water.
- Inconsistencies with the ADWG for the risk assessments for the non-declared catchment areas.
- Lack of documentation associated with materials and chemicals selection and evaluation.
- Recommendations 1,2 and 3 were handed down by IPART, Recommendations 1 and 2 are due for completion BY 30 September 2019 and recommendation 3 is due 31 December 2019.

The following activities have been completed:

- 2018-01: workshop held 12/02/19 to determine coverage of each element for each category of supply (matrix produced - D2019/14746). Updated references included in revised Water Quality Management System provided to NSW Health for comment 19/07/19 (D2019/75586).

according to a Water Quality Management System that satisfies clause 2.1.3(a):

- i) the Australian Guidelines for Water Recycling; or
- ii) any other requirements as specified or approved by NSW Health or IPART.

- 2018-02: new Materials and Chemicals in contact with Drinking Water Supplies procedure (CD2019/36) developed and edits made to Procurement Framework (CD2016/77[v2]) to support procedure.
- 2018-03: List of procedures and processes for managing water quality (D2019/30924) developed with timeframe and responsibilities for review assigned.

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings

Anticipated date of full compliance:

Recommendations 1 and 2 will be completed by 30 September 2019, as stipulated by IPART.
Recommendation 3 will be completed by 31 December 2019, as stipulated by IPART.

4 2.2.1 WaterNSW must manage and protect the Declared Catchment Areas in a manner that is consistent with its objectives and functions under the Act, the Water Quality Management System required under Clause 2.1 of this Licence, the Asset Management System required under Clause 5.1 of this Licence, and the Environmental Management System required under Clause 5.2 of this Licence.

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Water Quality Management System (WQMS) and the Asset Management System (AMS) were both graded non-compliant – material, however this clause, 2.2.1 was graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:

No specific recommendation was provided for this clause; however, it was noted that the completion of Recommendation 6 would address the deficiencies for this clause.

Reason for non-compliance:

- The activities undertaken in the Declared Catchment Areas are managed in accordance with the WQMS and the Environmental Management System but not the AMS.
- WaterNSW is required to manage service interruptions consistently with an AMS and is required to understand the needs of customer when service interruptions occur.
- Performance requirements and outcomes for the Declared Catchment areas were not identified in the AMS.
- WaterNSW did not manage and protect the Declared Catchment areas in accordance with the AMS.
- For noting: this non-compliance was graded Non-Compliant - non-material.
- The WaterNSW Environmental Management System (EMS) maintained certification throughout the audit

period however the EMS manual was under review for a considerable time during the audit (Approved April 2019). The implemented system was not impacted due to the review of documentation.

The following activities were completed by 30 June 2019:

- The Catchment Protection Work Program is designed specifically with the intent to satisfy the objectives and functions of the Act. The procedure for development of the program requires that consideration is given to the requirements of the WQMS, EMS and AMS in its development each year. The following documents were developed to assist in the annual program development:
- Procedure - CD2019/30 Prepare catchment protection work plan
- Template - D2019/25187 - Catchment Protection Work Program Initiative
- The AMS non-compliance identified in 2017-2018 (asset class standard did not identify objectives consistent with the broader activities of the broader catchment) has been addressed with the inclusion of the SASPoM objectives.
- Since the previous audit findings, WaterNSW has revised its Asset Class Standards to Strategies and developed a plan (D2019/21777) to complete the Asset Class Strategies (Recommendation 7 completed). This included CD2019/45[v2] Asset Class Strategy – Lands which was completed and approved.

Strategic Asset Management Plan has a new Asset Management Objective to report on the management and protection of the Declared Catchment Areas. (SAMP Appendix E Objective 9)

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

Recommendation 6 will be completed by 31 December 2019, as stipulated by IPART.

5 2.4.1 WaterNSW must ensure that, in Declared Catchment Areas, the Catchment Infrastructure Works are operated and managed consistently with the Design Criteria and the

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Asset Management System (AMS) was graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:

Asset Management System referred to in clause 5.1

Recommendations 6 and 7.

Reason for non-compliance:

The AMS is required to:

- incorporate the needs of stakeholders.
- reference the Design Criteria in the system requirements and objectives.
- Asset class standards did not exist for most catchment infrastructure works ie System documentation didn't specify objectives associated with operating in accordance with Design Criteria, as identified in previous IPART Audit.

The following activities were undertaken:

- Strategic Asset Management Plan (SAMP) has a new Asset Management Objective to ensure the System is operated and managed in accordance with the Design Criteria. Appendix E Objective 8. This is also reported on in the System Operation Report to the Executives on a Monthly basis - See D2019/58679 for Reporting in July.
- Since the previous audit findings, WaterNSW has revised its Asset Class Standards to Strategies and developed a plan (D2019/21777) to complete the Asset Class Strategies (Recommendation 7 completed).
- Configuration changes were made based on storage balancing and asset availability. Impact of major outages on storage balance and depletion was assessed as input into system planning process (Outage Planning Presentation, D2019/35848, Shoalhaven Outage Briefing note D2019/26174, Water Security Status Report D2019/48607). Shoalhaven Transfers were carried out as per operating rules and agreement with Origin Energy (Pumping Schedule D019/3916, Transfer Decision Making Tool D2019/2745).

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

Recommendation 6 will be completed by 31 December 2019, as stipulated by IPART.

Recommendation 7 will be completed by 31 December 2019, as stipulated by IPART.

6 3.1.1 WaterNSW must construct, maintain and operate its Water Management Works in

NON-COMPLIANT

ERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Asset Management System (AMS) was graded non-compliant – non-material in February 2019, 8 months into

accordance with its Asset Management System referred to in clause 5.1

the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:
Recommendation 6.

Reason for non-compliance:

- The AMS did not:
- Specify appropriate planning guidelines and requirements for related assets in Asset Class Standards, and
- Document the objectives of the Asset Class Standards and other technical knowledge.

The following activities were undertaken:

- Water Supplied to Sydney Water was managed as per the Raw Water Supply protocols Sydney Water Corporation and WaterNSW (CD2007/2[v3]).
- Water Supplied to the Fish River system was managed according to the WaterNSW and Lithgow City Council Operating Protocols for the Fish River Water Supply Manual (CD2017/173).
- Regular storage reports included assessment of risks and made recommendations for operational changes.
- Any operational changes are communicated via the Notification of Change to System Operations (NOCTSO) process (Warragamba Pipeline Outage D2019/76126).
- Configuration changes were based on storage balancing and asset availability.
- Impact of major outages on storage balance and depletion was assessed as input into system planning process (Outage Planning Presentation, D2019/35848, Shoalhaven Outage Briefing note D2019/26174, Water Security Status Report D2019/48607).
- Shoalhaven Transfers were carried out as per operating rules and agreement with Origin Energy (Pumping Schedule D019/3916, Transfer Decision Making Tool D2019/2745).
- A Drinking Water Quality Management System was finalised for treated water supply from Duckmaloi Water Filtration Plant in July 2019.
- A raw water supply agreement was established between the Sydney Catchment Authority and Goulburn Mulwaree Council in 2012 (D2012/97095) and remains in place, the Raw Water Supply Agreement Protocol for supply to Shoalhaven City Council (CD2013/17) remained in place and review

of the Raw Water Supply Agreement with Wingecarribee Shire Council commenced in 2019.

- In 2018-19 (Jul-Jun - to be updated end August) water supplied for treatment achieved 100% conformance to ADWG for health related characteristics, 99.95% conformance with raw water supply agreement standards and 91.87% conformance with customer preferred operational ranges.
- Asset Class Standards (now referred to as Strategies) used in high level planning were not fully developed, as identified in previous IPART Audit. Since the previous audit findings, WaterNSW has revised its Asset Class Standards to Strategies and developed a plan (D2019/21777) to complete the Asset Class Strategies. Resourcing has been dedicated for the development of these Asset Class Strategies.
- WaterNSW has completed an audit of the Asset Management System (Refer to D2019/74052 Draft Assetivity Asset Management System Audit Report).

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

Recommendation 6 will be completed by 31 December 2019, as stipulated by IPART.

- 7 4.2.3 WaterNSW must manage service interruptions in accordance with the Asset Management System required under clause 5.1.1 (Supply Service Interruption Performance Standard).

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Asset Management System (AMS) was graded non-compliant – material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:

Recommendation 6.

Reason for non-compliance:

WaterNSW has not set clear objectives to manage service interruptions.

The following activities were undertaken:

- Strategic Asset Management Plan (SAMP) updated with reference to how supply/service interruptions are to be managed in Section 4.1.3. Protocols referenced are: D2019/13509 and D2019/31938.
- Draft Supply Interruptions protocols have been prepared but still require review and approval.

- With the completion of the above activities WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

Recommendation 6 will be completed by 31 December 2019, as stipulated by IPART.

8 5.1.1 WaterNSW must at all times maintain a Management System for carrying out its functions authorised under this Licence that is consistent with the Australian Standard AS ISO55001:2014 Asset Management – Management systems – Requirements or other standard approved by IPART on request by WaterNSW (the Asset Management System)

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Asset Management System (AMS) was graded non-compliant – material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:

Recommendation 6.

Reason for non-compliance:

- The AMS did not cover all the functions of the Operating Licence.
- The AMS was deficient and lacked defined outcomes for the following:
 - Managing catchment infrastructure works and water management works (identified in the audit of clause 2.2.1 and 3.1.1).
 - Design criteria for security, robustness and reliability of water available for customers (identified in the audit of clause 2.4.1).
 - Supply interruptions (identified in the audit of clause 4.2.3).

The following activities were undertaken:

- Strategic Asset Management Plan revised to ensure all functions authorised under the licence were explicitly stated in the scope of the Asset Management System (Section 1.3)
- Stakeholder list was updated to be more detailed and capture more relevant Stakeholders and their requirements (SAMP Section 1.2).
- A system audit was undertaken by Assetivity. A key recommendation from the Assetivity's report was to expand the Stakeholder list and provide links to specific stakeholder requirements. This links back to IPART's recommendation 6 and will be completed by 31 December 2019.

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

- 9 5.1.2 WaterNSW must fully implement the Asset Management System and carry out all relevant activities in accordance with the Asset Management System

Anticipated date of full compliance:

Recommendation 6 will be completed by 31 December 2019, as stipulated by IPART.

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Asset Management System (AMS) was graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:

Recommendation 6 and 7.

Reason for non-compliance:

Deficiencies identified with the implementation of the AMS

- The absence of some Asset Class Standards
- Uncertainty over the ownership of some meters
- Management of service interruptions

The following activities were undertaken:

- System documentation didn't specify functions of the operating licence within the Asset Management System Scope and didn't have sufficient details on stakeholders, as identified in previous IPART Audit. This has been addressed.
- Strategic Asset Management Plan revised to ensure all functions authorised under the licence were explicitly stated in the scope of the Asset Management System (Section 1.3)
- WQMS - Asset Management System - Strategic Asset Management Plan (CD2015/436) includes references to water quality within the organisational context, stakeholder list, scope, communications, records, managing risks, continual improvement and objectives and measures. The Water Quality Management System references Asset management provisions under elements 4.4 and 9.3
- The Stakeholder list was updated to be more detailed and capture more relevant Stakeholders and their requirements (SAMP Section 1.2)
- The Asset Management System has undergone a complete system audit and identified two areas of non-conformance. (Refer to D2019/74052 Draft Assetivity Asset Management System Audit Report) The non-conformances identified were:
- The need for appropriate resourcing for the establishment, implementation, maintenance and continual improvement of the AMS.

- Management of Change procedure needs to incorporate temporary change and improved monitoring and reporting on asset change
- Asset Class Standards (now referred to as Strategies) used in high level planning were not fully developed, as identified in previous IPART Audit. Since the previous audit findings, WaterNSW has revised its Asset Class Standards to Strategies and developed a plan (D2019/21777) to complete the Asset Class Strategies. Resourcing has been dedicated for the development of these Asset Class Strategies
- Asset class strategy for Lands has been completed and is inclusive of objectives for management of the WaterNSW land asset consistent with SASPoM objectives which in turn support the SASPoM vision and the objectives and functions of the Act. CD2019/45[v2] Asset Class Strategy – Lands

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

Recommendation 6 will be completed by 31 December 2019, as stipulated by IPART.

Recommendation 7 will be completed by 31 December 2019, as stipulated by IPART.

10 5.2.1 WaterNSW must at all times maintain an Environmental Management System for carrying out the functions authorised under this Licence that is consistent with the Australian/New Zealand Standard AS/NZS ISO 14001:2016: Environmental management systems – Requirements with guidance for use or other standard approved by IPART, on request by WaterNSW (the Environmental Management System).

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 17 April 2019

WaterNSW maintains an Environmental Management System (EMS), certified to ISO14000:2015 standards. During the audit period the scope of the EMS was amended to ensure that it captured the authorised functions of the Operating License. The Environmental Management System Manual was approved on 17 April 2019.

Relevant 2017-2018 IPART Audit Recommendation:

NIL – new non-compliance.

Following the completion of the above activities,

WaterNSW believes it is now compliant with this clause 5.2.1.

11 5.2.2 WaterNSW must fully implement the Environmental Management System and carry out all relevant activities in accordance

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 17 April 2019

The Environmental Management System (EMS) maintained certification throughout the audit period however the EMS manual was under review for a considerable period. It was approved on the 17 April 2019. The implemented system was not impacted due to the review of documentation.

with the Environmental Management System.

- 12 6.1.1 WaterNSW must establish and maintain agreements with each of its Customers to whom it Supplies water (except Sydney Water), which agreements must set out the terms and conditions for the Supply of water (Customer Supply Agreements).

Relevant 2017-2018 IPART Audit Recommendation:
NIL – new non-compliance.

WaterNSW believes it is compliant with this clause 5.2.2.

NON-COMPLIANT
PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Customer Supply agreements were graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:
Recommendation 8

Reasons for non-compliance

- The template for the minor customers receiving filtered water in the Fish River scheme contained no reference to a dispute resolution process and
- two regulatory instruments were out of date
- It is noted that the majority of customer supply agreements met the requirements of this clause 6.1.1.

The following activities were completed:

- There have been no new agreements issued or renewed during the audit period.
- A Customer Supply Agreement Procedure (draft) has been developed in order to detail the process for how to prepare, review and issue a Customer Supply Agreement.
- All revised documentation (supply agreement templates) are awaiting final approval in ARK.

Anticipated date of full compliance:

Recommendation 8 will be completed by 31 December 2019, as stipulated by IPART.

- 13 6.1.2 WaterNSW must only Supply water to these Customers in accordance with the terms and conditions of these Customer Supply Agreements.

NON-COMPLIANT
PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Customer Supply agreements were graded non-compliant – material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:
Recommendation 9, 10 and 11.

Reasons for non-compliance

- WaterNSW did not report water quality to Wingecarribee Council (sampling and monitoring is currently beyond the capability of the supply system)
- Fish River Customer Supply Agreements state that WaterNSW monitors customer complaints to ensure it is meeting its obligations, however the lack of a water quality category of complaint made it difficult to demonstrate evidence with respect of water quality aspects.

The following activities were undertaken:

- Water was supplied in accordance with agreements. The terms and conditions in the Agreements include the standard of the quality of the water supplied; the continuity of the water supplied; the costs to be paid by the Customers for the supply of water to them; and the dispute resolution and complaint handling procedures. Water is supplied under these conditions.
- WaterNSW commenced discussions with Wingecarribee Council regarding the re-negotiation of the Customer Supply Agreement.
- There have been no new agreements issued or renewed during the audit period.
- A Customer Supply Agreement Procedure (draft) has been developed in order to detail the process for how to prepare, review and issue a Customer Supply Agreement.
- All revised documentation is awaiting final approvals in ARK.
- Inclusion of "Water Quality" category in customer helpdesk ticketing system and the complaints procedure has been updated.

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

Recommendation 9 was completed prior to the 1 June 2019, as stipulated by IPART.

IPART Recommendation 10 is due for completion by 31 December 2019, as stipulated by IPART.

IPART Recommendation 11 is due for completion by 30 June 2020, as stipulated by IPART.

- 14 6.1.3 The terms and conditions of the Customer Supply Agreements must, at a minimum, include provisions addressing:

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

The Customer Supply agreements were graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

- a) the standard of water quality Supplied by WaterNSW;
- b) the continuity of the water Supplied by WaterNSW (that is, provisions relating to interruptions, disconnections and reconnections to Supply);
- c) any metering arrangements;
- d) the fees and charges to be paid by the Customers for the Supply of water to them;
- e) dispute resolution and Complaints handling procedures; and
- f) in the case of a Customer Supply Agreement with a Customer referred to in clause 1.2.1(e), terms and conditions preventing the Customer concerned from supplying the water for consumption by others within the State unless the Customer is authorised to do so by or under an Act.

15

6.3.1 WaterNSW must determine the volume of water Extracted by, or Supplied to, each of its Customers, at least annually, for the purpose of accurate account management, billing and reporting.

Relevant 2017-2018 IPART Audit Recommendation:
Recommendation 10.

Reason for non-compliance:

The template for the Fish River customer supply agreement did not meet the obligations of 6.1.3(e).

The following activities were undertaken:

- A review of customer supply agreements was completed, and gaps identified. New templates have been drafted however, no new agreements or existing agreements have been renewed within the period.
- All revised documentation is awaiting final approvals in ARK.

Anticipated date of full compliance:

IPART Recommendation 10 is due for completion by 31 December 2019, as stipulated by IPART.

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 1 May 2019

The Determining the volume of water extracted clause was graded non-compliant – material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister).

Relevant 2017-2018 IPART Audit Recommendation:
Recommendations 12 and 13.

Reason for non-compliance:

WaterNSW did not make an assessment of the accuracy of water take or set objectives for accuracy.

The following activities were undertaken:

- The Determining Water take procedure was amended to set objectives for the accuracy of water take determinations
- Extractions have been determined for all customers in accordance with the requirements of the clause.

Following the completion of the above activities, WaterNSW believes it is now compliant with this clause 6.3.1.

Anticipated date of full compliance:

IPART Recommendation 12 is due for completion by 30 September 2019, as stipulated by IPART.

IPART Recommendation 13 is due for completion by 31 December 2019, as stipulated by IPART.

16 6.8.2 The Code of Practice on Payment Difficulties must:

a) provide for a payment plan for Customers who are responsible for paying their Bills and who are, in WaterNSW's reasonable opinion, experiencing financial hardship;

b) include procedures for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer (including in respect of capture store release (CSR) Water and Supply water);

c) include procedures for identifying the circumstances under which WaterNSW 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

d) include procedures for self-identification, identification by community welfare organisations and identification by WaterNSW of Customers experiencing financial hardship.

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 14 March 2019

The Code of Practice on Payment Difficulties clause was graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:
Recommendation 16.

Reason for non-compliance:

The Debt Management Code of Practice does not fully meet the requirements of the clause 6.8.2(d).

The following activities were undertaken:

- Payment plan options, Self-identification and identification by welfare organisations process has been explained in Code of Practice. https://www.waternsw.com.au/__data/assets/pdf_file/0018/143442/WaterNSW_Debt-Management-Code-of-Practice_2019.pdf
- Procedures for suspension of licences has been explained in Code of Practice, Water Operations now to be advised re suspension of licenses in the event this would impact the release of water based on licence entitlement
- Overdue notices provide advice to contact WaterNSW in the event the customer is experiencing financial hardship

Following the completion of the above activities, WaterNSW believes it is now compliant with this clause 6.8.2.

Anticipated date of full compliance:

IPART Recommendation 16 is due for completion by 31 December 2019, as stipulated by IPART.

17 6.8.3 WaterNSW must set out details of the Code of Practice on Payment Difficulties in the

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 30 August 2019

Customer Service Charter, or, where a Customer Supply Agreement is established in respect of a Customer, in that Customer Supply Agreement.

The Code of Practice on Payment Difficulties clause was graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:
Recommendation 8

Reason for non-compliance:

- Fish River minor consumer agreements did not refer to the Debt Management Code of practice or details of the process in the event of payment difficulties.

The following activities were undertaken:

- Draft Customer supply agreements include financial hardship policy.
- Greater Sydney customers have been updated of Sydney Water hardship policy since 1994 on an annual basis.
- Established an annual notification of the Hardship policy to Greater Sydney customers in hard copy and new and expired customer supply agreements to be updated to include reference to hardship policy.
- Revised Supply agreement templates have been drafted and awaiting approval in ARK.

With the completion of the above activities, WaterNSW believes it is currently Compliant with minor shortcomings.

Anticipated date of full compliance:

IPART Recommendation 8 is due for completion by 31 December 2019, as stipulated by IPART.

18 6.9.1 WaterNSW must 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 organizations (AS/NZS 10002:2014) or other standard approved by IPART on request by WaterNSW (Internal Complaints Handling Procedure).

NON-COMPLIANT

PERIOD OF NON-COMPLIANCE - 1 July 2018 – 18 June 2019

The Internal Complaints handling procedure clause was graded non-compliant – non-material in February 2019, 8 months into the 2018-2019 Audit period. (WaterNSW Operational Audit 2018 – Report to the Minister)

Relevant 2017-2018 IPART Audit Recommendation:
Recommendations 18 and 19.

Reason for non-compliance:

Complaints handling system lacked a category for water quality complaints.

The following activities were undertaken:

- Inclusion of "Water Quality" category in customer helpdesk ticketing system

- Development and rollout of complaint handling training
- Currently WaterNSW follows Complaints handling procedure CD2007/13[V5] - Complaints Handling Procedure information can be found at: <http://www.watensw.com.au/customer-service/feedback/feedback-and-complaints-handling-policy>

Following the completion of the above activities, WaterNSW believes it is now compliant with this clause 6.9.1.

Anticipated date of full compliance:

IPART Recommendation 18 is due for completion by 30 September 2019, as stipulated by IPART.

IPART Recommendation 18 is due for completion by 31 December 2019, as stipulated by IPART.