

WaterNSW
OPERATIONAL AUDIT 2020



© Independent Pricing and Regulatory Tribunal (2021).

With the exception of any:

- (a) coat of arms, logo, trade mark or other branding;
- (b) photographs, icons or other images;
- (c) third party intellectual property; and
- (d) personal information such as photos of people,

this publication is licensed under the Creative Commons Attribution-NonCommercial-NoDerivs 3.0 Australia Licence.



The licence terms are available at the [Creative Commons website](#):

IPART requires that it be attributed as creator of the licensed material in the following manner: © Independent Pricing and Regulatory Tribunal (2021).

The use of any material from this publication in a way not permitted by the above licence or otherwise allowed under the *Copyright Act 1968* (Cth) may be an infringement of copyright. Where you wish to use the material in a way that is not permitted, you must lodge a request for further authorisation with IPART.

Disclaimer

This report is published for the purpose of IPART meeting its reporting requirements to the Minister under section 58 of the *Water NSW Act 2014*. Use of the information in this report for any other purpose is at the user's own risk, and is not endorsed by IPART.

ISBN 978-1-76049-481-0

The Independent Pricing and Regulatory Tribunal (IPART)

We make the people of NSW better off through independent decisions and advice. IPART's independence is underpinned by an Act of Parliament. Further information on IPART can be obtained from IPART's website: <https://www.ipart.nsw.gov.au/Home>.

Tribunal Members

The Tribunal members for this review are:

Ms Deborah Cope, Acting Chair

Ms Sandra Gamble

Mr Mike Smart

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

Darren Holder (02) 9290 8441

Mamata Titus (02) 9113 7750

Gudny Palsdottir (02) 9113 7709

Contents

Tribunal Members	ii
Summary	1
1 Introduction	4
1.1 Recommendations	4
1.2 WaterNSW's operational performance in 2020	7
1.3 Annual statement of compliance	8
1.4 Progress with previous recommendations	9
1.5 Audit scope	9
2 Audit findings and recommendations	10
3 Progress on previous audit recommendations	23
A Compliance grades	27
B Audit process	28
C 2020 audit scope	32
D Auditor's report on the operational audit 2020 – WaterNSW	33
E IPART's checks for the 2020 operational audit – WaterNSW	34
F WaterNSW's statement of compliance	36

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 obligations.




This is our report to the Minister on the 2020 operational audit as required under the *Water NSW Act 2014* (Act).¹ In the 2020 annual audit, we audited WaterNSW's compliance with 51 clauses of the *Water NSW 2017–2022 Operating Licence* (Licence)² during the period from 31 August 2019 and 31 August 2020 (audit period).

Key findings

We have summarised WaterNSW's compliance with audited clauses of the Licence in Table 1.1 below.

Table 1.1 WaterNSW's compliance in 2020, the third year of its 2017–2022 Licence

Licence part	Number of audited clauses	Compliance grade assigned				
						
Part 1 – Licence context and authorisation	1	-	-	1	-	-
Part 2 – Water Source protection and conservation	14	10	-	-	3	1
Part 3 – Bulk Water storage and transmission	3	2	1	-	-	-
Part 4 – Performance Standards	7	4	1	1	-	1
Part 5 – Organisational systems management	2	2	-	-	-	-
Part 6 – Customer and stakeholder relations	17	12	1	3	1	-
Part 7 – Performance monitoring and reporting	7	7	-	-	-	-
Part 8 – Definitions and interpretation	-	-	-	-	-	-
Total	51	37	3	5	4	2

Note:  = Compliant;  = Compliant (minor shortcomings);  = Non-Compliant (non-material);

 = Non-Compliant (material);  = No Requirement.

Source: Atom Consulting, *2020 Operational Audit of WaterNSW*, February 2021 (Appendix D) and IPART internal check of clauses, (Appendix E).

¹ See Division 1 of Part 5 of the Act.

² Our report presents an exception based summary of the audit. 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 and IPART's checks in Appendix E.

The identified non-compliances relate to the Fish River Water Supply Scheme (FRWSS) in the non-declared catchment area. WaterNSW was compliant with its operating licence requirements for the Declared Catchment Area.

WaterNSW is largely a bulk water supplier. Supplying water to the FRWSS is a relatively small part of WaterNSW's operations. However, we have concerns with the ongoing nature of some of the material non-compliances identified in the 2020 audit. This is particularly concerning given WaterNSW supplies drinking water to many FRWSS customers.

We identified no actual threats to public health during the audit period. We will seek further information from WaterNSW before taking any further action on the Non-compliant (material) clauses.

The 2020 audit found:

- ▼ Four Non-compliant (material) grades:
 - WaterNSW did not maintain a Water Quality Management System (WQMS) consistent with the requirements of the Licence. This non-compliance is related to the next two listed below.
 - WaterNSW did not maintain a WQMS for the non-declared catchment areas (i.e. for the FRWSS) that met the requirements of the Australian Drinking Water Guidelines (ADWG).
 - WaterNSW did not implement the WQMS for the FRWSS effectively.
 - WaterNSW could not demonstrate that the water supplied to the FRWSS customers was in accordance with the requirements of the customer supply agreements.
- ▼ Five Non-compliant (non-material) grades:
 - WaterNSW did not make the latest version of the Licence, granted by the Minister on 1 July 2020, available on its website until after the audit period ended.
 - WaterNSW contacted 98.66% of customers placing non-complying water orders within one working day to rectify the order, and not the required 99%.
 - WaterNSW's Customer Advisory Group Charter did not include two of the requirements specified in the Licence.
 - WaterNSW's Code of Practice on Payment Difficulties did not include a requirement specified in the Licence.
 - WaterNSW's Internal Complaints Handling Procedure was not consistent with AS/NZS 10002:2014.
- ▼ Three Compliant (minor shortcomings) grades:
 - WaterNSW could not demonstrate that the water supplied to the FRWSS during the audit period was in accordance with the relevant agreements and WQMS. However, the audit did not find evidence of actual threats to public health with the water supplied (i.e. water supplied was within WaterNSW's CCP limits)
 - WaterNSW could not demonstrate that WaterNSW supplied water to the FRWSS according to the WQMS (i.e. the relevant performance standard).
 - WaterNSW worked together effectively with the Natural Resources Access Regulator (NRAR) but there were minor shortcomings with WaterNSW's compliance with the Memorandum of Understanding (MoU).

These issues are discussed in Table 2.2.

We make 19 recommendations to the Minister for clauses where we did not assign a fully Compliant grade.³ All of these recommendations are set out in Chapter 1 and further discussed in Chapter 2.

This audit also followed up on 9 recommendations arising from previous audits. We consider 7 of the 9 previous recommendations to be complete.

There were remaining issues with 2 of the 7 complete recommendations. As the remaining issues were similar to those issues observed in the 2020 audit, we have included the remaining issues in this year's recommendations and closed the previous recommendations.

We consider that WaterNSW has adequately taken steps to progress the remaining 2 incomplete recommendations. One of these was due to be completed in the next the audit period. We will review WaterNSW's progress in closing out the remaining recommendations at the next operational audit.

Our discussion of WaterNSW's progress with previous recommendations is presented in Chapter 3.

³ Consistent with the IPART *Audit Guideline Public Water Utilities*, July 2019, auditors are only required to make recommendations for grades other than Compliant, (i.e. for Compliant (minor shortcomings), Non-compliant (non-material) and Non-compliant (material) grades).

1 Introduction

The 2020 audit is the third operational audit of WaterNSW's compliance with the requirements of the Licence.

We engaged specialist auditing firm, Paradigm Digital Pty Ltd, trading as Atom Consulting, in partnership with RiskEdge Pty Ltd and Cardno (QLD) Pty Ltd, 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 19 recommendations for the clauses where we did not assign a Compliant grade⁴ to WaterNSW to encourage compliance with the Licence. These recommendations are based on the findings of the audit by our auditor, Atom Consulting, and should be read in conjunction with each of the relevant Licence clauses.

Recommendations

2020-01: By 30 June 2021, complete the review (and revision as appropriate) of the Water Quality Incident Response Protocol.

2020-02: By 31 July 2021, review and, where appropriate, amend the Fish River Water Supply Scheme Drinking Water Quality Management System against each of the 12 elements, 32 components and 76 actions of the Framework for Management of Drinking Water Quality. WaterNSW should document reviews and internal audits in the updated system at intervals appropriate to ensure effective implementation of the system. WaterNSW should review and update supporting documentation for currency, including:

- Fish River Water Supply System operations and maintenance manual
- Operating Protocols for Fish River Water Supply (CD2017/173)
- Fish River Water Supply Scheme Incident Management Plan (D2018/116921).

2020-03: By 30 June 2021, WaterNSW should engage with NSW Health Local Health Department (LHD) to determine the appropriate mechanisms for stakeholder commitment and engagement with them, including:

- Reporting on the annual review of the drinking water management system
- Routine reporting on the distribution system water quality

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

-
- Notification requirements when water quality cannot be assured (including instrumentation failure).

2020-04: By 30 September 2021, WaterNSW should:

- Review the Fish River Water Supply System verification monitoring program to align with the monitoring that is being undertaken in the field and the requirements of the Australian Drinking Water Guidelines. NSW Health should be consulted to confirm the verification program aligns with their advice.
- Review the implementation of the Fish River Water Supply System verification 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 (e.g. reporting should verify the number of samples taken).

2020-05: By 31 July 2021, WaterNSW should undertake a risk and Critical Control Point (CCP) review workshop for the Fish River Water Supply Stage 1 system (using D2019/30124) with key stakeholders, including the NSW Health LHD, with outcomes reviewed by relevant senior executives.

- The risk assessment should have a sound evidence base for the effectiveness of the preventive measures (including how effectively they are implemented).
- The risk assessment should explicitly consider the risk of contamination of the treated water by raw water leaking through the valves connecting Stage 1 and Stage 2.
- For the CCPs, the risk assessment should consider (1) the adequacy of the limits chosen, (2) validation for the limits chosen, (3) the monitoring points, (4) corrections and formalisation of procedures and (5) communication triggers with the NSW Health LHD for non-conformance or CCP instrumentation failure.

2020-06: By 30 June 2021, WaterNSW should develop and implement change management processes for the CCP alarms. These processes should establish who has the authority to raise the alarms above the critical limit and the incident procedures to be enacted when this change is made.

2020-07: By 30 June 2021, WaterNSW should clarify how targeted risk reviews are undertaken, if the C2C (Catchment to Consumer) process (D2019/30124) does not apply. If the C2C process does apply, ensure that the scope of the process is changed to make this clear.

2020-08: By 30 June 2021, WaterNSW should ensure that all relevant roles with responsibility for assembling inputs, collating outputs and contributing in a key manner to the water quality risk assessments, are trained in the requirements of process [WaterNSW ref. D2019/30124] (all inputs, steps and outputs).

-
- 2020-09:** By 30 June 2021, WaterNSW should review the appropriateness of CCP analysers at Duckmaloi Water Treatment Plant to ensure that they provide a reliable measurement of turbidity and chlorine residual.
- 2020-10:** By 30 June 2021, WaterNSW should review and update operational forms at Duckmaloi Water Treatment Plant to improve record keeping of operational data, including the time of data sampling and any actions taken to manage operational issues at the plant.
- 2020-11:** By 30 June 2021, WaterNSW should develop and implement procedures for reporting in line with CSR Water Performance standards under clause 4.3 of the Licence. These should (1) define the performance measure, (2) set out inclusions and exclusions and (3) include the process for reviewing, and, (4) where required, revising, the data for reporting against the performance standards, the overall calculation and any review and approval requirements
- 2020-12:** By 30 June 2021, WaterNSW should (1) consult with NSW Health to identify the most appropriate information in the Australian Drinking Water Guidelines that applies to the Fish River Filtered Water Supply and (2) amend the customer Supply Agreement to cover the obligations that have been agreed by consensus between WaterNSW and NSW Health.
- 2020-13:** By 30 June 2021, WaterNSW should undertake a review of its Customer Advisory Group Charter to document matters that should be referred to the Customer Advisory Group.
- 2020-14:** By 30 June 2021, WaterNSW should complete its review of WaterNSW's Customer Advisory Group Charter to document procedures for proposing and progressing an amendment to the Charter.
- 2020-15:** By 30 June 2021, WaterNSW should amend its Code of Practice on Payment Difficulties to include procedures for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer including the minor/retail customers who are able to be disconnected for non-payment of services.
- 2020-16:** By 30 June 2021, WaterNSW should establish a Complaints Management Policy in accordance with the requirements of AS/NZS 10002:2014.
- 2020-17:** By 30 June 2021, WaterNSW should undertake a review of its Complaints Handling and Compliments Procedure to ensure:
- WaterNSW manages complaints received through social media in line with the requirements of AS/NZS 10002:2014 Clause 4.6.
 - WaterNSW documents the behaviour expected of both its staff and complainants in line with the requirements of AS/NZS 10002:2014 clause 5.3.1.
 - WaterNSW documents the process for managing complaints involving multiple parties in line with the requirements of AS/NZS 10002:2014 clause 5.3.3.

2020-18: By 30 June 2021, WaterNSW should review, revise and ratify the Terms of Reference for both the Strategic Group and the Operation Group, paying particular attention to areas such as frequency of meetings.

2020-19: By 30 June 2021, WaterNSW should update the document history of the Area Protocols with a formalised cycle of review, to ensure establishment of currency and accuracy.

The compliance grades are explained in Appendix A. IPART's Reporting Manual⁵ requires WaterNSW to provide a report on its progress in implementing these recommendations by 31 March 2021 or at a later date agreed to by IPART. We have agreed to a later date of 7 June 2021.

1.2 WaterNSW's operational performance in 2020

The 2020 audit results raise concerns regarding WaterNSW's compliance against several requirements of the Licence. We consider the most significant issues related to WaterNSW's WQMS for the FRWSS. These issues must be prioritised because they could adversely impact on WaterNSW's ability to assure safe supply of drinking water to the FRWSS customers that meets the requirements of the ADWG. WaterNSW also needs to ensure that the quality of water supplied to the FRWSS is in accordance with the customer supply agreements.

In our view, WaterNSW has not demonstrated adequate organisational commitment to implementing the preventive measures and operational controls necessary for assuring safe and reliable water for the FRWSS. We have repeatedly found issues when auditing the WQMS for the FRWSS over the past few years. The audit did not find evidence of actual threats to public health with water supplied to the FRWSS during the audit period. However, there is potential for this in future if WaterNSW does not improve its compliance for the FRWSS.

The other issues identified in the audit pose less risk to public health, customers or the environment.

Despite the issues identified in the audit, we consider that WaterNSW has made substantial progress in other areas of its business. During the audit period, WaterNSW contended with bushfires and drought, followed by torrential rains. It is reasonable to expect that WaterNSW may have prioritised its efforts to respond to these challenges.

Prior to the end of the drought, WaterNSW worked with Sydney Water to develop an Operational Drought Response Plan. As a result of the end of the drought, a number of projects have been put on hold for the foreseeable future. The focus of current planning work is on a longer-term strategy and the development of an Emergency Drought Response Plan.

⁵ *WaterNSW Reporting Manual Operating Licence 2017–2022 (July 2018)*, available on our website (<https://www.ipart.nsw.gov.au>).

WaterNSW demonstrated during the audit interviews that it worked extensively with the NSW Rural Fire Service in responding to the bushfires and protecting the Declared Catchment. WaterNSW also worked closely with other government organisations including the DPIE and NRAR. NRAR and WaterNSW split the responsibilities for granting and managing water licences and approval. WaterNSW works closely with NRAR on information sharing to support NRAR's compliance activities and investigations of suspected breaches of water law.

DPIE is preparing a Greater Sydney Water Strategy, to replace the 2017 Metropolitan Water Plan, and a State Water Strategy that will provide a basis for WaterNSW planning work into the future.

WaterNSW updated its supply yield calculation model to include varying climatic demand factors, capturing the complex relationship between climate and demand, and include hydrological data from the recent drought.

Outcomes of WaterNSW's research programs show sound demonstration of benefits and outcomes for the Declared Catchment Area. WaterNSW is undertaking research to better understand linkages between catchment works, fire impacts and erosion impacts.

WaterNSW has also undertaken extensive work to develop asset class strategies for its critical assets and is now moving into developing the technical specifications to implement the strategies. WaterNSW completes asset management activities in accordance with the information set out in the asset class strategies.

1.3 Annual statement of compliance

In preparing this report we have also considered WaterNSW's annual Statement of Compliance (Appendix F). This is an exception-based report⁶ certified by the Acting CEO and the Chair of the Board of Directors of WaterNSW. It lists all Licence non-compliances identified by WaterNSW and what remedial action has been taken, or is being taken, to resolve these non-compliances.

This year WaterNSW reported one non-compliance on a performance standard for water accounts. WaterNSW reported that it did not meet its obligation under clause 4.3.5 of the Licence. Clause 4.3.5 requires WaterNSW to ensure that 90% of complying temporary trades within NSW in the financial year are processed within 5 working days of WaterNSW's receipt of a correct application and fee. If temporary trades are not processed within the necessary timeframe, there is a risk that WaterNSW's customers may not meet their water supply requirements.

WaterNSW reported that it had achieved an overall compliance of 82% during the 2019-20 financial year. WaterNSW included groundwater trades in its calculations, which inhibited its ability to comply with this Licence clause. This is because WaterNSW refers groundwater trades to DPIE for hydrological assessment, and cannot control the timeframe in which these trades are completed.

⁶ This means self-reporting only on those clauses where WaterNSW considers it is non-compliant.

We have not reported this as a non-compliance because we consider that clause 4.3.5 does not relate to groundwater trades. This performance standard relates specifically to “CSR Water”, or water that WaterNSW captures, stores and releases, as defined in the Licence, which does not include groundwater.

Our auditor found that WaterNSW processed 94% of temporary trades for CSR Water within the required timeframe during the financial year, and was therefore Compliant with clause 4.3.5.

We may consider if groundwater trades should be regulated under the Licence in the next licence review.

1.4 Progress with previous recommendations

WaterNSW had 9 recommendations outstanding from previous operational audits.

Commendably, WaterNSW fully completed 5 of the 9 previous recommendations. These related to maintaining and implementing a WQMS, ensuring that any water supplied to customers is in accordance with a WQMS and customer supply agreement, establishing and maintaining customer agreements, setting out details of the code of practice on payment difficulties, and assessing the accuracy of WaterNSW’s water take estimates for the purposes of accurate account management.

WaterNSW partially completed another 2 recommendations also related to maintaining and implementing a WQMS. There were some remaining issues but these were similar to issues observed in this year’s audit. We have therefore captured the remaining issues in this year’s recommendations 2020-03 and 2020-04, and closed out the previous recommendations. We will review WaterNSW’s progress with the outstanding issues when we review recommendations 2020-03 and 2020-04 at the next audit.

The remaining 2 previous recommendations are in progress. One of these recommendations relates to WaterNSW’s Deed of Business Transfer for the conduct of the Conferred Functions specified in Schedule A of the Licence. WaterNSW relies on DPIE’s input to complete the recommendation and clarify the two entities’ roles and responsibilities.

The other recommendation is due in the next audit period. We will assess these 2 remaining recommendations at the next audit.

We have discussed all the previous recommendations further in Chapter 3.

1.5 Audit scope

The full process we followed to undertake the audit is in Appendix B and the audit scope is in Appendix C.

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 receive the highest compliance grade (Compliant).

WaterNSW was compliant with water quality management sub-clauses under clause 2.1 of the Licence for the declared catchment. However, for the non-declared catchment we assigned material non-compliances on maintaining and implementing WQMS (i.e. for the FRWSS).

WaterNSW did not achieve its CSR Water Delivery Performance Standard A in the audit period and we assigned a non-compliant (non-material) grade. We also assigned non-compliant (non-material) grades for clauses on addressing issues in the Customer Advisory Group Charter specified in the licence, making provisions in the Code of Practice on Payment Difficulties specified in the licence and maintaining a complaints handling procedure consistent with AS/NZS 10002:2014.

WaterNSW also had minor shortcomings on supplying water in accordance with a relevant WQMS and any relevant customer supply agreements, managing quality of water supplied in accordance with the relevant WQMS, and maintaining a MoU with NRAR. These issues require attention from WaterNSW to ensure compliance is maintained.

Table 2.1 provides a snapshot of WaterNSW's non-compliances over the course of the Licence for the clauses where we have not assigned WaterNSW a Compliant grade in this year's audit.

Table 2.2 provides an audit exception summary (i.e. a summary of the non-compliances) and our reasoning for the assigned grade and any relevant recommendations.

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

Table 2.1 2020 audit exceptions in relation to historic performance with WaterNSW's 2017-2022 Licence requirements

Licence clause	Requirement	Compliance grade				
		2017–18 ^a	2018–19 ^b	2019–20 ^c	2020–21	2021–22
1.5.1	Making copies of this licence available	-	-		-	-
2.1.1	Maintaining a Water Quality Management System (WQMS) in accordance with this clause 2.1				-	-
2.1.3	With respect to Non-Declared Catchment Areas, maintaining a WQMS				-	-
2.1.4	Implementing the relevant WQMS				-	-
3.2.1	Supplying Water in accordance with a relevant WQMS and any relevant customer supply agreements		-		-	-
4.2.2	Managing quality of water Supplied in accordance with the relevant WQMS				-	-
4.3.2	Managing non-complying water orders for water that is captured, stored and released to customers	-	-		-	-
6.1.2	Supplying water to customers in accordance with agreements		-		-	-
6.6.2	Addressing the issues in the Customer Advisory Group Charter specified in the licence	-	-		-	-
6.8.2	Making provisions in the Code of Practice on Payment Difficulties specified in the licence		-		-	-
6.9.1	Maintaining a complaints handling procedure consistent with AS/NZS 10002:2014		-		-	-
6.17.1	Establishing and maintaining, as well as complying with, a Memorandum of Understanding with the Natural Resources Access Regulator	-	-		-	-

^a IPART, *WaterNSW Operational Audit 2018 – Report to the Minister – Compliance Report*, February 2019.



^b IPART, *WaterNSW Operational Audit 2019 – Report to the Minister – Compliance Report*, December 2019.


^c Atom Consulting, *2020 Operational Audit of WaterNSW*, February 2021 (Appendix D) and IPART internal check of clauses, (Appendix E).

Note: The 2017–18 audit period is 1 July 2017 to 30 June 2018. The 2018–19 audit period is 1 July 2018 to 30 August 2019. The 2019–20 audit period is 31 August 2019 to 31 August 2020.


Note: = Compliant; = Compliant (minor shortcomings); = Non-Compliant (non-material); = Non-Compliant (material)

Table 2.2 2020 compliance with WaterNSW's Licence – grades other than fully Compliant


Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
1.5.1	Water NSW must make this Licence available free of charge on its website for downloading by any person.	 Non-Compliant (Non-Material)	<p>We assigned WaterNSW a Non-Compliant (Non-Material) grade for clause 1.5.1.</p> <p>On 1 July 2020, the Minister approved amendments to the Licence. WaterNSW did not make this version of the Licence available on its website after it became available on 1 July 2020, until after the audit period ended.</p> <p>We consider that the deficiency to be non-material as this is a low risk obligation. On 12 November 2020, WaterNSW made the 1 July 2020 version of the licence available free of charge on its website.</p>	We make no recommendations in relation to this clause.
2.1.1	Water NSW must maintain a WQMS in accordance with this clause 2.1	 Non-Compliant (Material)	<p>This clause 2.1.1.requires WaterNSW's WQMS to be consistent with clauses 2.1.2 and 2.1.3. Our auditor assigned WaterNSW a Non-Compliant (Material) grade for clause 2.1.1 because of the non-compliance with clause 2.1.3 (discussed below). We agree with this grade.</p> <p>WaterNSW maintained an overarching WQMS for the organisation as well as a WQMS for the Declared Catchment during the audit period.</p> <p>The auditor found that the overarching WQMS was consistent with the requirements of the ADWG Framework for the Management of Water Quality (the Framework) except for one minor shortcoming. WaterNSW did not review the Water Quality Incident Response Protocol by the required date and ensure currency.</p>	2020-01: By 30 June 2021, complete the review (and revision as appropriate) of the Water Quality Incident Response Protocol.


Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
2.1.3	With respect to Non-Declared Catchment Areas, Water NSW must maintain a WQMS consistent with the requirements specified in this clause.	 Non-Compliant (Material)	<p>Our auditor assigned WaterNSW a Non-Compliant (Material) grade for clause 2.1.3. We agree with this grade.</p> <p>Our auditor identified significant deficiencies across a number of areas where the FRWSS WQMS was not consistent with the ADWG Framework.</p> <p>These deficiencies are material because they could adversely impact on WaterNSW's ability to assure controlled processes to manage the risk to drinking water quality produced from the Duckmaloi Water Treatment Plant from the Oberon Dam source.</p> <p>The deficiencies included:</p> <ul style="list-style-type: none"> - Failure to maintain currency of documentation – see recommendation 2020-02 - Inadequate and out of date operations and maintenance documentation (e.g. the FRWSS operations and maintenance manual provided was out of date and included references to chemicals that were no longer used, the Operating Protocols for the Fish River Water Supply were overdue for review, the FRWSS Incident Management Plan had currency and document history gaps) – see recommendation 2020-02 - The LHD stated an expectation of engagement beyond the current level including notification of CCP instrumentation and improved treated water quality reporting - see recommendation 2020-03 - Inadequate process monitoring and reporting including discrepancies between daily monitoring recorded and that required in the Water Monitoring Program - see recommendation 2020-04 - Limitations in risk assessment process (flow diagram with missing components such as handover points and treatment processes which does not inform the risk assessment process, risk assessment not undertaken during design phase before installing new fluoridation process step) –see recommendation 2020-05 	<p>2020-02: By 31 July 2021, review and, where appropriate, amend the Fish River Water Supply Scheme Drinking Water Quality Management System against each of the 12 elements, 32 components and 76 actions of the Framework for Management of Drinking Water Quality. WaterNSW should document reviews and internal audits in the updated system at intervals appropriate to ensure effective implementation of the system. WaterNSW should review and update supporting documentation for currency, including:</p> <ul style="list-style-type: none"> - Fish River Water Supply System operations and maintenance manual - Operating Protocols for Fish River Water Supply (CD2017/173) - Fish River Water Supply Scheme Incident Management Plan (D2018/116921). <p>2020-03: By 30 June 2021, WaterNSW should engage with NSW Health Local Health Department (LHD) to determine the appropriate mechanisms for stakeholder commitment and engagement with them, including:</p> <ul style="list-style-type: none"> - Reporting on the annual review of the drinking water management system


Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
			<ul style="list-style-type: none"> - Failure to maintain appropriate systems associated with the critical control points (CCPs) and ongoing CCP instrument failures– see recommendation 2020-05 - Failure to notify the NSW Health Local Health Department (LHD) about ongoing CCP failures – see recommendation 2020-05 - Inadequate improvement processes. <p>The auditor also identified the following shortcomings:</p> <ul style="list-style-type: none"> - The water quality policy for the FRWSS WQMS was out of date – see recommendation 2020-02 - The NSW Health response protocol was out of date in the audit period, compared with the advice on NSW Health’s website - see recommendation 2020-02. <p>WaterNSW should consider the auditor’s detailed discussion of the deficiencies and shortcomings in the audit report (in Appendix D) when addressing the recommendations.</p>	<ul style="list-style-type: none"> - Routine reporting on the distribution system water quality - Notification requirements when water quality cannot be assured (including instrumentation failure). <p>2020-04: By 30 September 2021, WaterNSW should:</p> <ul style="list-style-type: none"> - Review the Fish River Water Supply System verification monitoring program to align with the monitoring that is being undertaken in the field and the requirements of the Australian Drinking Water Guidelines. NSW Health should be consulted to confirm the verification program aligns with their advice. - Review the implementation of the Fish River Water Supply System verification 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 (e.g. reporting should verify the number of samples taken).



Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
2.1.4	Water NSW must ensure that the relevant WQMSs are fully implemented and that all relevant activities are carried out in accordance with the relevant WQMS and to the satisfaction of NSW Health.	 Non-Compliant (Material)	<p>Our auditor assigned WaterNSW a Non-Compliant (Material) grade for clause 2.1.4. We agree with this grade.</p> <p>Our auditor noted good practices for the declared catchment area, including improvements in reporting and development of a health check based on the requirements of elements 2 and 3 of the ADWG Framework.</p> <p>However, our auditor identified significant deficiencies in the implementation of the WQMS for the FRWSS (non-declared catchment areas).</p> <p>We consider that the deficiencies are material because they can adversely impact on WaterNSW's ability to assure drinking water safety to its customers if not resolved. They demonstrate a lack of organisational commitment to implementing preventive measures. Senior executive review needs to be strengthened.</p> <p>The deficiencies identified included:</p> <ul style="list-style-type: none"> - Deficiencies in the risk assessment for Fish River Water Supply – see recommendation 2020-05 - Ongoing CCP instrument reliability issues while supply to customers continued – see recommendation 2020-05 - Ineffective implementation of preventive measures (e.g. the risk assessment identified one of the risk controls as 'regular inspection for animal/bird incursion', however the auditor found evidence of ingress points on the clear water storage tank at Duckmaloi Treatment Plant) – see recommendation 2020-05 - Poor change management controls for CCP limits in SCADA⁷ (the auditor found that the CCP alarms had been set higher in the SCADA system for the FRWSS than the CCP limits specified in the documentation, without evidence of authorisation for this change) – see recommendation 2020-06 	<p>2020-05: By 31 July 2021, WaterNSW should undertake a risk and Critical Control Point (CCP) review workshop for the Fish River Water Supply Stage 1 system (using D2019/30124) with key stakeholders, including the NSW Health LHD, with outcomes reviewed by relevant senior executives.</p> <ul style="list-style-type: none"> - The risk assessment should have a sound evidence base for the effectiveness of the preventive measures (including how effectively they are implemented). - The risk assessment should explicitly consider the risk of contamination of the treated water by raw water leaking through the valves connecting Stage 1 and Stage 2. - For the CCPs, the risk assessment should consider (1) the adequacy of the limits chosen, (2) validation for the limits chosen, (3) the monitoring points, (4) corrections and formalisation of procedures and (5) communication triggers with the NSW Health LHD for non-conformance or CCP instrumentation failure.

⁷ Supervisory control and data acquisition (SCADA) is a system of software and hardware elements that enable control and monitoring.


Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
			<ul style="list-style-type: none"> - Verification monitoring was not undertaken in accordance with the Water Monitoring Program – see recommendation 2020-04 - The auditor could not determine if WaterNSW was maintaining safety data sheets at the Duckmaloi Water Treatment Plant consistently with the requirements of the Procedure for Materials and Chemicals in contact with Drinking Water – see recommendation 2020-02 - Lack of clarity about the scope of the C2C (Catchment to Consumer) risk procedure and how targeted risk reviews are undertaken – see recommendation 2020-07 - Deficiencies in awareness of drinking water quality risks and responsibilities for risk management (e.g. lack of urgency in addressing the clear water integrity risks and ongoing CCP instrument reliability issues) – see recommendation 2020-08. 	<p>2020-06: By 30 June 2021, WaterNSW should develop and implement change management processes for the CCP alarms. These processes should establish who has the authority to raise the alarms above the critical limit and the incident procedures to be enacted when this change is made.</p> <p>2020-07: By 30 June 2021, WaterNSW should clarify how targeted risk reviews are undertaken, if the C2C (Catchment to Consumer) process (D2019/30124) does not apply. If the C2C process does apply, ensure that the scope of the process is changed to make this clear.</p> <p>2020-08: By 30 June 2021, WaterNSW should ensure that all relevant roles with responsibility for assembling inputs, collating outputs and contributing in a key manner to the water quality risk assessments, are trained in the requirements of process [WaterNSW ref. D2019/30124] (all inputs, steps and outputs).</p>
3.2.1	Water NSW must ensure that any water supplied to customers is supplied in accordance with a relevant WQMS and any relevant customer supply agreements.	 Compliant (Minor Shortcomings)	<p>Our auditor assigned WaterNSW a Compliant (Minor Shortcomings) grade for clause 3.2.1. We agree with this grade. Our auditor noted that in the audit period, WaterNSW had supplied water in accordance with the relevant customer supply agreements established with Sydney Water, and other major and minor customers except for the FRWSS customers.</p>	<p>Recommendations 2020-04 and 2020-09 (below) address the deficiencies related to CCP instrument reliability.</p>


Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
			<p>WaterNSW was unable to provide formal records to evidence that WaterNSW supplied water in accordance with the WQMS' requirements. As discussed in clauses 2.1.3 and 2.1.4 above, WaterNSW experienced ongoing CCP instrument failures at Duckmaloi Treatment Plant and failed to undertake verification monitoring at Glen Davis. The deficiencies with the WQMS impact on WaterNSW's ability to fully comply with this clause. However, WaterNSW was able to evidence that these issues did not impact on the quality of water supplied to the FRWSS during the audit period. The water supplied during the instrument failures was within the CCP limits and chlorine dosing had occurred. WaterNSW achieved the intent of this clause, and there was no evidence of actual threats to public health. We therefore consider WaterNSW's inability to provide formal documents to demonstrate that it supplied water in accordance with the WQMS' requirements is a minor shortcoming.</p> <p>We have discussed other deficiencies with WaterNSW's supply of water in accordance with the FRWS customer supply agreement under clause 6.1.2 below.</p>	
4.2.2	WaterNSW must manage the quality of water supplied in accordance with the relevant WQMS under clause 2.1.2 or 2.1.3.	 Compliant (Minor Shortcomings)	<p>Our auditor assigned WaterNSW a Compliant (Minor Shortcomings) grade for clause 4.2.2. We agree with this grade. For the declared catchment, our auditor was satisfied that WaterNSW had managed the quality of the water supplied to its customers appropriately and in accordance with the preventive measures in the relevant WQMS, during the audit period.</p> <p>As discussed above, with the non-declared catchment areas (i.e. the FRWSS) our auditor noted shortcomings with repeat CCP instrument failures. WaterNSW was therefore unable to provide formal records to evidence that WaterNSW supplied water in accordance with the WQMS relevant to the scheme. However, as in clause 3.2.1, as the quality of water supplied during the audit period was not impacted, we consider this issue to be a minor shortcoming. WaterNSW evidenced this by demonstrating SCADA traces and additional benchtop testing that showed that the water supplied was within the CCP limits. See recommendation 2020-09.</p>	<p>2020-09: By 30 June 2021, WaterNSW should review the appropriateness of CCP analysers at Duckmaloi Water Treatment Plant to ensure that they provide a reliable measurement of turbidity and chlorine residual.</p> <p>2020-10: By 30 June 2021, WaterNSW should review and update operational forms at Duckmaloi Water Treatment Plant to improve record keeping of operational data, including the time of data sampling and any actions taken to manage operational issues at the plant.</p>


Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
4.3.2	WaterNSW must ensure that 99% of customers who place a non-complying water order for water that is captured, stored and released to customers are contacted within 1 working day to rectify that order (calculated as a percentage of all non-complying water orders placed in the financial year).	 Non-Compliant (Non-Material)	<p>The auditor noted gaps in additional testing processes at Duckmaloi Water Treatment Plant.</p> <p>In August 2020, an external FRWSS health check assessment was conducted. The health check assessment recommended that WaterNSW should review and update its operational forms to improve record keeping of operational data. Further, the health check assessment recommended that the operational forms should include any actions taken for issues experienced at the plant. Our auditor supported this recommendation. See recommendation 2020-10.</p> <p>Our auditor assigned WaterNSW a Non-Compliant (Non-Material) grade for clause 4.2.3. We agree with this grade.</p> <p>During the audit period, WaterNSW received 149 non-complying orders that required WaterNSW to contact the customer to rectify the order. WaterNSW contacted the customers for 147 of those orders within one working day, equating to 98.66% of customers. Given this is below the required 99%, WaterNSW was non-compliant with this clause during the audit period.</p> <p>However, we consider the deficiency to be non-material given that WaterNSW missed the deadline for only two water orders in the audit period.</p> <p>WaterNSW has other 'Non-Complying but Approved' water orders. We have not included these orders in assessing WaterNSW's compliance with this clause because WaterNSW does not contact the customers about these water orders as no action is required from the customers.</p>	<p>2020-11: By 30 June 2021, WaterNSW should develop and implement procedures for reporting in line with CSR Water Performance standards under clause 4.3 of the Licence. These should (1) define the performance measure, (2) set out inclusions and exclusions and (3) include the process for reviewing, and, (4) where required, revising, the data for reporting against the performance standards, the overall calculation and any review and approval requirements</p>

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
6.1.2	WaterNSW must only supply water to customers (other than Sydney Water) in accordance with their customer supply agreements	 Non-Compliant (Material)	<p>Our auditor assigned WaterNSW a Non-Compliant (Material) grade for clause 6.1.2. We agree with this grade.</p> <p>The FRWSS filtered water⁸ customer supply agreement states “<i>The Consumer acknowledges that the water quality at the point of supply complies with the Australian Drinking Water Guidelines published by the National Health and Medical Research Council.</i>”</p> <p>We consider that this requires water supplied to the FRWSS to be consistent with ADWG requirements. WaterNSW was not able to demonstrate that the filtered water supplied met the water quality requirements of the ADWG, as required in the customer supply agreements. We have therefore found WaterNSW non-compliant with this clause.</p> <p>The deficiency adversely impacts the ability of WaterNSW to assure its FRWSS customers safe supply of filtered water that meets the requirements of the ADWG.</p>	2020-12: By 30 June 2021, WaterNSW should (1) consult with NSW Health to identify the most appropriate information in the Australian Drinking Water Guidelines that applies to the Fish River Filtered Water Supply and (2) amend the customer Supply Agreement to cover the obligations that have been agreed by consensus between WaterNSW and NSW Health.
6.6.2	<p>The Customer Advisory Group Charter must address all of the following issues:</p> <p>e) a description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred</p> <p>h) procedures for amending the charter</p>	 Non-Compliant (Non-Material)	<p>Our auditor assigned WaterNSW a Non-Compliant (Non-Material) grade for clause 6.6.2. We agree with this grade.</p> <p>WaterNSW was non-compliant with sub-clause 6.6.2(e) because its Customer Advisory Group (CAG) Charter did not include a description of the type of matters that are referred to the CAG and how these matters are referred.</p>	<p>2020-13: By 30 June 2021, WaterNSW should undertake a review of its Customer Advisory Group Charter to document matters that should be referred to the Customer Advisory Group.</p> <p>2020-14: By 30 June 2021, WaterNSW should complete its review of WaterNSW’s Customer Advisory Group Charter to document procedures for proposing and progressing an amendment to the Charter.</p>

⁸ FRWSS customers can use filtered water for stock and domestic purposes and any other uses specified in the customer supply agreement. Domestic purposes of filtered water can include both drinking and non-drinking purposes.

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
6.8.2	<p>The Code of Practice on Payment Difficulties must:</p> <p>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)</p>	 Non-Compliant (Non-Material)	<p>However, we consider that this deficiency is non-material because WaterNSW achieved this separately through emails to members seeking agenda items prior to holding the meetings. WaterNSW demonstrated CAG members' responses with requested agenda items/matters to refer to the CAG to consider at the meetings. While WaterNSW's CAG Charter is not compliant with the clause, WaterNSW is achieving the intended outcome of the clause. See recommendation 2020-13. WaterNSW was also non-compliant with sub-clause 6.6.2(h) during the audit period because its CAG did not include procedures for amending the CAG Charter. WaterNSW demonstrated that it has now drafted amendments to the Charter to address this deficiency. The drafted amendments will need to be agreed with the CAGs before it can be implemented. The amended CAG Charter will include a contact email address for submission of proposed Charter changes and a description of the process for accepting proposed changes. As this is already underway, we consider that the deficiency is now non-material. See recommendation 2020-14.</p> <p>Our auditor assigned WaterNSW a Non-Compliant (Non-Material) grade for clause 6.8.2. We agree with this grade. WaterNSW was non-compliant with sub-clause 6.8.2(b) during the audit period because its Code of Practice on Payment Difficulties did not identify circumstances under which WaterNSW may restrict the provision of services to customers that do not hold/require a water access licence (e.g. minor customers on a piped supply). The Code of Practice focuses on customers with water access licences only.</p> <p>However, we consider that this deficiency is non-material because WaterNSW demonstrated that the FRWSS raw water and filtered water customer supply agreements identify the circumstances under which WaterNSW may restrict the provision of services to customers, including customers not included in the Code of Practice. WaterNSW therefore achieves the intended outcome of the sub-clause through means other than the Code of Practice.</p>	<p>2020-15: By 30 June 2021, WaterNSW should amend its Code of Practice on Payment Difficulties to include procedures for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer including the minor/retail customers who are able to be disconnected for non-payment of services.</p>

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
6.9.1	Water NSW must maintain a procedure for receiving, responding to and resolving Complaints, which is consistent with the <i>Australian Standard AS/NZS 10002:2014: Guidelines for complaints management in organisations (AS/NZS 10002:2014)</i> or other standard approved by IPART on request by Water NSW (Internal Complaints Handling Procedure).	 Non-Compliant (Non-Material)	<p>Our auditor assigned WaterNSW a Non-Compliant (Non-Material) grade for clause 6.9.1. We agree with this grade.</p> <p>WaterNSW did not have a Complaints Management Policy setting out its commitment to the effective management of complaints, as required under clause 6.3 of AS/NZS 10002:2014. See recommendation 2020-16.</p> <p>WaterNSW had a Complaints handling and Compliments Procedure which was generally consistent with the requirements of the AS/NZS 10002:2014 (the Standard), but it had the following deficiencies:</p> <ul style="list-style-type: none"> - The procedure did not address how WaterNSW should address complaints sourced from social media specifically (deficient against clause 4.6 of the Standard) - It did not explicitly define the overall responsibilities and authorities for WaterNSW staff managing the complaints management system (deficient against clause 6.4 of the Standard) - It did not address the responsibilities and behaviour expected of complainants (deficient against clause 5.3.1 of the Standard) - It did not address complaints involving multiple parties (deficient against clause 5.3.3 of the Standard). See recommendation 2020-17. <p>We consider that these deficiencies are non-material. Despite not having a Complaints Management Policy, WaterNSW demonstrated that it is committed to managing complaints by providing adequate resources and training and support for staff handling complaints.</p> <p>During the audit period, WaterNSW did not receive any complaints via social media. Therefore, WaterNSW was not impacted by the deficiency in the procedure which did not address how to manage complaints received from social media.</p>	<p>2020-16: By 30 June 2021, WaterNSW should establish a Complaints Management Policy in accordance with the requirements of AS/NZS 10002:2014.</p> <p>2020-17: By 30 June 2021, WaterNSW should undertake a review of its Complaints Handling and Compliments Procedure to ensure:</p> <ul style="list-style-type: none"> - WaterNSW manages complaints received through social media in line with the requirements of AS/NZS 10002:2014 Clause 4.6. - WaterNSW documents the behaviour expected of both its staff and complainants in line with the requirements of AS/NZS 10002:2014 clause 5.3.1. - WaterNSW documents the process for managing complaints involving multiple parties in line with the requirements of AS/NZS 10002:2014 clause 5.3.3.

Licence clause	Requirement	Compliance grade	Audit finding	Recommendations
			WaterNSW demonstrated commitment to responding to complaints in a timely manner, documenting and investigating where there were delays and escalating complaints as necessary. Our auditor confirmed WaterNSW's performance against its own complaints performance indicators.	
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>	 Compliant (Minor Shortcomings)	<p>Our auditor assigned WaterNSW a Compliant (Minor Shortcomings) grade for clause 6.8.2. We agree with this grade. WaterNSW established a MoU with NRAR and maintained and implemented it during the audit period.</p> <p>Our auditor observed the following minor shortcomings with the MoU related to:</p> <ul style="list-style-type: none"> - The required frequency of Strategic Group meetings (one held in the audit period, not two as required) – see recommendation 2020-18 - Minor documentation currency and accuracy issues (including review cycle not marked on Area Protocols, small error in one of the dictionary items of a protocol) – see recommendation 2020-19. <p>However, these shortcomings do not appear to have impacted on WaterNSW's relationship with NRAR or capacity to work effectively in partnership with NRAR to meet agreed outcomes.</p>	<p>2020-18: By 30 June 2021, WaterNSW should review, revise and ratify the Terms of Reference for both the Strategic Group and the Operation Group, paying particular attention to areas such as frequency of meetings.</p> <p>2020-19: By 30 June 2021, WaterNSW should update the document history of the Area Protocols with a formalised cycle of review, to ensure establishment of currency and accuracy.</p>

Source: Atom Consulting, 2020 Operational Audit of WaterNSW, February 2021 (Appendix D) and IPART internal check of clauses, (Appendix E)

3 Progress on previous audit recommendations

The previous audits identified areas where WaterNSW was not fully Compliant with Licence obligations. We made recommendations to WaterNSW to address these issues.⁹ The following table outlines WaterNSW's progress in implementing these recommended actions.

WaterNSW has fully implemented 5 of the 9 previous audit recommendations. WaterNSW has partially completed 2 recommendations with identified gaps addressed in new recommendations 2020-03 and 2020-04. We have closed these 2 previous recommendations. We will review WaterNSW's progress with the outstanding issues when we review recommendations 2020-03 and 2020-04 at the next audit. The remaining 2 recommendations are still in progress.

The previous recommendations are shown in Table 3.1.

Table 3.1 WaterNSW's progress in 2020 to address our recommendations from previous audits

	Recommendation	Progress
2018-03	<p>By 31 December 2019, WaterNSW should review the operational and process control procedures underpinning its Water Quality Management System and:</p> <ul style="list-style-type: none">a) identify the required operational procedures from catchment to consumer for processes and activities under its controlb) develop a plan to compile this informationc) 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), andd) commence staff training to ensure staff are trained and proficient to implement the new operational procedures.	<p>Partially complete but closed out. WaterNSW demonstrated that it completed the recommendation for the declared catchment area and partially for the FRWSS. We have addressed the remaining issues in new recommendation 2020-03. This recommendation is therefore considered closed.</p>
2018-04	<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>Complete</p>

⁹ IPART, WaterNSW Operational Audit 2018 - Report to the Minister – Compliance Report, February 2019 and IPART, WaterNSW Operational Audit 2019 – Report to the Minister – Compliance Report, December 2019.

	Recommendation	Progress
2018-08	<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. 	Complete
2018-10	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.	Complete
2018-11	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 2017-18-10).	Complete
2018-13	By 31 December 2019, WaterNSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting.	Complete
2018-20	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>The auditor was satisfied with WaterNSW's efforts, but due to water reform being undertaken at a state level this recommendation is not yet closed. The most recent Deed of Business Transfer is still in force.</p>

Recommendation	Progress
<p>2019-01</p> <p>By 30 September 2020, WaterNSW should 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 frequency and number of <i>E. coli</i> 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). 	<p>Partially complete but closed out.</p> <p>While WaterNSW has not completed all requirements of this recommendation, we have addressed the remaining issues in new recommendation 2020-04. This recommendation is therefore considered closed.</p>
<p>2019-02</p> <p>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.</p>	<p>Ongoing</p> <p>The auditor considered that WaterNSW's approach to use DPI's minimum qualifications and competencies and fluoridation training was sound. WaterNSW noted that it was in the final stages of completing this recommendation where it was incorporating the training into its internal "myLearning" system.</p> <p>We consider that WaterNSW was on track to complete the recommendation by the due date. We will audit for completion at the next audit.</p>






Source: IPART, WaterNSW Operational Audit 2019 – Report to the Minister – Compliance Report, December 2019 and Atom Consulting, 2020 Operational Audit of WaterNSW, February 2021 (Appendix D).



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 annual audit scope for WaterNSW we apply IPART's *Compliance and Enforcement Policy, December 2017*. This policy sets out our risk-based regulatory model. Under this policy, we can:

- ▼ 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. This year, we conducted interviews remotely due to the COVID-19 pandemic.

B.2 2020 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, while generally ensuring even low-risk clauses are audited once during the term of a licence. We conduct audits 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:

- ▼ Licence context and authorisations (Part 1) – Making copies of the Licence available.
- ▼ Water Source protection and conservation (Part 2) – Water quality management system, information on the declared catchment area, catchment infrastructure works management, calculating system yield, water conservation, and research on catchments.
- ▼ Bulk Water storage and transmission (Part 3) – water management works construction, operation and maintenance, water supply, and making the procedure of how local water utilities request information from WaterNSW publicly available.

-
- ▼ Performance Standards (Part 4) – Supply Water quality and CSR Water performance standards.
 - ▼ Organisational systems management (Part 5) – Asset management systems.
 - ▼ Customer and stakeholder relations (Part 6) - Customer supply agreements for customers other than Sydney Water, water metering and monitoring, advance notification of changes to flow release patterns, customer advisory group and customer service charters, code of practice on payment difficulties, internal complaints handling procedure, making memoranda of understanding with NSW Health, EPA, and NRAR publicly available.
 - ▼ Performance monitoring and reporting (Part 7) – Operational audits and the provision of information to IPART and the auditor.

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

We consulted with DPIE, NSW Health, NRAR, EPA and EcoLogical Pty Ltd (EcoLogical),¹⁰ and sought public submissions in determining the scope of the audit. We have included the audit scope 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. EPA and EcoLogical identified no specific areas of interest for the audit.

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

- ▼ DPIE¹¹ identified the following areas of interest:
 - The roles and responsibilities agreement with DPIE regarding the conduct of conferred functions (subject of a previous recommendation). The associated issues will be considered as part of a Water Reform program being implemented by DPIE over the coming months.
 - The deed of business transfer entered into by DPIE and WaterNSW in 2016 expired on 1 July 2020 and has been extended by a year (after discussing the submission with DPIE on 16 July 2020, no changes were made to the scope in relation to the comments in the submission).
- ▼ NSW Health¹² identified the following areas of interest:
 - How WaterNSW communicates with local water utilities downstream of WaterNSW managed assets to ensure drinking water suppliers are consulted with and effectively communicated with regarding the water quality being released for drinking water supply (considered in the review of clause 6.4.1).
 - How WaterNSW manages critical assets and monitoring equipment (considered in the review of clauses 2.1.1 to 2.1.5).

¹⁰ EcoLogical is the appointed auditor to carry out the functions under section 42 of the Act in relation to the Sydney catchment area. We consulted Ecological about WaterNSW's performance because in May 2019, WaterNSW appointed Ecological, on behalf of the Minister, to conduct a catchment audit for the Sydney catchment area. Section 42(4) of the Act requires that a catchment audit for the Sydney catchment area must be undertaken at the intervals specified in the Act.

¹¹ Letter from DPIE. 3 July 2020

¹² Letters from NSW Health 17 July 2020 and 20 July 2020.

-
- How WaterNSW will integrate lessons learnt from the bushfires and torrential rain incident into future asset management (considered in the review of clauses 2.1.1 to 2.1.5).
 - How WaterNSW has incorporated the lessons learnt from the bushfires and torrential rain incident into its Drinking Water Management System and incident response procedures (considered in the review of clauses 2.1.1 to 2.1.5).
 - ▼ NRAR¹³ identified areas of improvement relating to the prompt provision of information (considered in the review of clause 6.17.1).

We received no submissions from members of the public on the 2020 audit scope.

B.3 2020 audit plan

We engaged Paradigm Digital Pty Ltd, trading as Atom Consulting, in partnership with RiskEdge Pty Ltd and Cardno (QLD) Pty Ltd to undertake the 2020 WaterNSW audit.

We held a project start-up meeting with the auditor on 8 July 2020 to agree on the project milestones, audit timing, and outline our expectations. We participated in the audit inception meeting with WaterNSW and the auditor on the first day of the audit interviews, on 21 September 2020. At this meeting, we agreed on expectations and protocols for the conduct of the audit. All parties adhered to the agreed protocols throughout the audit.

We required the auditor to undertake the following tasks:

1. Review stakeholder submissions
2. Prepare an information request (questionnaire) setting out all the requirements for information and evidence, at least 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 IPART regarding draft audit findings

¹³ Letter from NRAR, 17 July 2020

10. Prepare a final report outlining audit findings (Appendix D).

Our auditor adopted a methodology consistent with *ASAE 3100 (2017) Compliance Engagements* issued by the Auditing and Assurance Standards Board, *ISO 19011:2018 Guidelines for auditing management systems*, *AS/NZS ISO 9001:2016: Quality management systems – Requirements*, *ISO 17021:2015 Conformity Assessment – Requirements for bodies providing audit and certification of management systems* that contain principles and requirements for the competence, consistency and impartiality of the audit and certification of management systems of all types and *AS/NZS 10002:2014 Guidelines for complaint management in organizations*.

Our auditor also carried out the audit according to our *Audit Guideline - Public Water Utilities, July 2019*.¹⁴ 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 21-25 September 2020 remotely using online video conferencing facilities. On 23-24 September, the auditor also undertook a site visit to the following locations:

- ▼ Warragamba Dam and W5 fire trail to the north of the dam
- ▼ Duckmaloi Water Treatment Plant on the Fish River Water Supply Scheme.

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

¹⁴ Available on our website (<https://www.ipart.nsw.gov.au>). The latest version of the Audit Guidelines was released in July 2019.

C 2020 audit scope

2020 operational audit scope Water NSW

2020 audit scope

This document sets out the 2020 operational audit scope for Water NSW. Auditors should note any directions in the comments column of Table 2.

Audit period

The audit period is 31 August 2019 to 31 August 2020. We expect that interviews for the audit will be held in September 2020. However, this is subject to change depending on auditor availability.

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 been, 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.

Field verification locations

Table 4 lists the locations that we have visited in previous audits. Together with Water NSW, we will determine the locations that we will visit in the 2020 audits and advise the auditor before the field verification visits are scheduled to commence.

Table 1 Key

Requirement	Meaning
Audit/Internal IPART check	Audit/check clause in 2020 audit
SC	Audit of this clause not required in the 2020 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 2020 Audit scope for Water NSW

Licence clause	Operating Licence obligation	2020 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	2020 audit requirement	Comments for the auditor
	<p>h) <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> <p>i) <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		
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> <p>a) to capture and store water and to release water:</p> <p>i) to persons entitled to take the water, including release to regional towns; and</p> <p>ii) for any other lawful purpose, including the release of environmental water;</p> <p>b) to supply water to Sydney Water;</p> <p>c) to supply water to water supply authorities and to local councils or county councils prescribed by the Regulations;</p> <p>d) to supply water to persons referred to in section 7(1)(d) of the Act;</p> <p>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;</p> <p>f) to construct, maintain and operate Water Management Works (including providing or constructing systems or services for supplying water);</p> <p>g) to protect and enhance the quality and quantity of water in Declared Catchment Areas;</p> <p>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;</p>	NR	

Licence clause	Operating Licence obligation	2020 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>k) provide facilities or services that are necessary, ancillary or incidental to its Listed Functions; and</p> <p>l) conduct any business or activity (whether or not related to its Listed Functions) that it considers will further its objectives.</p>	NR	
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>	NR	
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>	NR	
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>	NR	
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>	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor				
1.2.7	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. <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>	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.	Internal IPART check	This clause is not included in the auditor's scope.				
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.	NR					
	<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						



Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
2	Water Source protection and conservation		
2.1	Water Quality Management System		

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 2019. We assigned a Compliant Minor Shortcomings grade in that audit.</p> <p>We intend to only audit Water NSW's management system against certain elements of the Australian Drinking Water Guidelines each year.</p> <p>This year we propose to audit elements 1, 2, 3, 4, 5, 6, 7 and 12. This includes the elements that we consider high-risk that we intend to audit every year. It also includes lower-risk clauses that we will audit periodically through the licence period. The auditor will check close out of shortcomings found in the WQMS against some of these elements in previous audits.</p> <p>We propose to not audit elements 8, 9, 10 or 11. . We have audited against these in previous audits. Water NSW was compliant with these elements and/or has closed out any outstanding recommendations. We will audit these again in future years.</p> <p>We have sought NSW Health's comments on Water NSW's performance against this clause. (Consider the comments in the submission)</p> <p>Auditor should consider the grades and recommendations (see below and Table 2) allocated to the remainder of clause 2.1 before grading this clause.</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 2019. We assigned a Compliant grade in that audit.</p> <p>This year, we intend to audit Water NSW's management system against elements 1, 2, 3, 4, 5, 6, 7 and 12 of the Australian Drinking Water Guidelines</p> <p>We propose to not audit elements 8, 9, 10 and 11 this year. We will audit these in future years.</p> <p>We have sought NSW Health's comments on Water NSW's performance against this clause. (Consider the comments in the submission).</p> <p>Auditor should check the following recommendation relevant to this clause for completion (see Table 3):</p> <ul style="list-style-type: none"> - 2018-04

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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><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 2019. We assigned a Compliant Minor Shortcomings grade in that audit.</p> <p>This year, we intend to audit Water NSW's management system against elements 1, 2, 3, 4, 5, 6, 7 and 12 of the Australian Drinking Water Guidelines.</p> <p>We propose to not audit elements 8, 9, 10 and 11 this year. We will audit these in future years.</p> <p>We have sought NSW Health's comments on Water NSW's performance against this clause. (Consider the comments in the submission).</p> <p>Auditor should check the following recommendations relevant to this clause for completion or progress (see Table 3):</p> <ul style="list-style-type: none"> - 2018-03 - 2019-01 - 2019-02.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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.	Audit	<p>We last audited this clause in 2019. We assigned a Compliant Minor Shortcomings grade in that audit.</p> <p>This year, we intend to audit implementation of Water NSW's management system against elements 1, 2, 3, 4, 5, 6, 7 and 12 of the ADWG.</p> <p>We propose to not audit elements 8, 9, 10 and 11 this year. We will audit these in future years.</p> <p>We have sought NSW Health's comments on Water NSW's performance against this clause. (Consider the comments in the submission).</p> <p>Auditor should check the following recommendations relevant to this clause for completion or progress (see Table 3):</p> <ul style="list-style-type: none"> - 2018-03 - 2019-01.
2.1.5	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.	Audit	<p>We last audited this clause in 2018. We assigned a Compliant grade in that audit.</p> <p>We have sought NSW Health's comments on Water NSW's performance against this clause. (Consider the comments in the submission).</p>
2.2	Catchment management		

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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.	SC	
2.3 Information on the Declared Catchment Areas			
2.3.1	<p>Water NSW must:</p> <p>a) reasonably cooperate with the Appointed Auditor;</p> <p>b) publish information collected by Water NSW on water quality relevant to Declared Catchment Areas in accordance with the Reporting Manual;</p> <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> <p>c) provide data in relation to the Catchment Health Indicators to the Appointed Auditor, in accordance with the Reporting Manual;</p> <p>d) monitor, record and compile data on the Environmental Indicators relevant to Declared Catchment Areas; and</p> <p>e) report on the Environmental Indicators in accordance with the Reporting Manual.</p>	Internal IPART check	<p>We have sought the Appointed Auditor's comments on Water NSW's performance against this clause.</p> <p>This clause is not included in the auditor's scope.</p>
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 2019. We assigned a Compliant grade in that audit.
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.	Internal IPART check	This clause is not included in the auditor's scope.
2.5 Calculating System Yield			
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> <p>a) the conclusion of any drought event affecting the Declared Catchment Area;</p> <p>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;</p> <p>c) any material change to the operating rules of the Catchment Infrastructure Works in respect of the Declared Catchment Area; or</p> <p>d) any material change to the Design Criteria in respect of the Declared Catchment Area.</p>	Audit	<p>In consultation with Water NSW, IPART will confirm if this clause has been triggered during the audit period.</p> <p>On 15 May 2020 Water NSW verbally notified us that this clause had been triggered within the audit period.</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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	On 15 May 2020 Water NSW verbally notified us that this clause had been triggered within the audit 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	On 15 May 2020 Water NSW verbally notified us that this clause had been triggered within the audit 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).	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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. 	NR	
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	Audit	This is the first audit of this clause in this licence period. IPART granted Water NSW an extension to 31 March 2020.
2.8 Research on catchments			
2.8.1	Water NSW must maintain a program of research for each Declared Catchment Area which: <ul style="list-style-type: none"> 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. 	Audit	We last audited this clause in 2018. We assigned a Compliant Minor Shortcomings grade.
2.8.2	Water NSW must report on its research programs referred to in clause 2.8.1 in accordance with the Reporting Manual.	Audit	We last audited this clause in 2018. We assigned a Compliant grade.
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 2019. We assigned a Compliant grade in that audit.
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.	Audit	We last audited this clause in 2018. We assigned a Compliant Minor Shortcomings grade in that audit. Auditor should check the following recommendations relevant to this clause for completion (see Table 3): <ul style="list-style-type: none"> - 2018-03 - 2018-08 - 2018-10 - 2018-11.
3.3 CSR Water			

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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.	SC	
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).	SC	
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.	SC	
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.	SC	
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.	SC	
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.	Internal IPART check	This clause is not included in the auditor's scope.
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.	NR	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
3.4.7	<p>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.</p> <p><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></p>	NR	
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 2019. 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).	SC	
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	
4.3.2	<p>CSR Water Delivery Performance Standard A</p> <p>Water NSW must ensure that:</p> <ul style="list-style-type: none"> 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. 	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
4.3.3	<p>CSR Water Delivery Performance Standard B</p> <p>Water NSW must ensure that:</p> <ul style="list-style-type: none"> 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. <p><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></p>	Audit	This is the first audit of this clause in this licence period.
4.3.4	<p>CSR Water Service Interruptions Performance Standard</p> <p>Water NSW must ensure that:</p> <ul style="list-style-type: none"> 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. 	Audit	This is the first audit of this clause in this licence period.
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>	Audit	This is the first audit of this clause in this licence period.
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>	Audit	This is the first audit of this clause in this licence period.
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>	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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 2019. We assigned a Compliant grade in that audit. Note to auditor: In the March 31 2020 report Water NSW notified IPART of significant changes to the AMS including the launch of a computerised Maintenance Management System and recertification. Refer to the report for details of significant changes to the AMS
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 2019. We assigned a Compliant grade in that audit
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).	SC	
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.	SC	
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>	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit Auditor should check the following recommendation relevant to this clause for completion (see Table 3): - 2018-08

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
6.1.2	Water NSW must only Supply water to these Customers in accordance with the terms and conditions of these Customer Supply Agreements.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit Auditor should check the following recommendations relevant to this clause for completion (see Table 3): - 2018-10 - 2018-11
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.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit Auditor should check the following recommendation relevant to this clause for completion (see Table 3): - 2018-10
6.2	Accounting for water		
6.2.1	Water NSW must maintain a Water Allocation Account for each Customer that holds a Water Licence.	SC	
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.	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Material grade in that audit Auditor should check the following recommendation relevant to this clause for completion (see Table 3): - 2018-13

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
6.3.2	<p>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.</p> <p><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></p>	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.	Audit	Consider the comments of NSW Health, in relation to communication with LWU in the event of operational changes.
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	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
6.5.5	Water NSW must provide the Customer Advisory Groups with adequate information within its possession or under its control necessary to enable the Customer Advisory Groups to discharge the tasks assigned to them other than information or documents that are confidential.	SC	
6.6 Customer Advisory Group Charter			
6.6.1	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.	Audit	This is the first audit of this clause in this licence period.
6.6.2	The Customer Advisory Group Charter must address all of the following issues: <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. 	Audit	This is the first audit of this clause in this licence period.
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.	NR	
6.6.4	Water NSW must make the Customer Advisory Group Charter available free of charge on its website for downloading by any person.	Internal IPART check	This clause is not included in the auditor's scope.
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.	Audit	This is the first audit of this clause in this licence period.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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.	Audit	This is the first audit of this clause in this licence period.
6.7.3	Water NSW must make the Customer Service Charter available free of charge on its website for downloading by any person.	Internal IPART check	This clause is not included in the auditor's scope.
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. 	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. There are no outstanding recommendations in relation to this clause.
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>	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. Auditor should check the following recommendation relevant to this clause for completion (see Table 3): - 2018-08
6.8.4	Water NSW must provide, free of charge, information on the Code of Practice on Payment Difficulties: <ul style="list-style-type: none"> 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	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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).	Audit	We last audited this clause in 2018. We assigned a Non-Compliant Non-Material grade in that audit. There are no outstanding recommendations in relation to this clause.
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.	SC	
6.10.2	Water NSW must: <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. 	SC	
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.	SC	
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	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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	Water NSW must: <ul style="list-style-type: none"> a) maintain a memorandum of understanding with the Secretary of the Ministry of Health entered into under section 21(1) of the Act; and b) comply with the memorandum of understanding maintained under clause 6.13.1(a). <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 have sought NSW Health's comments 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	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><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 have sought NSW Health's comments 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).	Internal IPART check	This clause is not included in the auditor's scope.
6.14 Memorandum of Understanding with Environment Protection Authority			
6.14.1	Water NSW must: <ul style="list-style-type: none"> a) maintain the memorandum of understanding with the Environment Protection Authority entered into under section 21(1) of the Act; and b) comply with the memorandum of understanding maintained under clause 6.14.1(a). <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 have sought the Environmental Protection Authority's comment on Water NSW's performance against this clause.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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	<p>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).</p>	Internal IPART check	This clause is not included in the auditor's scope.
6.15	Memorandum of Understanding with Department of Planning and Environment		
6.15.1	<p>Water NSW must:</p> <ol style="list-style-type: none"> use its best endeavours to establish and maintain a memorandum of understanding with the Department of Planning and Environment; and comply with the memorandum of understanding maintained under clause 6.15.1(a). <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>	SC	We have sought comments from the Department of Planning, Industry and Environment on Water NSW's performance against this clause.
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 Industry		
6.16.1	<p>Water NSW must:</p> <ol style="list-style-type: none"> agree in writing with the Department of Industry the roles and responsibilities regarding the conduct of Conferred Functions specified in Schedule A of this Licence; and comply with the agreement established under clause 6.16.1(a). <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>	SC	<p>We have sought comments from the Department of Planning, Industry and Environment on Water NSW's performance against this clause.</p> <p>We last audited this clause in 2018. We assigned a Compliant Minor Shortcomings grade.</p> <p>Auditor should check the following recommendation relevant to this clause for completion (see Table 3):</p> <p>- 2018-20</p>

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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>	NR	
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>	Audit	<p>This is a new clause which was included in the licence on 13 February 2019.</p> <p>This is the first audit of this clause in this licence period.</p> <p>We have sought comments from the Natural Resources Access Regulator on Water NSW's performance against this clause. (See comments in the submission letter)</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	<p>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:</p> <p>a) this Licence;</p> <p>b) the Reporting Manual; or</p> <p>c) any other matters required by the Minister.</p> <p>(Operational Audit).</p>	NR	
7.1.2	<p>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.</p>	Internal IPART check	This clause is not included in the auditor's scope.

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
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.	Internal IPART check	This clause is not included in the auditor's scope.
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: <ul style="list-style-type: none"> 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. <p><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></p>	Internal IPART check	This clause is not included in the auditor's scope.
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: <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. 	SC	
7.2.2	Water NSW must maintain sufficient record systems that enable it to report accurately in accordance with clause 7.2.1.	SC	

Licence clause	Operating Licence obligation	2020 audit requirement	Comments for the auditor
7.2.3	<p>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.</p> <p><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></p>	NR	
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.	Internal IPART check	This clause is not included in the auditor's scope.
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.	Internal IPART check	This clause is not included in the auditor's scope.
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.	Internal IPART check	This clause is not included in the auditor's scope.
7.3.4	<p>Where this Licence requires Water NSW to provide information to IPART or an Auditor that is information to which:</p> <p>a) section 24FF of the IPART Act applies; or</p> <p>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,</p> <p>Water NSW must, to the maximum extent permitted by the law, provide that information even if it is confidential.</p>	Internal IPART check	This clause is not included in the auditor's scope.

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 by Water NSW in audit recommendations update on 31 March 2020 ^a	Guidance for 2020 audit
2018-03	Water Quality Management System clause 2.1.1 clause 2.1.3 clause 2.1.4 Water Supply clause 3.2.1	By 31 December 2019, Water NSW should review the operational and process control procedures underpinning its Water Quality Management System and: <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. 	In the 2019 audit, the auditor found that Water NSW had commenced the review of the procedures and had established a number of new procedures. However, at the time of the audit, Water NSW had not covered all processes and activities from catchment to consumer for each of Water NSW's water systems covered by the licence. Status reported on 31 March 2020: Completed	Auditor to check for completion, ensuring that the relevant operational procedures are now in place.
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.	In the 2019 audit, the auditor found that Water NSW 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. Status reported on 31 March 2020: Completed	Auditor to check for completion.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported by Water NSW in audit recommendations update on 31 March 2020 ^a	Guidance for 2020 audit
2018-08	<p>Water Supply clause 3.2.1</p> <p>Customer Supply Agreements – Customers other than Sydney Water clauses 6.1.1 and 6.8.3</p>	<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>The 2019 audit found that Water NSW had undertaken work to review and update its Customer Water Supply Agreement templates. In each case Water NSW addressed the requirements of licence clauses 6.1.3 and 6.8.4. (However, references to two acts of Parliament had not been updated). Water NSW 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, Water NSW had not yet fully planned or implemented training for users of the templates.</p> <p>Status reported on 31 March 2020: Completed</p>	Auditor to check for completion.
2018-10	<p>Water Supply clause 3.2.1</p> <p>Customer Supply Agreements – Customers other than Sydney Water clauses 6.1.2 and 6.1.3</p>	<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>The 2019 audit found that Water NSW provided a draft Register of Customer Supply Agreements which identified gaps in the provisions of the Water Supply Agreement for some customers. 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.</p> <p>Further, the register did not include minor customers in the Master List.</p> <p>Status reported on 31 March 2020: Completed</p>	Auditor to check for completion.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported by Water NSW in audit recommendations update on 31 March 2020 ^a	Guidance for 2020 audit
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).	The 2019 audit found that Water NSW had not implemented the outcomes of the review of the Customer Supply Agreement, as required by this recommendation, because it had not completed the review required in Recommendation 2018-10. Status reported on 31 March 2020: Completed	Auditor to check for completion.
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.	In the 2019 audit, Water NSW advised that it would take action in response to this recommendation once 2019 Quarter 4 billing was finalised. Status reported on 31 March 2020: Completed	Auditor to check for completion.
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.	In the 2019 audit Water NSW demonstrated 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). Status reported on 31 March 2020: Water NSW reported that this recommendation remains in progress with an expected date of completion by 30 June 2020. It requires cooperation from DPIE.	Auditor to check for completion.
2019-01	Water Quality Management System clause 2.1.1, clause 2.1.3 & clause 2.1.4	By 30 September 2020, Water NSW should review the Fish River Water Supply System verification monitoring plan to: - Identify the monitoring zones	New recommendation in 2019. Status reported on 31 March 2020:	Auditor to check for completion or progress.

Recommendation number	Operational issue (licence reference where applicable)	IPART's recommendation to the Minister	Audit findings, and status as reported by Water NSW in audit recommendations update on 31 March 2020 ^a	Guidance for 2020 audit
		<ul style="list-style-type: none"> - 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). 	Water NSW reported this recommendation as still in progress with an expected completion date by 30 September 2020.	
2019-02	Water Quality Management System clause 2.1.3	By 30 September 2020, Water NSW 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.	New recommendation in 2019. Status reported on 31 March 2020: Water NSW reported this recommendation as still in progress with an expected completion date by 30 September 2020.	Auditor to check for completion or progress.

Table 4 Previous field verification locations for Water NSW

Audit year	Location	Facility
2019	Farrer Memorial Agricultural high School, Calala	Metering site
	Chaffey Dam	Dam
<p>In 2019, we planned visits to Woronora Dam and Lake Woronora catchments. We cancelled these due to heavy rainfall and closure of the catchment. Water NSW provided a briefing in their offices instead.</p>		
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 Auditor's report on the operational audit 2020 –
WaterNSW



WaterNSW

2020 OPERATIONAL AUDIT

IPART

February 2021

Version 4.0

Document Status:	Version: 4.0			
Document History:	<i>Comments</i>	<i>Reviewer</i>	<i>Version</i>	<i>Date</i>
	Internal draft	Natalie Crawford	1.0	15-Oct-2020
	First draft report	Steven Contos	2.0	16-Oct-2020
	Revised draft report	Steven Contos	3.0	13-Nov-2020
	Final Report	Annalisa Contos	4.0	12-Feb-2021
Authors:	Dr Annalisa Contos, Dr Annette Davison (Risk Edge™), Justin Edwards (Cardno), Geoffrey Kleu (Cardno)			
Contact:	Annalisa Contos Atom Consulting 65 Cambourne Ave St Ives NSW 2075 annalisa@atomconsulting.com.au 02 9488 7742			
File Name:	IPT2005WAN_Final_Report_v4.0.docx			

Executive Summary

This report presents the findings of the audit of WaterNSW operations against the *WaterNSW Operating Licence 2017-2022* and the *Water NSW Act 2014* (NSW), consistent with audit requirements set out in IPART's Audit Guideline Public Water Utilities (July 2019) for the period 31 August 2019 to 31 August 2020.

We thank the WaterNSW staff for their conduct and professionalism during the audit, both in the provision of information prior to the interviews and during the audit interviews. The requirement for the interviews to be conducted remotely due to COVID-19 was well-managed by the WaterNSW Team.

Auditor's declaration

We confirm that:

- We have seen sufficient evidence on which to base our conclusions.
- Our audit findings accurately reflect the professional opinions of the auditors.
- We have conducted the audit, determined audit findings and prepared the report consistent with audit requirements set out in IPART's Audit Guideline Public Water Utilities (July 2019) and IPART's Request for Quote.
- Our audit findings have not been unduly influenced by the utility and/or any of its associates.

Major findings

A summary of major audit findings for the 2019-20 audit period is shown in Table 1.

Table 1. Summary of audit findings against audited licence obligations

Section	Clause	Sub clauses	Audit findings
2 Water Source protection and conservation	2.1 Water Quality Management System	2.1.1	Non-compliant (material)
		2.1.2	Compliant
		2.1.3	Non-compliant (material)
		2.1.4	Non-compliant (material)
		2.1.5	No Requirement
	2.4 Catchment Infrastructure Works management	2.4.1	Compliant
	2.5 – Calculating System Yield	2.5.1	Compliant
		2.5.2	Compliant
		2.5.3	Compliant
	2.7 – Water conservation	2.7.3	Compliant
2.8 Research on catchments	2.8.1	Compliant	
	2.8.2	Compliant	
3 Bulk Water storage and transmission	3.1 Construct, maintain and operate Water Management Works	3.1.1	Compliant
	3.2 Water Supply	3.2.1	Compliant (minor shortcomings)
4 Performance Standards	4.2 Water Supplied Performance Standards	4.2.2	Compliant (minor shortcomings)
		4.3 – CSR Water Performance Standards	4.3.2
		4.3.3	Compliant
		4.3.4	No Requirement
		4.3.5	Compliant
		4.3.6	Compliant
		4.3.7	Compliant
5 Organisational systems management	5.1 Asset Management System	5.1.1	Compliant
		5.1.2	Compliant
6 Customer and stakeholder relations	6.1 Customer Supply Agreements – Customers other than Sydney Water	6.1.1	Compliant
		6.1.2	Non-compliant (material)
		6.1.3	Compliant
	6.3 Water metering and monitoring	6.3.1	Compliant
	6.4 – Advance notification of changes to flow release patterns	6.4.1	Compliant
	6.6 – Customer Advisory Group Charter	6.6.1	Compliant
		6.6.2	Non-compliant (non-material)
	6.7 – Customer Service Charter	6.7.1	Compliant
		6.7.2	Compliant
	6.8 – Code of Practice on Payment Difficulties	6.8.2	Non-compliant (non-material)
		6.8.3	Compliant
6.9 – Internal Complaints Handling Procedure	6.9.1	Non-compliant (non-material)	
6.17 – Memorandum of Understanding with Natural Resources Access Regulator	6.17.1	Compliant (minor shortcomings)	

Recommendations

A summary of the risks of non-compliance and recommendations from the WaterNSW 2020 Operational Audit are shown in Table 2 - Table 5.

Table 2. Recommendations for Clause2 Water Source protection and conservation

Sub clause	Risk of non compliance	Recommendations
2.1.1	A non-current incident response protocol may result in inappropriate notifications or actions being undertaken in response to an incident or emergency.	Recommendation 2.1.1-1: By March 2021, ensure completion of the review (and revision as appropriate) of the Water Quality Incident Response Protocol.
2.1.3	Without an appropriately maintained Water Quality Management System, the risk posed to public health from non-compliance could be significant.	<p>Recommendation 2.1.3-1: By 31 July 2021, undertake a review of and amend where appropriate, the Fish River Water Supply Scheme Drinking Water Quality Management System against each of the 12 elements, 32 components and 76 actions of the Framework for Management of Drinking Water Quality. The updated system should document reviews and internal audits at intervals appropriate to ensure effective implementation of the system. Supporting documents should be reviewed and updated for currency including:</p> <ul style="list-style-type: none"> • Fish River Water Supply System operations and maintenance manual • Operating Protocols for Fish River Water Supply (CD2017/173) • Fish River Water Supply Scheme Incident Management Plan (D2018/116921). <p>Recommendation 2.1.3-2: By 30 June 2021, engage with NSW Health (LHD) to determine the appropriate mechanisms for stakeholder commitment and engagement with them, including:</p> <ul style="list-style-type: none"> • Reporting on the annual review of the drinking water management system • Routine reporting on the distribution system water quality • Notification requirements when water quality cannot be assured (including instrumentation failure). <p>Recommendation 2.1.3-3: By 30 September 2021, WaterNSW should:</p> <ul style="list-style-type: none"> • Review the Fish River Water Supply System verification monitoring program to align with the monitoring that is being undertaken in the field and the requirements of The NSW Health Drinking Water Monitoring Program (NSW Health 2011). NSW Health should be consulted to confirm the verification program aligns with their advice. • Review the implementation of the Fish River Water Supply System verification monitoring program to ensure that testing is undertaken in accordance with the monitoring plan

Sub clause	Risk of non compliance	Recommendations
		<ul style="list-style-type: none"> Establish review and reporting processes to confirm and report compliance with the monitoring program (e.g. reporting should verify the number of samples taken). <p>Our findings for Recommendation 2019-01 also apply to this clause.</p>
2.1.4	Without an appropriately implemented Water Quality Management System the risk posed to public health from non-compliance could be significant.	<p>Recommendation 2.1.4-1: By 31 July 2021, undertake a risk and CCP review workshop for the Fish River Stage 1 system (using D2019/30124) with key stakeholders, including the NSW Health LHD, with outcomes reviewed by senior executives. The risk assessment should have a sound evidence base for the effectiveness of the preventative measures (including how effectively they are implemented). The risk of contamination of the treated water by raw water leaking through the valves connecting Stage 1 and Stage 2 should be explicitly considered. For the CCPs, attention should be paid to the adequacy of the limits chosen, validation for the limits chosen, the monitoring points, corrections and formalisation of procedures and communication triggers with the NSW Health LHD in the event of a non-conformance or CCP instrumentation failure.</p> <p>Recommendation 2.1.4-2: By 30 March 2021, WaterNSW should develop and implement approval processes for the SCADA CCP alarms. These processes should establish who can authorise raising the alarms above the critical limit and the incident procedures to be enacted when this change is made.</p> <p>Recommendation 2.1.4-3: By 30 June 2021, clarify how targeted risk reviews are undertaken, if the C2C process (D2019/30124) does not apply. If the C2C process does apply, ensure that the scope of the process is changed to make this clear.</p> <p>Recommendation 2.1.4-4: By 31 March 2021, ensure that all relevant roles with responsibility for assembling inputs, collating outputs and contributing in a key manner to the water quality risk assessments, are trained in the requirements of process D2019/30124 (all inputs, steps and outputs).</p>

Table 3. Recommendations for Clause 3 Bulk Water storage and transmission

Sub clause	Risk of non compliance	Recommendations
3.2.1	Without effective monitoring of CCPs, there is a public health risk that unsafe drinking water is supplied.	Recommendation 4.2.2-1 and Recommendation 2019-01 apply to this observation.

Table 4. Recommendations for Clause 4 Performance Standards

Sub clause	Risk of non compliance	Recommendations
4.2.2	Without an appropriately implemented Water Quality Management System the risk posed to public health from non-compliance could be significant.	<p>Recommendation 4.2.2-1: By 30 June 2021, WaterNSW should review the appropriateness of CCP analysers at Duckmaloi Water Treatment Plant to ensure they provide a reliable measurement of turbidity and chlorine residual.</p> <p>Recommendation 4.2.2-2: By 31 March 2021, WaterNSW should review and update operational forms at Duckmaloi Water Treatment Plant to improve record keeping of operational data, including the time of data sampling and any actions taken to manage operational issues at the plant.</p>
4.3.2	The is non-compliance poses a minor regulatory risk by not meeting its CSR Water Delivery Performance Standard A.	Recommendations 4.3.2-1: By 30 June 2021, develop and implement procedures for reporting in line with CSR Water Performance standards under clause 4.3. These should define the performance measure, set out inclusions and exclusions and include the process for reviewing, and, where required revising, the data for reporting against the performance standard, the overall calculation and any review and approval requirements.

Table 5. Recommendations for Clause 6 Customer and stakeholder relations

Sub clause	Risk of non compliance	Recommendations
6.1.2	By not setting out any specific drinking water quality characteristics for the Fish River filtered water supply in the customer agreement, WaterNSW is not able to demonstrate that the water it provides these customers complies with the Australian Drinking Water Guidelines.	Recommendation 6.1.2-1: By 31 March 2021, WaterNSW should consult with NSW Health to identify the most appropriate information in the Australian Drinking Water Guidelines that applies to the Fish River Filtered Water Supply and amend the Customer Supply Agreement to cover the obligations that have been agreed by consensus between WaterNSW and NSW Health.
6.6.2	There is a risk that by not addressing all of its Customer Advisory Group Charter requirements, the Customer Advisory Group will not function as intended to provide an effective means of consultation for WaterNSW	<p>Recommendation 6.6.2-1: By 30 June 2021, undertake a review of WaterNSW's Customer Advisory Group Charter to ensure that matters to be referred to the Customer Advisory Group are documented.</p> <p>Recommendation 6.6.2-2: By 31 March 2021, undertake a review of WaterNSW's Customer Advisory Group Charter to ensure that procedures for proposing and progressing an amendment are documented.</p>
6.8.2	As WaterNSW's Debt Management Code of Practice does not identify that its minor/retail customers can be disconnected for non-payment of invoices, there is a risk that these customers may not be aware that this action may be taken against them.	Recommendation 6.8.2-1: By 30 June 2021, amend the Debt Management Code of Practice to include procedures for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer for the minor/retail customers who are able to be disconnected for non-payment of invoices.

Sub clause	Risk of non compliance	Recommendations
6.9.1	Currently WaterNSW does not meet all of the requirements of the Standard, and there is a risk that customers may be disadvantaged and not have their complaints managed appropriately and a risk that WaterNSW may not be managing all complaints effectively and efficiently in accordance with best practice.	<p>Recommendation 6.9.1-1: By 31 March 2021, establish a Complaints Management Policy in accordance with the requirements of AS/NZS 10002:2014.</p> <p>Recommendation 6.9.1-2: By 30 June 2021, undertake a review of WaterNSW's Complaints Handling and Compliments Procedure to ensure:</p> <ul style="list-style-type: none"> a) complaints received through social media accounts are managed in accordance with the requirements of AS/NZS 10002-2014 Clause 4.6 b) the behaviour expected of both its staff and complainants is documented in line with the requirements of AS/NZS 10002:2014 clause 5.3.1 a) the process for managing complaints involving multiple parties is documented in line with the requirements of AS/NZS 10002:2014 clause 5.3.3.
6.17.1	Having a document which sets out impractical or unworkable obligations, creates a risk of administrative non-compliance. Having documents which are not current or have document control uncertainty, creates a "source of truth" risk.	<p>Recommendation 6.17.1-1: By 30 June 2021, review, revise and ratify the Terms of Reference for both the Strategic Group and the Operation Group, paying particular attention to areas such as frequency of meetings.</p> <p>Recommendation 6.17.1-2: By 30 June 2021, update the document history of the Area Protocols with a formalised cycle of review, to ensure establishment of currency and accuracy.</p>

Contents

1	Introduction.....	1
1.1	Objectives.....	1
1.2	Audit method.....	1
	Audit scope	1
	Audit standard	2
	Audit steps	3
	Audit team.....	3
	Audit grades.....	4
1.3	Regulatory regime.....	5
1.4	Quality assurance process	6
2	Detailed audit findings	7
2.1	Site visit report	7
2.2	Detailed audit findings by clause	10
	Clause 2.1 – Water Quality Management System.....	10
	Clause 2.4 – Catchment Infrastructure Works management.....	41
	Clause 2.5 – Calculating System Yield	45
	Clause 2.7 – Water conservation	49
	Clause 2.8 – Research on catchments	51
	Clause 3.1 – Construct, maintain and operate Water Management Works	57
	Clause 3.2 – Water Supply	64
	Clause 4.2 – Water Supplied performance standards	69
	Clause 4.3 – CSR Water Performance Standards.....	71
	Clause 5.1 – Asset Management System	83
	Clause 6.1 – Customer Supply Agreements – Customers other than Sydney Water	97
	Clause 6.3 – Water metering and monitoring.....	107
	Clause 6.4 – Advance notification of changes to flow release patterns.....	111
	Clause 6.6 – Customer Advisory Group Charter.....	113
	Clause 6.7– Customer Service Charter	120
	Clause 6.8 – Code of practice on payment difficulties	127
	Clause 6.9 – Internal complaints handling procedure	134

Clause 6.17 – Memorandum of Understanding with Natural Resources Access Regulator	138
Previous Recommendations	141

Tables

Table 1. Summary of audit findings against audited licence obligations	iv
Table 2. Recommendations for Clause 2 Water Source protection and conservation	v
Table 3. Recommendations for Clause 3 Bulk Water storage and transmission.....	vi
Table 4. Recommendations for Clause 4 Performance Standards.....	vii
Table 5. Recommendations for Clause 6 Customer and stakeholder relations	vii
Table 6. Licence sections within the 2019-20 audit scope.....	2
Table 7. Audit team members and their qualifications.....	3
Table 8. Audit grades	4
Table 9. Key legal and formal instruments relevant to WaterNSW's operating licence ...	5
Table 10. Clause 2.1.1 compliance grade	10
Table 11. Water categories covered by the WQMS	11
Table 12. Clause 2.1.2 compliance grade	13
Table 13. Clause 2.1.3 compliance grade	20
Table 14 Clause 2.1.3 ADWG Framework element 1 key audit findings	21
Table 15 Clause 2.1.3 ADWG Framework element 2 key audit findings	22
Table 16 Clause 2.1.3 ADWG Framework element 3 key audit findings	23
Table 17 Clause 2.1.3 ADWG Framework element 4 key audit findings	23
Table 18 Clause 2.1.3 ADWG Framework element 5 key audit findings	25
Table 19 Clause 2.1.3 ADWG Framework element 6 key audit findings	26
Table 20 Clause 2.1.3 ADWG Framework element 7 key audit findings	26
Table 21 Clause 2.1.3 ADWG Framework element 12 key audit findings	27
Table 22. Clause 2.1.4 compliance grade	29
Table 23 Clause 2.1.4 ADWG Framework element 1 key audit findings	30
Table 24 Clause 2.1.4 ADWG Framework element 2 key audit findings	30
Table 25 Clause 2.1.4 ADWG Framework element 3 key audit findings	32
Table 26 Clause 2.1.4 ADWG Framework element 4 key audit findings	33
Table 27 Clause 2.1.4 ADWG Framework element 5 key audit findings	35
Table 28 Clause 2.1.4 ADWG Framework element 6 key audit findings	36

Table 29 Clause 2.1.4 ADWG Framework element 7 key audit findings 37

Table 30 Clause 2.1.4 ADWG Framework element 12 key audit findings 38

Table 31. Clause 2.1.5 compliance grade 40

Table 32. Clause 2.4.1 compliance grade 41

Table 33. Clause 2.5.1 compliance grade 45

Table 34. Clause 2.5.2 compliance grade 47

Table 35. Clause 2.5.3 compliance grade 48

Table 36. Clause 2.7.3 compliance grade 49

Table 37. Clause 2.8.1 compliance grade 51

Table 38. Clause 2.8.2 compliance grade 54

Table 39. Clause 3.1.1 compliance grade 57

Table 40. Clause 3.2.1 compliance grade 64

Table 41 Water supplied scope..... 65

Table 42. Clause 4.2.2 compliance grade 69

Table 43. Clause 4.3.2 compliance grade 71

Table 44. Clause 4.3.3 compliance grade 75

Table 45. Clause 4.3.4 compliance grade 77

Table 46. Clause 4.3.5 compliance grade 78

Table 47. Clause 4.3.6 compliance grade 81

Table 48. Clause 4.3.7 compliance grade 82

Table 49. Clause 5.1.1 compliance grade 83

Table 50. Clause 5.1.2 compliance grade 86

Table 51. Clause 6.1.1 compliance grade 97

Table 52. Clause 6.1.2 compliance grade 100

Table 53. Comparison of Wingecarribee Customer Supply Agreements with water quality reports 101

Table 54. Clause 6.1.3 compliance grade 104

Table 55. Clause 6.1.3 requirement review 105

Table 56. Clause 6.3.1 compliance grade 107

Table 57 Breakdown of readings and usage by method 109

Table 58. Clause 6.4.1 compliance grade 111

Table 59. Clause 6.6.1 compliance grade 113

Table 60. Review of Customer Advisory Group membership representation 115

Table 61. Clause 6.6.2 compliance grade	116
Table 62. Review of WaterNSW's Customer Advisory Group Charter against the clause 6.6.2 requirements.....	117
Table 63. Clause 6.7.1 compliance grade	120
Table 64. Clause 6.7.2 compliance grade	122
Table 65. Customer Service Charter responsibilities	123
Table 66. Clause 6.8.2 compliance grade	127
Table 67. Review of requirements of clause 6.8.2 in WaterNSW's Debt Management Code of Practice.....	129
Table 68. Clause 6.8.3 compliance grade	132
Table 69. Clause 6.9.1 compliance grade	134
Table 70. Clause 6.17.1 compliance grade	138

Figures

Figure 1 Asset management system framework.....	59
---	----

Glossary

Item	Detail
ADWG	NHMRC, NRMCC (2011) <i>Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy</i> . National Health and Medical Research Council, National Resource Management Ministerial Council, Commonwealth of Australia, Canberra. ISBN Online: 1864965118
AMS	Asset Management System
AS	Australian Standard
ASAE 3100	Standard on Assurance Engagements ASAE 3100 Compliance Engagements
AS ISO 19600:2015	Compliance management systems – Guidelines
AS/NZS 10002:2014	Guidelines for complaint management in organizations
AS/NZ ISO 9001:2016	Quality Management Systems – Requirements (the Quality Management System)
AS/NZS 4020:2018	Australian and New Zealand Standards for testing of products for use in contact with drinking water
ARK	Records Management System
Audit Guideline	IPART Public Water Utility Audit Guideline (July 2019)
Audit Period	The dates of 31 August 2019 to 31 August 2020 over which WaterNSW compliance is checked against certain clauses of its Operating Licence (as determined by IPART)
BOM	Bureau of Meteorology
C2C	Catchment to Consumer
CAG	Customer Advisory Group
CCP	Critical control point
CIMS	Consolidated information management system
CSR	Capture Store Release
Component	Either refers to the Element components of the ADWG Framework for the Management of Drinking Water Quality or WaterNSW WQMS component depending upon the context
DPI	NSW Department of Primary Industries (now DPIE)
DPIE	NSW Department of Primary Industry and Environment
DPIE-W	NSW Department of Primary Industry and Environment – Water
EAMS	Enterprise Asset Management System
Element	Elements of the ADWG Framework for the Management of Drinking Water Quality
EWN	Early Warning Network
Framework	Framework for Management of Drinking Water Quality
FRWS	Fish River Water Supply Scheme

Item	Detail
GL/a	gigalitres per annum
ICT	Information and communications technology
IPART	Independent Pricing and Regulatory Tribunal of NSW
ISO	International Standards Organisation
ISO 14001:2015	Environmental management systems – Requirements with guidance for use
ISO 19011:2018	Guidelines for auditing management systems
ISO 17021:2015	Conformity Assessment – Requirements for bodies providing audit and certification of management systems
ISO 55001:2014	Asset management – Management systems – Requirements
JOG	Joint Operational Group
LHD	Local Health District
Licence	WaterNSW Operating Licence 2017-2022
MCP	Maintain Capability Program
MoU	Memorandum of Understanding
NOCTSO	Notification of Change to System Operation
NRAR	Natural Resource Access Regulator
NSW Health	NSW Ministry of Health
O&M	Operation and Maintenance
RACS	Risk Assurance and Compliance System
Reporting Manual	WaterNSW Reporting Manual Operating Licence 2017-2022 (IPART July 2017)
RFS	Rural Fire Service
SCADA	System Control and Data Acquisition
SLG	Strategic Liaison Group
SWC	Sydney Water (Corporation)
SWIRL	Sydney Water Incident Recording and Learning System
ToR	Terms of Reference
WAS	Water Accounting System
WaterNSW / Water NSW	Unless specified in the Water NSW Act or licence WaterNSW is used.
WATHNET	Systems model
WFP	Water filtration plant
WTP	Water treatment plant
WQMS	Water Quality Management System
WSC	Wingecarribee Shire Council

1 Introduction

1.1 Objectives

The objective of this engagement was to conduct an audit of WaterNSW's performance against the terms and conditions (as defined in the audit scope) of its operating licence and any other Ministerially-imposed requirements for the period from 31 August 2019 to 31 August 2020, including:

- WaterNSW Operating licence 2017-2022
- WaterNSW Reporting Manual – Operating Licence 2017-2022
- IPART's Audit Guideline Public Water Utilities (July 2019)
- IPART's WaterNSW Operational Audit 2019 - Report to the Minister.

The Atom Consulting team also audited existing recommendations outstanding from previous audits and expressed an opinion on progress to meeting or closing-out these recommendations.

1.2 Audit method

Audit scope

The scope of the audit was:

- The operational licence clauses listed in Table 6. These clauses have been selected by IPART on a risk basis
- Recommendation 2018-03: Water Quality Management System clause 2.1.1, clause 2.1.3, clause 2.1.4, Water Supply clause 3.2.1
- Recommendation 2018-04: Water Quality Management System clause 2.1.2
- Recommendation 2018-08: Water Supply clause 3.2.1, Customer Supply Agreements clauses 6.1.1 and 6.8.3
- Recommendation 2018-10: Water Supply clause 3.2.1, Customer Supply Agreements 6.1.2 and 6.1.3
- Recommendation 2018-11: Water Supply clause 3.2.1; Customer agreements clause 6.1.2
- Recommendation 2018-13: Water metering and monitoring clause 6.3.1
- Recommendation 2018-20: Roles and Responsibilities with Department on Industry clause 6.16.1
- Recommendation 2019-01: Water Quality Management System clauses 2.1.1, 2.1.3 & 2.1.4
- Recommendation 2019-02: Water Quality Management System clause 2.1.3.

Table 6. Licence sections within the 2019-20 audit scope

Section	Clause	Sub clauses
2. Water Source protection and conservation	2.1 – Water Quality Management System	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5
	2.4 – Catchment Infrastructure Works management	2.4.1
	2.5 – Calculating System Yield	2.5.1, 2.5.2, 2.5.3
	2.7 – Water conservation	2.7.3
	2.8 – Research on catchments	2.8.1, 2.8.2
3. Bulk Water storage and transmission	3.1 – Construct, maintain and operate Water Management Works	3.1.1
	3.2 – Water Supply	3.2.1
4. Performance Standards	4.2 – Water Supplied Performance Standards	4.2.2
	4.3 – CSR Water Performance Standards	4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7
5. Organisational systems management	5.1 – Asset Management System	5.1.1, 5.1.2
6. Customer and stakeholder relations	6.1 – Customer Supply Agreements – Customers other than Sydney Water	6.1.1, 6.1.2, 6.1.3
	6.3 – Water metering and monitoring	6.3.1
	6.4 – Advance notification of changes to flow release patterns	6.4.1
	6.6 – Customer Advisory Group Charter	6.6.1, 6.6.2
	6.7 – Customer Service Charter	6.7.1, 6.7.2
	6.8 – Code of Practice on Payment Difficulties	6.8.2, 6.8.3
	6.9 – Internal Complaints Handling Procedure	6.9.1
6.17 – Memorandum of Understanding with Natural Resources Access Regulator	6.17.1	

Audit standard

In conducting the audit, the auditors are following IPART's Audit Guideline Public Water Utilities (July 2019).

Regard was also given to the following standards and codes, especially where these provided specific detail that is appropriate to the audit:

- ASAE 3100 (2017) Compliance Engagements issued by the Auditing and Assurance Standards Board
- ISO 19011:2018 Guidelines for auditing management systems
- AS/NZS ISO 9001:2016: Quality management systems – Requirements

- ISO 17021:2015 Conformity Assessment – Requirements for bodies providing audit and certification of management systems (contains principles and requirements for the competence, consistency and impartiality of the audit and certification of management systems of all types)
- AS/NZS 10002:2014, Guidelines for complaint management in organizations.

Audit steps

The audit process was conducted as described in the IPART's Audit Guideline Public Water Utilities (July 2019).

Audit team

The audit team and audit qualifications are provided in Table 7.

Table 7. Audit team members and their qualifications

Team Member	Details
Dr Annalisa Contos Atom Consulting Lead Auditor	<p>Dr Annalisa Contos holds the following auditor qualifications:</p> <ul style="list-style-type: none"> • A registered Exemplar Global lead auditor (Certificate No. 113465): <ul style="list-style-type: none"> – Exemplar Global -DW (Drinking Water) – Exemplar Global -RW (Recycled Water) – Exemplar Global TL-AU (Lead Auditor) – Skill Examiner • NSW IPART (Independent Pricing and Regulatory Tribunal) qualified: <ul style="list-style-type: none"> – Lead Auditor Licence and Regulatory Compliance – Lead Auditor and Area Specialist Infrastructure Performance – Lead Auditor and Area Specialist Drinking Water Quality – Lead Auditor and Area Specialist Recycled Water Quality – Lead Auditor and Area Specialist Sewage Management • Area Specialist Environmental Management
Dr Annette Davison Risk Edge™ Auditor	<p>Dr Annette Davison holds the following auditor qualifications:</p> <ul style="list-style-type: none"> • Moderating Auditor, registered by the Water Services Association of Australia (WSAA) with skills to use the WSAA "Aquality" benchmarking tool • A registered Exemplar Global lead auditor (Certificate No. 12454): <ul style="list-style-type: none"> – Exemplar Global-DW (Drinking Water) – Exemplar Global TL-AU (Lead Auditor) – Certified ISO 22000 competency from NCSI (Food Safety Management Systems) • NSW IPART (Independent Pricing and Regulatory Tribunal) qualified: <ul style="list-style-type: none"> – Lead Auditor and Area Specialist Drinking Water Quality – Lead Auditor and Area Specialist Recycled Water Quality – Lead Auditor and Area Specialist Sewage Management – Lead Auditor and Area Specialist Environmental Management – Lead Auditor Licence and Regulatory Compliance • Auditor Retail Supply
Justin Edwards Cardno Auditor	<p>Mr Justin Edwards holds the following auditor qualifications</p> <ul style="list-style-type: none"> • NSW IPART (Independent Pricing and Regulatory Tribunal): <ul style="list-style-type: none"> – Lead Auditor and Area Specialist Infrastructure Performance – Lead Auditor Licence and Regulatory Compliance – Lead Auditor and Area Specialist Sewage Management – Lead Auditor and Area Specialist Retail Supply • Exemplar Global TL-AU (Lead Auditor)

Team Member	Details
Natalie Crawford Atom Consulting Quality Assurance	Natalie Crawford holds the following auditor qualifications: <ul style="list-style-type: none"> • A registered Exemplar Global lead auditor (Certificate No. 130608): <ul style="list-style-type: none"> – Exemplar Global -DW (Drinking Water) – Exemplar Global -RW (Recycled Water) – Exemplar Global TL-AU (Lead Auditor) • NSW IPART (Independent Pricing and Regulatory Tribunal) qualified: <ul style="list-style-type: none"> – Auditor Licence and Regulatory Compliance – Auditor and Area Specialist Drinking Water Quality – Auditor and Area Specialist Recycled Water Quality • Area Specialist Environmental Management
Geoffrey Kleu Cardno Field verification	Mr Geoffrey Kleu is a Senior Asset Management Engineer and holds the following qualifications: <ul style="list-style-type: none"> • Bachelor of Engineering (Mechatronics) Honours (Class I)

The auditors note the following constraints to audit methodology as a result of the COVID-19 pandemic:

- The audit interviews were conducted remotely using online video conferencing facilities.
- There were constraints on infrastructure able to be visited.
- During the site visits the auditors were unable to interview operational staff (these interviews were conducted remotely).

Audit grades

The audit grade definitions used in assessing the auditee's performance against the requirements are set out in Table 8.

Table 8. Audit grades

Audit finding	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's Audit Guideline Public Water Utilities (July 2019)

1.3 Regulatory regime

WaterNSW operates largely in a NSW context but must also have regard to matters outside of that jurisdiction, where those matters may affect how it does business. A summary of the key legal and regulatory instruments for WaterNSW is provided in Table 9.¹

Table 9. Key legal and formal instruments relevant to WaterNSW's operating licence²

Instrument	Relevance
<i>Competition and Consumer Act 2010</i> (Cth)	An Act for the promotion of competition and fair trading and provision for consumer protection. Could apply to the 'fitness for purpose' of any product or service supplied.
Current version of the Australian Drinking Water Guidelines	These guidelines are called up under WaterNSW Operating Licence obligations.
<i>Government Information (Public Access) Act 2009</i> (NSW)	Information may be requested from WaterNSW, which relates to aspects of the licence.
<i>Water NSW Act 2014</i> (NSW)	An Act which establishes WaterNSW, defining the functions and objectives of WaterNSW.
<i>Water NSW Operating Licence 2017-2022</i>	A licence issued by the Governor under section 11 of the <i>Water NSW Act</i> , which enables WaterNSW to provide relevant services within its area of operations. This licence also gives effect to the operational audits (this audit) to which WaterNSW is subject.
<i>Independent Pricing and Regulatory Tribunal Act 1992</i> (NSW)	Allows for the regulation of utilities such as WaterNSW including the administration and auditing of licences and pricing functions.
Memorandum of Understanding with NSW Health 2016	Sets out the working relationship between NSW Health and WaterNSW.
Memorandum of Understanding with Environment Protection Authority 2016	Sets out the working relationship between Environment Protection Authority and WaterNSW.
Memorandum of Understanding with Department of Planning and Environment	Sets out the working relationship between Department of Planning and Environment and WaterNSW.
<i>Public Health Act 2010</i> (NSW)	The objectives of this Act are to protect and promote public health, control risks to public health, promote the control and prevent the spread of infectious diseases and recognise the role of local governments in protecting public health. Supporting Regulations are intended to support the smooth operation of the Act. WaterNSW has obligations under this Act including notifying the Minister of any situation that is likely to be a risk to public health.

¹ Intended to be illustrative, not exhaustive, for the purposes of this report.

² Where legislation is identified in this table, a reference to that legislation should be taken to include any Regulation/s made pursuant to it.

1.4 Quality assurance process

Our quality assurance approach to this audit involved peer review from a qualified auditor who was not part of the on-site team. This process commenced at the development and submission of the audit questionnaires. Checks of information received were conducted and included aspects such as dates for audit scope compliance, veracity of information, coverage of the subject area being audited and depth of implementation. Professional scepticism (as per ASAE 3100) was applied as part of the document review and on-site audit. Auditors liaised frequently with each other. Support auditors were used for clauses where the audit load was heavy.

Throughout the audit report writing process, the documentation was proofread and cross-checked by the audit team members. An overall quality assurance review was conducted by the audit team leader and a peer review undertaken by a qualified auditor who was not part of the on-site team.

2 Detailed audit findings

2.1 Site visit report

Site visits to two locations were undertaken as part of the audit scope. Catchment land management, including fire trails, was discussed at Warragamba on 23/09/2020 and the Fish River Water Supply Scheme Duckmaloi Water Treatment Plant and associated treated water infrastructure were the subject of the site visit on 24/09/2020.

Audit interviews on site confirmed that staff working in the Declared Catchment Area are aware of and are committed to their water quality responsibilities. Controls relating to the management of water quality in the catchment matched those cited in documentation provided pre and post the site visit (including review and validation of the ash booms). Review of fire trail rehabilitation post the bushfires confirmed that water quality (from sediment runoff) is a key concern for implementation of management measures. The successful management of water quality in Lake Burrangorang provides validating evidence of the implementation of commitment to management of water quality maintenance in the Declared Catchment Area.

After viewing the dam structure at Warragamba, we inspected the W5 fire trail, to the north of the dam. The impacts of the bushfires that occurred within the audit period were evident. The staff were able to clearly articulate the process for allowing access for fire fighting vehicles on the fire trails; the impact on the access trails and associated drainage; and the recovery effort to return the trails to a fit for purpose condition. Staff stated that over 1,300 km of fire trails had been assessed and prioritised for repairs. The repairs of the tracks to re-instate drainage and maintain condition began in the audit period and are continuing as required. Discussion was held as to the monitoring of overall progress of the repairs and of managing each individual job. Contractors are required to provide a job safety analysis for each task and as part of their induction are informed of the hazards of working within the catchment area and advised of contamination risks. The contact number for reporting any issues was clearly displayed at the entrance to the Warragamba restricted area.

The second part of the Warragamba site visit, followed fire trail W6 to the monitoring station, and finished at the Lake Burrangorang Lookout. The impact of the flood event on the creek could clearly be seen while at the monitoring station, as well as the impact of the fires at key vantage points along the trail.

At the Duckmaloi Water Treatment Plant site, we discussed the water treatment process and the critical control points (CCPs) for this scheme. We observed that CCP monitoring for the filtration and chlorination CCPs was undertaken at the outlet of the clear water tank. Turbidity monitoring of the filtration CCP is therefore not in an appropriate location to provide information on the performance of the membrane (and therefore, the filtration CCP performance). A CCP table was observed at the plant but there was no document history or title for the table – currency could not be established based on the document alone.

Significant public health risks were observed at the clear water tank (part of the disinfection CCP). Integrity breaches were noted at more than one location, allowing potential for vermin entry and subsequent contamination of the treated water and potential to compromise the efficacy of the chlorine disinfection step. The integrity breaches consisted of missing whirlybirds on top of the tank, a gap between the outside building and the inside of the membrane building coupled with a significant gap where the filtered water pipe entered the clear water tank building. WaterNSW advised the whirlybirds had blown off in the August 2020 storm and have since been replaced. In addition, we observed a noticeable amount of bird faeces on the filtered water pipe, providing *prima facie* evidence of vermin entry and contamination. A previous risk assessment had identified a potential for ingress, but the vermin entry point had not been mitigated. The roofing over the clear water tank had signs of vegetation growth in the gutters.

The onsite laboratory was tidy and the water quality instruments, including the CCP analyser, had calibration stickers that were in date. A reagent (Bromocresol green) was not labelled with its opened date, which it should be as part of good laboratory practice and was 9 years out of date. Laminated CCP signs were observed on equipment but these did not appear to be accurate. For example, the raw water inlet valve was labelled as a CCP.

Safety data sheets were not available on site and there was no one onsite who was able to explain the working of the Chemwatch system (used by WaterNSW for managing safety data sheets).

During the audit period a fluoridation plant had been installed but had not been commissioned. Post site visit discussions and review of evidence showed that water quality risks to the existing process steps had not been considered prior to the fluoridation plant installation. We were provided with a screenshot of a risk assessment that had taken place in 2018, against the risk end points of environment and safety. We were unable to establish whether a risk assessment had been undertaken which considered the broader drinking water product quality and safety integration risks and impacts. These obligations are discussed in clause 2.1.3.

The Asset Management Policy was displayed, due for review in September 2021. The noticeboard displayed a copy of the emergency process and contact details, which had a next review date of September 2016. A process should be in place to ensure hardcopy versions of documents are updated based on the document management system. A Work, Health and Safety Policy and an Environmental Policy accompanied the Asset Management Policy, a Quality Policy was visible on a separate board. The Water Quality Policy was absent.

It was observed that a number of redundant pieces of equipment were either still in position on the treatment plant (e.g. rapid mixers on the intake side, materials handling silo) or stored on the ground around the plant (e.g. motors, and tubing on the northern and pipe sections and valves on the southern sides of the operations room). As per the disposal stage of the asset lifecycle, it is good practice to remove redundant equipment and ensure it is stored correctly. Small amounts of litter (used test strips) were observed

on the ground around the plant buildings. The southern boundary fence was not secure with a section of the cyclone fencing peeled back.

Maintenance practices were discussed with the staff member, who had a thorough understanding of requirements of the work orders and frequency of tasks pertaining to his work areas. However, when questioned about some of the asset management principles, they were less knowledgeable, indicating there is a potential disconnect between the asset planning function and the maintenance function. While it is not an imperative for all staff to understand the details of asset management, providing context to maintenance and operational staff results in improved engagement and application of the asset management system. However, WaterNSW responded that context and engagement regarding the Asset Management System is provided to all employees in maintenance functions. WaterNSW provided training records that showed that all staff at Fish River Water Supply Scheme had completed the mandatory training in Asset Management System Awareness at the time of the audit.

We do not consider that a recommendation or an opportunity for improvement is applicable in this instance as this is less a training issue than it is a culture issue, and one that would be expected to be addressed through the process of continuous improvement. In order for maintenance staff to understand the broader asset management context to which they are contributing to, such as ensuring the assets achieve their useful lives, how the current condition affects renewal forecasts, there needs to be regular engagement between the central Asset Management personnel and the field staff. This regular engagement would be expected to include:

- seeking knowledge and understanding of equipment directly from the field staff and to relay their current view on the assets performance
- how they are meeting demand
- upcoming capital project plans.

Through the continuous improvement process, asset management becomes a part of 'business as usual', not something that a separate team within the business does.

The cross-connection valve access covers were labelled appropriately and partially overgrown. The designed cross-connections between Stage 1 potable water and Stage 2 raw water lines were verified as locked. Access to the Hampton tunnel was secured and equipment labelled appropriately. Both the Rydal reservoir site and the Rydal Dam were well presented, secured and equipment labelled appropriately. The water quality verification sample point at Rydal reservoir was clearly identifiable and fit-for-purpose. Trees were observed close to the Rydal reservoir however, there were no hanging branches.

The handover valve at the Lithgow site appeared to have some corrosion, indicating a condition risk. There was no labelling (asset tags, signage or other) on this asset.

2.2 Detailed audit findings by clause

Clause 2.1 – Water Quality Management System

Clause 2.1.1

Table 10. Clause 2.1.1 compliance grade

Subclause	Requirement	Compliance grade
2.1.1	Water NSW must maintain a Water Quality Management System in accordance with this clause 2.1.	Non-compliant (material)
Risk	Target for full compliance	
Without a Water Quality Management System (WQMS), the risk posed to public health from non-compliance with this clause could be significant.	Systems and processes in place that meet the requirements of the Australian Drinking Water Guidelines Framework for Management of Drinking Water Quality and ensure the Water Quality Management System remains up to date.	

Summary of reasons for grade

WaterNSW has an overarching WQMS that outlines how the organisation addresses its obligations under this clause. The WQMS is consistent with the 12 elements of the Australian Drinking Water Guidelines (ADWG) Framework for Management of Drinking Water Quality. The WQMS is supported by documents and processes that apply across the organisation as well as processes that may be specific to the Declared or Non-Declared Catchment.

The organisation-wide components of the WQMS were found compliant with a minor shortcoming in the currency of the Water Quality Incident Response Protocol (CD2004/183) which had not been reviewed by the required date (May 2020). Evidence was sighted that the review had commenced in the audit date scope, but was not yet complete. Given the constraints on time caused by the extreme events experienced by WaterNSW within the audit date scope, the auditors consider it would have been a perverse outcome to have tried to push through the review of this protocol to meet the review date. A recommendation (2.1.1-1) is made to update the protocol.

The WQMS was found to be suitably maintained for the Declared Catchment (clause 2.1.2).

The WQMS for the Fish River Water Supply Scheme had material deficiencies across a number of areas and is not consistent with the ADWG Framework. These areas included failure to maintain appropriate systems associated with the CCPs, inadequate O&M documentation and improvement processes. These deficiencies and the recommendations to address them are in clause 2.1.3.

This clause is graded Non-compliant (material).

Discussion and notes

This clause requires WaterNSW to maintain their WQMS (CD2013/56[v5]) in accordance with clause 2.1. Therefore clause 2.1.1 requires us to audit the maintenance of the

WQMS in clause 2.1.2 (Declared Catchment) and 2.1.3 (Non-Declared Catchment) and its consistency with the ADWG.

WaterNSW has an overarching WQMS that has an A3 page per ADWG element and tabulates the *Requirements* of the ADWG, the *Components* of the WQMS, the *Assurance and References and Responsibilities*. The documents recorded under the References and Responsibilities provide line-of-sight from the WQMS to daily activities and periodic requirements.

In considering the ‘maintain’ requirement of this clause, we have audited the water quality management system against the requirements of the ADWG Framework for Management of Drinking Water Quality (the Framework) and tested where documents have been maintained (i.e. that they remain current). The audit scope was Elements 1-7 and 12 of the Framework.

The WQMS has a *Scope* page showing whether the water category is covered by the WQMS and the relevant licence clause. This scope is helpful to understand the relevant licence obligations for each supply type. Table 11 outlines the categories relating to drinking and raw water (supplied to a customer for treatment) in the WQMS scope page, considered under clause 2.1.

Table 11. Water categories covered by the WQMS

Category	Supply	Relevant licence clause under 2.1	In audit scope
Drinking water	Fish River Stage 1 Supply	2.1.3a	Yes
	Drinking water supplied to picnic areas in the Declared Catchment	2.1.2	No
	Direct private supply to houses and offices from rural WaterNSW dams	2.1.3a	No
Raw water Supplied for treatment in Declared Catchment Area	Raw water supplied to Sydney Water, Wingecarribee Shire Council, Shoalhaven City Council for Kangaroo Valley, supplementary raw water supply to Goulburn Mulwaree Council from Wingecarribee Reservoir	2.1.2	Yes
Raw water Supplied for treatment in Non-Declared Catchment areas	Raw water supply from Fish River to Oberon Council	2.1.3a	Yes

The drinking water management systems for water supplied to the picnic areas or houses and offices in rural WaterNSW dams were not in scope for the 2020 Operational Licence Audit.

The suitability of the WQMS is considered in clause 2.1.2 for the Declared Catchment and 2.1.3 for the Non-Declared Catchment. The WQMS was found to be suitably maintained for the Declared Catchment. Material deficiencies were found for the Fish River Water Supply Drinking Water Management System including failure to maintain appropriate systems associated with the CCPs (including monitoring points and critical limit change management) inadequate operational and maintenance documentation

and improvement processes. These deficiencies adversely impact the ability of WaterNSW to assure controlled processes. Non-material deficiencies and shortcomings were also noted with engagement with NSW Health and the water quality risk assessment.

Other observations

WaterNSW has a current process in place for assembling historical water quality data (CD2012/130[v5]). The *Public Health Act 2010* (NSW) and the Australian Drinking Water Guidelines are missing from the front page of the procedure. The Acts in the procedure are not identical to those listed in the Annual Water Quality Monitoring Report.

Recommendations

Recommendation 2.1.1-1: By March 2021, ensure completion of the review (and revision as appropriate) of the Water Quality Incident Response Protocol.

Additional recommendations are made in clause 2.1.3.

Opportunities for improvement

No opportunities for improvement were identified.

Clause 2.1.2

Table 12. Clause 2.1.2 compliance grade

Subclause	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> <p>a) the Australian Drinking Water Guidelines; or</p> <p>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</p> <p>c) any other requirements specified or approved by NSW Health or IPART.</p> <p>[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.</p> <p>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.]</p>	Compliant
Risk	Target for full compliance	
Without a Water Quality Management System, the risk posed to public health from non-compliance with this clause could be significant.	Evidence that a Water Quality Management System is maintained and kept up to date for the Declared Catchment Areas, that it is consistent with the ADWG, or as specified by NSW Health or IPART.	

Summary of reasons for grade

WaterNSW has established a WQMS that is consistent with the ADWG. The WQMS covers the 12 elements (although the audit scope was only Element 1-7 and 12). The WQMS detailed the procedures and processes to manage the Bulk Water Supply System within the Declared Catchment.

This clause is considered Compliant.

Discussion and notes

The overarching structure of the WaterNSW WQMS was discussed in clause 2.1.1. The audit scope was Elements 1 - 7 and 12 of the ADWG Framework.

Element 1

Drinking water quality policy

WaterNSW has a current water quality policy in place (CD2014/5[v5]). The Water Quality Policy is adequate, however it could be improved by inclusion of a statement of commitment to communication of the policy (OFI 2.1.2-1). The water quality policy is included on the WaterNSW website (though an abbreviated form of CD2014/5[v5]).

The communication of water quality responsibilities was tested and confirmed by reviewing position descriptions.

It was not possible to check if the policy was visible at WaterNSW head offices due to the nature of the remote auditing methodology.

Regulatory and formal requirements

A Legal and Other Requirements Register (CD2013/26[v3]) is in place and satisfies the process for identifying and documenting regulatory and formal requirements. Legislation, government policies and standards are covered. A key water quality standard, AS/NZS 4020 is not included. The *Competition and Consumer Act 2010* (Cth) also has relevance for water quality in terms of fitness for purpose, but has not been included. AS/NZS 4020 is recognised elsewhere so the deficiency in the register is considered as an opportunity for improvement (OFI 2.1.2-2).

Engaging stakeholders

Stakeholders are identified. Contact information is recorded in the Water Quality Contact List (D2013/94543) and formal and regulatory requirements are defined and maintained in the Legal and Other Requirements Register (CD2013/26[v3]). Evidence was provided for communication of requirements. The contact list (D2013/94543) does not have an obvious review cycle, although records show it was updated 26/06/2020 (D2020/79949). Evidence was observed during the site visit to confirm that commitment to water quality is maintained on the ground in terms of management of the Declared Catchment Area.

Liaison with stakeholders was checked with reference to documents including Customer Advisory Groups Charters and the signed MoU with NSW Health and Terms of Reference for the SLG and JOG (D2019/63497).

Element 2

Water supply system analysis

A clear system description was missing from the evidence for the Lake Burragorang risk assessment. WaterNSW noted that the risk assessment was specific to the operation of raw water supply configuration and best water quality in alternative supplies, that the system itself had not changed, that information was supplied that was specific to the scenarios being assessed and that the risk assessment was not a system risk

assessment. These facts were accepted as a reasonable approach to maintenance of information, for this context.

Assessment of water quality data

WaterNSW has a process in place for assembling historical water quality data (CD2012/130[v5]). It was current. The *Public Health Act 2010* and the Australian Drinking Water Guidelines are currently missing from the front page of the procedure.

The dashboard report (D2020/61629) and board paper (D2020/71205) show that specific hazards, events and system changes have been documented.

There was no evidence of formal water quality data assessment for the Lake Burragorang risk assessment – instead, the results of a previous risk assessment (04/03/2020) and subject matter expertise were relied on.

Hazard identification and risk assessment

Evidence was not available for the Lake Burragorang risk assessment to confirm review of the system flow diagram prior to the risk assessment. Therefore we were unable to check how WaterNSW maintains currency and accuracy of flow diagrams.

Element 3

Preventive measures and multiple barriers

Appropriate controls and multiple barriers are in place. For the Lake Burragorang risk assessment reviewed (coupled with information reviewed for clause 2.8), we confirmed that controls were identified for each significant risk. The risk assessment methodology includes a step for assessing residual risk (with the controls in place). The risk assessment includes identification of residual risk. A process is in place to capture additional controls where the residual risk is considered unacceptable although there is some room to improve how actions are added to the water quality improvement plan.

Critical control points

WaterNSW has assessed the preventive measures in the Bulk Water Supply System to identify critical control points.

The Water Quality Incident Response Protocol (CD2004/183) documents the CCPs, including the critical limits and target criteria. Turbidity and algae are the key critical monitoring parameters. These are appropriate for the risks identified in the risk assessment. The response protocol documents the mechanisms for operational control including responsible positions.

Element 4

Operational procedures

Evidence was provided that operational procedures have been reviewed and updated in the audit period. A project is underway to develop O&M manuals for the dams (see recommendation 2018-03).

Operational monitoring

WaterNSW uses telemetered instruments, field sampling and analysis to inform operational responses, including offtake and source configuration. These processes are recognised as being critical during inflow events to track and avoid turbid inflow plumes.

Realtime monitoring of turbidity at points throughout the Declared Catchment system is documented (CD2011/179[v6]) and is appropriate.

Corrective action

The “Notification of Change to System Operations” (NOCTSO) process is used to manage system changes. This process describes the proposed change, reason and water quality implications. The Water Quality Incident Response Protocol (CD2004/183) outlines corrective actions (see Element 6).

Equipment capability and maintenance

WaterNSW's Strategic Asset Management Plan provides the basis for the management of water supply infrastructure. This was audited as part of clause 5.1.

Materials and chemicals

WaterNSW has a procedure for materials and chemicals that lists approved treatment chemicals and process for obtaining risk assessment for non-approved materials and chemicals (CD2019/36 Materials and Chemicals in Contact with Drinking Water Supplies Procedure).

Element 5

Drinking water quality monitoring

The Water Monitoring Program (CD2011/179[v6]) sets out the real time and grab sample monitoring across the WaterNSW Systems. The Water Quality Data Analysis and Reporting Procedure (CD2012/130) outlines the process for reviewing, analysing and reporting on water quality data. This procedure outlines the appropriate steps to prepare routine water quality reports.

The Water Quality Incident Response Protocol (CD2004/183) discussed in Element 6 meets the requirements for the corrective actions.

A regular water quality sampling program for the Declared Catchment is documented (CD2011/179[v6]). The program documents the characteristics to be monitored, the monitoring location and the monitoring frequency. The program includes parameters important for short term decisions and understanding long term changes in the catchment.

Consumer satisfaction

WaterNSW has established a consumer complaint and response program, including appropriate training of employees. WaterNSW has a customer enquiries phone number (1300 662 077) and the website has a description of the feedback and complaints policy and a link to the customer feedback and complaints form. The broader system is audited in clause 6.9.

For Sydney Water supply systems, details of complaints are provided to the Joint Operational Group meetings. Raw Water Supply Protocols describe operational arrangements for meeting terms of the agreement and provide mechanisms for resolving issues to the customer's satisfaction. Ad hoc issues are advised via email.

Short-term evaluation of results

WaterNSW has established procedures for the daily review of water quality monitoring data and consumer satisfaction (clause 6.9) and developed appropriate internal and external reporting mechanisms. Water Quality Advisors routinely review all information from sampling, on-line instruments and lake profiles to identify potential changes in water quality in accordance with the Water Quality Data Review and Reporting Procedure. The results are reported to operational staff with recommendations for any operational changes to improve the quality of water supplied or to avoid predicted risks.

Corrective action

The Water Quality Incident Response Protocol (CD2004/183[v3]) provides guidance on required corrective actions and investigations.

Element 6

Communication

WaterNSW has established communication protocols, documented in Section 6.2 of the Water Quality Incident Response Protocol (CD2004/183).

Communications protocols and guidelines are jointly developed by WaterNSW, Sydney Water and NSW Health to ensure consistent messaging during incidents. The protocols include agreed messaging, responsibilities for issue of communications and sign off.

Evidence was sighted to confirm that the emergency scenario training aspects (D2019/142570) of the WQMS are maintained. A process is in place to revise protocols as required, including identification of opportunities for improvement.

Incident and emergency response protocols

A Water Quality Incident Response Protocol (CD2004/183) is in place, which covers all of WaterNSW's area of operations. Evidence was provided to confirm that NSW Health was involved in the development of the protocol. Communication with NSW Health is maintained through various committees as well as the Joint Communication Protocol (D2020/80593). As discussed in clause 2.1.1, the Water Quality Incident Response Protocol was due for review in May 2020. Evidence was sighted that the review had commenced in the audit date scope, but was not yet complete. The impact of this delay, given the time constraints on WaterNSW from the extreme events occurring in the audit date scope, is not considered to have impacted service delivery or incident management.

Element 7

Employee awareness and involvement

A training matrix shows how mandatory training needs are captured against roles (D2020/10640). A training report (D2020/78695) was provided as evidence to show who has been trained in water quality awareness and the currency of the training.

Currency of re-training for water quality awareness is set at 2 years. Position descriptions were provided as evidence of how awareness is captured in those documents. Maintenance of water quality awareness process is in place as there is a two-year currency set on the training for this aspect. Records are available to confirm that training is maintained with some improvements noted since the last operational audit, in response to a previous recommendation (see commentary for Recommendation 2019-02).

Employee training

Training is generally well maintained. WaterNSW has significant water quality training systems in place which are used in practice. Mandatory training requirements for all the area of operations are maintained in the training matrix (D2020/10640). See Recommendation 2019-02 for more information.

There were a small number of currency exceptions for the water quality awareness training. However, given the extenuating nature of the events occurring in the audit date scope, the currency issue is not considered material.

Element 12

Review by senior executive

At the Lake Burrangorang risk review, only one action was identified (D2020/89790).

At the interview it was confirmed that only this one action had been identified and it was not added to the improvement plan because of the transient nature of the event.

Drinking water quality management improvement plan

A water quality improvement plan is in place which satisfies the requirements of this component. There is an opportunity to formalise the decision process around which actions are transferred to the Water Quality Improvement Plan (OFI 2.1.2-3). Risk management actions can be generated from a range of sources and may be managed in a range of ways. Therefore, it is important to have a formal process which helps to direct improvement actions to the right path, in the right timeframe, for the right implementation.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

OFI 2.1.2-1: In the Water Quality Policy, consider including an explicit statement of a commitment to communication of the policy.

OFl 2.1.2-2: Review the legal and other requirements register for inclusion of AS/NZS 4020 and consider adding the *Competition and Consumer Act 2010* (Cth) as the fitness for purpose provisions may be relevant for water quality.

OFl 2.1.2-3: Develop and implement a formal process for deciding which risk improvements are transferred to the Water Quality Improvement Plan.

Clause 2.1.3

Table 13. Clause 2.1.3 compliance grade

Subclause	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> <p>a) in the case of water with the final end use as Drinking Water:</p> <p>i) a relevant quality assurance program under section 25 of the Public Health Act 2010 (NSW);</p> <p>ii) the Australian Drinking Water Guidelines; or</p> <p>iii) any other requirements as specified or approved by NSW Health or IPART,</p> <p>b) in the case of water that does not have a final end use as Drinking Water and that is not to be managed according to a Water Quality Management System that satisfies clause 2.1.3(a):</p> <p>i) the Australian Guidelines for Water Recycling; or</p> <p>ii) any other requirements as specified or approved by NSW Health or IPART.</p> <p>[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.]</p>	Non-compliant (material)

Risk	Target for full compliance
Without a Water Quality Management System, the risk posed to public health from non-compliance with this clause could be significant.	Evidence that a Water Quality Management System is maintained and kept up to date for the Non-Declared Catchment Areas, that it is consistent with the ADWG, or as specified by NSW Health or IPART.

Summary of reasons for grade

While there is a DWQMS for the Fish River Water Supply Scheme, we identified significant deficiencies across a number of areas where this document is not consistent with the ADWG Framework. Key deficiencies in the standard of care that would have been expected for the management of a drinking water supply system point to an overall deficiency in the maintenance of Element 1 obligations.

These deficiencies include:

- limitations in risk assessment process,
- failure to maintain appropriate systems associated with the CCPs
- process monitoring and reporting
- issues with currency of documentation
- inadequate operations and maintenance documentation
- inadequate improvement processes.

These deficiencies adversely impact the ability of WaterNSW to assure controlled processes for water treatment. Shortcomings were also noted with the identification of engagement requirements for NSW Health.

This clause is graded Non-compliant (material).

Discussion and notes

The Fish River Water Supply Scheme DWQMS is used to manage the risks to drinking water quality produced from the Duckmaloi Water Treatment Plant, which is supplied from the Oberon Dam (Lake Oberon). The DWQMS includes information which is static or summarised and has therefore led to currency/misinformation risks. As examples:

- An out of date water quality policy is included in the document.
- On face value, the risk register as summarised in the document appears to be Framework non-compliant as it does not provide the full context of the risk assessment undertaken.
- The improvement plan does not reflect the current actions or status of those actions.

Given that the DWQMS is supported by a range of dynamic processes and outputs, it is better practice to reference these processes and outputs, rather than include them in a static document. A recommendation is made to update the DWQMS (Recommendation 2.1.3-1)

The audit scope was Elements 1 - 7 and 12 of the ADWG Framework. Key findings for each of the elements that contributed to the grade are listed in Table 14 to Table 21.

Table 14 Clause 2.1.3 ADWG Framework element 1 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Drinking water quality policy	WaterNSW has a current water quality policy (see clause 2.1.2).	A shortcoming is that the water quality policy included in the Fish River Water Supply Scheme DWQMS (CD2019/129) is out of date.
Regulatory and formal requirements	Regulatory and formal requirements were documented in the same manner as clause 2.1.2.	N/A
Engaging stakeholders	Stakeholders were identified in the Fish River Water Supply Scheme DWQMS (CD2019/129) and are appropriate. Matters relating to Fish River Water Supply Scheme may also be covered under the MoU with NSW Health (D2016/90171).	Even though mechanisms are in place for Local Health District (LHD), engagement, the LHD stated an expectation of engagement beyond the current level, including notifications on failure of CCP instrumentation and improved treated water quality reporting (see recommendation 2.1.3-2).

Table 15 Clause 2.1.3 ADWG Framework element 2 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Water supply system analysis	There are flow diagrams included in the Fish River Water Supply DWQMS (CD2019/129).	The flow diagram does not meet the requirements of the Framework. It did not include all steps and processes. Handover points for parties other than Lithgow City Council and WaterNSW are not identified. Other omissions included the source of make-up water, bypasses or backwash water and 'clean in place' processes. It was not verified by someone with the appropriate authority to do so (see recommendation 2.1.4-1).
Assessment of water quality data	A process is in place for compiling and trending water quality data for risk assessments (D2019/30124) as discussed in clause 2.1.2.	N/A
Hazard identification and risk assessment	<p>The risk summary table, as presented in the DWQMS (Table 2) does not demonstrate all the Framework requirements.</p> <p>It is not clear if the risk assessment outcomes are for maximum or residual risk. It was confirmed post the audit interviews that the risk represented in the DWQMS is residual risk and that the Fish River Water Supply Scheme is assessed as part of the Oberon system (a C2C interim review was completed in 2018 (D2018/70182) which, apart from formal articulation of uncertainty, is Framework-compliant.</p> <p>While fluoridation was not operational during the audit period, construction of the fluoride dosing system and testing occurred. While an environment and safety risk assessment had been undertaken (2018; D2020/122951), we were unable to establish whether a risk assessment had been undertaken which considered the broader drinking water product quality and safety, process integration risks.</p> <p>Therefore, the DWQMS had not been maintained as required (Section 2, p11).</p>	<p>Construction of a new process step (fluoridation) to an existing treatment train has the potential to impact water quality outcomes through SCADA changes, process flow configuration changes, monitoring point changes/additions and training requirements. A turbidity analyser outage was noted in the Outage and Incident section of the Fish River Drinking Water Quality Report, May 2020 (D2020/53709), as a result of rapid changes in flow during testing of the fluoridation system at Duckmaloi Water Treatment Plant.</p> <p>The overarching WQMS requirements, at Element 9.3, state that risk assessments are conducted as part of the design process prior to obtaining approval to spend. While Element 9 was out of scope for this audit, it feeds into Element 2, as it impacts on the system description and the risk component (Element 3). While WaterNSW undertook consultation with the Local Health District (LHD) and followed its own plan for the fluoridation installation, we could not establish that it followed its Framework requirements, that is, to conduct a water quality risk assessment as part of the design process. See recommendation 2.1.4-1 and OFI 2.5.1-1.</p>

Table 16 Clause 2.1.3 ADWG Framework element 3 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Preventive measures and multiple barriers	The controls are generally appropriate (in the Fish River Water Supply Scheme DWQMS CD2019/129).	N/A
Critical control points	WaterNSW has assessed the preventive measures from catchment to consumer to identify critical control points. The identified CCPs are appropriate (selective abstraction, membrane filtration and chlorination).	<p>The CCP sampling point for the membrane filters, at the end of the clear water tank, does not provide the necessary assurance that the membranes are operating effectively to remove the protozoan risks identified in the risk assessment.</p> <p>The current CCP limit is appropriate for media filters, not membrane filters (which is the filtration at Duckmaloi WTP). If turbidity is to remain as the CCP monitoring parameter, the limits should be tightened to detect a deterioration in membrane performance.</p> <p>As the plant has pressure decay testing, this could also be consider a monitoring parameter for the membrane integrity CCP.</p> <p>Distribution reservoir integrity could also be considered as a CCP in line with NSW Health guidance. A recommendation to conduct a risk assessment and CCP review has been made (recommendation 2.1.4-1)</p>

Table 17 Clause 2.1.3 ADWG Framework element 4 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Operational procedures	<p>Table 11 in the Fish River Water Supply Scheme DWQMS documents the protocols and manuals for operation of the Fish River Supply System:</p> <ul style="list-style-type: none"> • Duckmaloi WFP Operation and Maintenance Manual • Duckmaloi Gas Chlorine O & M Manual • Oberon Gas Chlorine Dosing Plant O & M Manual • Oberon Dam O & M Manual Volume 1 • Oberon Dam O & M Manual Volume 2 • WaterNSW and Lithgow City Council Operating Protocols for the Fish River Water Supply • Materials and Chemicals in contact with Drinking Water Supplies Procedure <p>As we were unable to meet with the operators on-site, due to COVID-19 restrictions, we were unable to establish the presence of procedures for daily activities nor how these were drawn up into the Fish River Water Supply DWQMS.</p>	<p>A Duckmaloi Water Treatment Plant How To Guide was provided that outlines the daily activities for the plant. The document did not have approvals, an ARK number and other information such as purpose and reference documents were missing.</p> <p>The initial O&M Manual (D2020/89871) provided was out of date, including references to chemicals no longer used. The SCADA Upgrade Operators Manual (D2020/100689) was later provided as evidence; however, this does not cover the obligations from catchment to consumer (and the Fish River Water Supply Scheme DWQMS was not updated to reference this manual).</p> <p>The SCADA Upgrade Operators Manual had no reference to CCPs. See recommendation 2.1.3-1.</p>

ADWG Component	Key Findings	Shortcoming / deficiency
Operational monitoring	<p>Operational monitoring parameters at the Duckmaloi Water Treatment Plant are documented in Table 3.11 of the Water Monitoring Program (CD2011/179[v6]). This table does not include the locations of sampling.</p> <p>Sampling location are noted on The Duckmaloi Water Treatment Plant Daily Data Sheet as Oberon Raw, Duck Raw, CWT and Balance Tank. The location on the tank (inlet or outlet) are not specified.</p>	<p>There were discrepancies between the daily monitoring documented in Table 3.11 of the Water Monitoring Program and the Duckmaloi Daily Data Sheet.</p> <p>The Water Monitoring Program (p16) states that alkalinity is tested daily. The program should be updated to reflect the weekly testing that is undertaken.</p> <p>Total chlorine was not recorded on the daily data sheet but there is a requirement for it to be monitored in the program.</p> <p>Apparent colour was on the daily data sheet and being recorded but there was no requirement in the Water Monitoring Program. These discrepancies are considered a shortcoming under this clause as an issue maintaining current documentation, rather than an implementation issue under clause 2.1.4. Recommendation 2.1.3-3 is made to update the water quality monitoring program.</p>
Corrective action	<p>The "Notification of Change to System Operations" (NOCTSO) process is used to manage system changes. This process describes the proposed change, reason and water quality implications.</p>	N/A
Equipment capability and maintenance	<p>WaterNSW's Strategic Asset Management Plan provides the basis for the management of water supply infrastructure. This was audited as part of clause 5.1.</p>	N/A
Materials and chemicals	<p>WaterNSW uses the same procedures and process discussed in clause 2.1.2 to manage materials and chemicals.</p>	N/A

Table 18 Clause 2.1.3 ADWG Framework element 5 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Drinking water quality monitoring	Verification monitoring is documented in CD2011/179[v6]. Additional distribution system monitoring was being undertaken that was not documented. Issues remain with the sampling program and reporting of the verification monitoring for Fish River Water Supply. See Recommendation 2019-01 for a further discussion regarding verification monitoring in the Fish River Water Supply System.	The operating protocols for Fish River Water Supply were overdue for review (8/1/2020) and the NSW Health contact number is not correct for this system (see recommendation 2.1.3-1).
Consumer satisfaction	<p>The consumer complaint and response program discussed in clause 2.1.2 also applies to this clause.</p> <p>Monthly operational forums are held for the major customers of the Fish River Water Supply Scheme.</p> <p>A detailed discussion of the procedures and processes for WaterNSW's management of customers is included in clause 6.1 and clause 6.9.</p>	N/A
Short-term evaluation of results	The Fish River Water Supply DWQMS states that routine review of water quality data is undertaken as per the Water Quality Data Review and Reporting Procedure. Water Quality Advisors routinely review all information from sampling, on-line instruments and lake profiles to identify potential changes in water quality. Results are reported to operational staff with recommendations for any operational changes to improve the quality of water supplied or to avoid predicted risks.	The Fish River Water Supply DWQMS is silent on activities beyond the Water Quality Data Review and Reporting Procedure that are undertaken for short term results evaluation. For example, it is silent on the role of the operators in evaluating the daily results. The review of the DWQMS should address this gap (recommendation 2.1.3-1)
Corrective action	Water Supply protocols contain relevant contacts for water quality or supply issues under normal and abnormal situations. Significant water quality issues are managed under the Water Quality Incident Response Protocol (CD2004/183). Special Request monitoring is initiated to investigate any water quality anomalies or risks. Subject matter experts provide advice to relevant stakeholders after reviewing all associated data. These processes met the requirements for this component.	N/A

Table 19 Clause 2.1.3 ADWG Framework element 6 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Communication	The overarching incident and emergency and communication protocols also apply to the Fish River Water Supply as discussed in clause 2.1.2. There is an incident management plan for the Fish River Water Supply Scheme (D2018/116921).	The documentation was silent on the action to be undertaken in the case of a CCP instrument failure. NSW Health stated they would have expected to be notified given the frequency and duration of the CCP instrument outages. This is discussed further in clause 4.2. The Fish River Water Supply Scheme incident management plan could not be located on-site but was provided as additional evidence. The document had currency and document history gaps (see recommendation 2.1.3-1).
Incident and emergency response protocols	Incident and emergencies are managed by the processes such as those discussed in clause 2.1.2. There is also a Fish River Water Supply Scheme incident management plan (D2018/116921).	The NSW Health response protocol (Figure 7, p38 of the Fish River Water Supply Scheme DWQMS), is out of date (currency for the audit date period was Version 3, March 2018) compared with the advice on NSW Health's website (see recommendation 2.1.3-1).

Table 20 Clause 2.1.3 ADWG Framework element 7 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Employee awareness and involvement	Training is in place and water quality awareness training is mandated for all staff.	There is a potential deficiency in the adequacy of the assessment of water quality awareness, as part of the training process.
Employee training	See Recommendation 2019-02. Employees are trained in both role-relevant procedures and in terms of vocational requirements (e.g. Water Treatment Certificates). Further discussion is provided in recommendation 2018-03 and 2019-02.	As there is still some work to complete in relation to finalising operator competencies, there is a minor shortcoming that WaterNSW has not yet completed incorporation of the training into the myLearning system (see Recommendation 2019-02).

Table 21 Clause 2.1.3 ADWG Framework element 12 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Review by senior executive	Evidence was sighted to confirm that senior executive review of the WQMS is maintained (monthly, quarterly and annual reporting timelines).	N/A
Drinking water quality management improvement plan	<p>There is an overarching water quality improvement plan that is maintained. The Fish River Water Supply Scheme DWQMS risk management summary (p18-21) also includes water quality improvement actions.</p> <p>Some due dates for actions in the water quality improvement plan had passed. However, WaterNSW noted that the apparent deficiency was caused by the information having been added to the DWQMS at the point of revision, and did not reflect current status. This was confirmed and accepted.</p>	N/A

Other observations

The Water Quality Monitoring Program (CD2011/179[v6]) states that total aluminium is sampled in the reticulation system. As alum is no longer used as a coagulant for the plant, the purpose of fortnightly aluminium monitoring is unclear.

There are incorrect date references to the ADWG (2011) in the Fish River Water Supply DWQMS, for example 2016 on p24 and 2014 on page 34.

There are cross references to D2017/74744 in the Water Quality Incident Response Protocol. This cross reference should be replaced by a reference to the Fish River Water Supply DWQMS.

Recommendation

Recommendation 2.1.3-1: By 31 July 2021, undertake a review of and amend where appropriate, the Fish River Water Supply Scheme Drinking Water Quality Management System against each of the 12 elements, 32 components and 76 actions of the Framework for Management of Drinking Water Quality. The updated system should document reviews and internal audits at intervals appropriate to ensure effective implementation of the system. Supporting documents should be reviewed and updated for currency including:

- Fish River Water Supply System operations and maintenance manual
- Operating Protocols for Fish River Water Supply (CD2017/173)
- Fish River Water Supply Scheme Incident Management Plan (D2018/116921).

Recommendation 2.1.3-2: By 30 June 2021, engage with NSW Health (LHD) to determine the appropriate mechanisms for stakeholder commitment and engagement with them, including:

- Reporting on the annual review of the drinking water management system
- Routine reporting on the distribution system water quality
- Notification requirements when water quality cannot be assured (including instrumentation failure).

Recommendation 2.1.3-3: By 30 September 2021, WaterNSW should:

- Review the Fish River Water Supply System verification monitoring program to align with the monitoring that is being undertaken in the field and the requirements of The NSW Health Drinking Water Monitoring Program (NSW Health 2011). NSW Health should be consulted to confirm the verification program aligns with their advice.
- Review the implementation of the Fish River Water Supply System verification 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 (e.g. reporting should verify the number of samples taken).

Our findings for Recommendation 2019-01 also apply to this clause.

Opportunities for improvement

OFI 2.1.3-1: Appropriate cross references to the Fish River DWQMS should replace references to D2017/74744 in the Water Quality Incident Response Protocol.

Clause 2.1.4

Table 22. Clause 2.1.4 compliance grade

Subclause	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.	Non-compliant (material)
Risk	Target for full compliance	
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.	Evidence that the Water Quality Management System is fully implemented and that all relevant activities are carried out in accordance with the Water Quality Management System. Evidence to show that NSW Health is satisfied with the Drinking Water Quality Management System and its implementation.	

Summary of reasons for grade

Significant deficiencies in the implementation of the Fish River Water Supply Drinking Water Management System were found that adversely impact the ability to assure controlled processes and public health outcomes. These deficiencies related to processes that assured drinking water safety, including poor change management controls for CCP alarms in SCADA, ongoing CCP instrument reliability, appropriate monitoring of CCPs and gaps in vermin proofing of the clear water storage. These deficiencies adversely impact the ability of WaterNSW to assure controlled processes.

Good practices were noted for the Declared Catchment including improvements in the water quality reports and development of the Health Check Sheet for Elements 2 and 3. However, a shortcoming was noted in the implementation of WaterNSW's risk assessment process.

This clause is graded Non-compliant (material).

Discussion and notes

The audit scope was Elements 1 - 7 and 12 of the ADWG Framework. The key findings that contributed to the grade are noted in Table 23 to Table 30.

Table 23 Clause 2.1.4 ADWG Framework element 1 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Drinking water quality policy	<p>The communication of water quality responsibilities was tested and confirmed by reviewing quarterly Minutes of the Board Committee on Water Quality, Health and Catchment Protection.</p> <p>There was no water quality policy visible at the Duckmaloi Water Filtration Plant (other policies were sighted).</p>	Commitment to, and understanding of the risks to, drinking water quality in the Fish River Water Supply Scheme appears wanting given the gaps noted. In particular, the lack of urgency in addressing the materialised clear water tank integrity risks and ongoing issues with the on-line CCP monitoring.
Regulatory and formal requirements	A process (Legal and Other Requirements Register D2017/139311) is in place and satisfies the process for identifying and documenting regulatory and formal requirements.	This component requires WaterNSW to ensure responsibilities are understood and communicated to employees. There is a deficiency in the awareness of drinking water quality risks and responsibilities (as noted above). This issue should be covered by recommendation 2.1.4-4 for improving training in the risk procedure and undertaking a risk and CCP review for the Fish River Water Supply Scheme.
Engaging stakeholders	Stakeholders are engaged through the mechanisms discussed in Clause 2.1.2. Liaison with stakeholders was also checked (and confirmed) through licence clauses 6.1 and 6.8. A contact list exists (D2013/94543), includes a variety of stakeholders and is implemented in practice.	A shortcoming exists in terms of communication expectations with the LHD. This issue should be addressed in the recommendation proposed for undertaking a risk and CCP review for the Fish River Water Supply Scheme.

Table 24 Clause 2.1.4 ADWG Framework element 2 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Water supply system analysis	<p>The key findings are noted in Recommendation 2018-04. The WQMS states that "supply system schematic diagrams are reviewed prior to Catchment to Customer risk reviews or following any significant asset or system changes".</p> <p>WaterNSW confirmed that the schematics were not reviewed prior to the Lake Burragorang scenario risk assessment.</p>	While the flow diagram was not used to inform the C2C risk review (Lake Burragorang), or a risk assessment briefing paper provided prior to the assessment, subject matter experts were relied on. Given the outcomes of the risk assessment, the calibre of the subject matter experts and the successful water quality risk management outcomes, the identified shortcoming is not considered material for the Declared Catchment.

ADWG Component	Key Findings	Shortcoming / deficiency
<p>Assessment of water quality data</p>	<p>The 2018-2019 Annual Water Quality Monitoring report (D2020/29723) confirms that the procedure for assembling historical water quality data (CD2012/130[v5]) was implemented in practice.</p> <p>The dashboard report (D2020/61629) and board paper (D2020/71205) show that specific hazards, events and system changes have been documented.</p> <p>Water quality data is assessed using the processes discussed in clause 2.1.2. There is uncertainty whether the C2C risk process applies to scenario risk reviews and therefore, whether it should have been implemented.</p>	<p>See clause 2.1.2. The shortcoming is picked up below in terms of the uncertainty of implementation of water quality data analysis as part of preparation for risk assessments. However, it is noted that water quality briefings were provided by WaterNSW at the commencement of the scenario risk reviews (as recorded in the notes D2020/89790).</p>
<p>Hazard identification and risk assessment</p>	<p>While a procedure for a C2C risk review exists (D2019/30124), it is not clear if that procedure applied to the Lake Burragorang risk assessment that was provided as evidence and therefore whether the procedure should have been followed. Some steps in that procedure were not formally undertaken for the Lake Burragorang risk assessment. Any water quality risk assessment undertaken must still meet the requirements of the Framework, to satisfy WaterNSW's licence obligations.</p> <p>The risk assessment for Fish River Water Supply (D2018/70182) is largely Framework-compliant, apart from the noted deficiencies.</p>	<p>The uncertainty of application of the procedure (D2019/30124) is not a shortcoming, because of the outcomes of the risk assessment, the calibre of the subject matter experts and the successful water quality risk management outcomes. However, there is an uncertainty over whether the C2C risk procedure (D2019/30124) applies to targeted or scenario risk reviews. The procedure (D2019/30124) needs to be clarified in terms of its scope and if the scope does not include scenario risk reviews, then a separate procedure needs to be developed to ensure that licence and Framework obligations are met (see recommendation 2.1.4-4).</p> <p>Some deficiencies were noted for the risk assessment for Fish River Water Supply (D2018/70182):</p> <ul style="list-style-type: none"> • There is no column for uncertainty – some comments have been captured which could infer an assessment of uncertainty. • There is a lack of evidence for why risks have been scored in a certain way. For instance, both consequence and likelihood are changed for the residual risk, for the ingress event, with no evidence base.

Table 25 Clause 2.1.4 ADWG Framework element 3 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Preventive measures and multiple barriers	While preventive measures and multiple barriers are in place, their implementation was deficient in some areas for the Non-Declared Catchment.	<p>The 2018 risk assessment identified one of the controls as 'Regular inspection for evidence of animal/bird incursion.' However, ingress points were noted during the site visit.</p> <p>There was no evidence that sealing the ingress points into the clear water tank at Duckmaloi Water Treatment Plant had been considered (as noted in the Water Quality Improvement Plan (p20 CD2019/129).</p> <p>Critical spares were noted as a reactive control in the risk assessment; however a critical spare was not available for the treated water turbidity analyser (a CCP), requiring the raw water analyser to be used.</p>
Critical control points	Evidence of CCP implementation included review of the turbidity CCPs for WD007 on the Warragamba pipeline for the Declared Catchment. The SCADA traces for CCPs the Fish River Water Supply Scheme were reviewed from the water quality reports. The alarm settings were reviewed in the interview.	<p>During the audit interviews, we observed that the CCP alarms for the SCADA system were set higher than in the CCP documentation for the Fish River Water Supply Scheme. High and High High alarms were both set to 1.0 NTU. Based on the CCP tables, the High High should have been 0.5 NTU. This poses a risk that the plant does not shut down when a CCP is exceeded. We received evidence that this change occurred after the audit period, therefore water wasn't supplied that had exceeded the CCP as a result of this change within the audit period.</p> <p>Unauthorised changes to CCP limits can significantly compromise water safety as the effectiveness of downstream preventitive measures is also compromised. See recommendation 2.1.4-2.</p>

Table 26 Clause 2.1.4 ADWG Framework element 4 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Operational procedures	<p>The status of operational procedures was tested as part of the audit of Recommendation 2018-03. As part of the audit interviews, procedures were viewed on the intranet. Due to COVID19 restrictions we could not meet with the operators onsite and during the interviews the operators were available by voice only, it was therefore not possible to establish their understanding of the operational procedures.</p>	N/A
Operational monitoring	<p>The water quality reports for Lake Burrorangang (e.g. F2016/354), Lake Oberon and Duckmaloi Weir (e.g. D2019/117247) and Fish River Drinking Water Quality Reports (e.g. D2020/73431) provide strong evidence of that operational monitoring was undertaken. The Water Quality Analysis Data Analysis and Reporting Procedure (CD2012/130) documents how these reports are to be prepared.</p> <p>The implementation of the water quality monitoring program was tested through the review of the Water Quality Data Analysis and Reporting Procedure (CD2012/130) against the Lake Burrorangang Water Quality Reports for 17 and 27 September 2019 and 17 and 28 August 2020. We noted that in the 17 August 2020 report the Outlook section had not been included. WaterNSW advised during the interviews that there was an incident occurring at that time. Due to the rapidly changing nature of the incident, this information had already been communicated. Two e-mails were sighted, with both WaterNSW and Sydney Water recipients with relevant information.</p>	<p>The Fish River Drinking Water Quality Reports document ongoing issues with the CCP instrumentation (e.g. D2019/110589, D2020/38740 and D2020/90461). Water was supplied for periods of time when these instruments were off-line.</p> <p>There were no records of increased water quality testing during this time although increased testing was reported in the Drinking Water Quality Reports and results logged in the RACs incident system. See clause 4.2 for further discussion and recommendation 4.2.2-2)</p>
Corrective action	<p>The water quality reports document the corrective actions that were taken. The plant diary at Duckmaloi Water Treatment Plant also documented the corrective actions, included instrument cleaning (e.g. 20/4/2020). E-mail correspondence was provided of actions and notifications in relation to unexpected events (discussed above)</p> <p>During the site visit in the Warragamba catchment we observed a new water monitoring station constructed following the fires.</p>	N/A

ADWG Component	Key Findings	Shortcoming / deficiency
Equipment capability and maintenance	<p>The implementation of equipment maintenance is considered in the Asset Management clause (clause 5.1).</p> <p>We have focussed the discussion in this section on instrumentation.</p> <p>WaterNSW demonstrated that they had established a program for regular inspection and maintenance of equipment, including monitoring equipment, but providing evidence of the maintenance of the vertical profiling system (VPS) located 500 m upstream of Warragamba Dam Wall (site code DWA2). The vertical profiler is one of the most critical water monitoring assets as it provides a profile of the water quality as it approaches the offtake screens. The maintenance schedule specifies a monthly maintenance requirement. Records were provided for calibration, service and a data QC check from the hydrometric database (D2020/89883 DWA2 VPS data QC report, D2020/89884 DWA2 EXO calibrations, D2020/89885 DWA2 service 010720, D2020/89886 DWA2 schedule FY 20-21).</p> <p>We observed calibration stickers dated 23/3/2020 on the analysers at Duckmaloi Water Treatment Plant, demonstrating they had been serviced in the audit period.</p> <p>Evidence was provided that the work order for Daily Water Operations-Minor Service had been completed weekly during the audit period (Duckmaloi daily operations work order May 2019 to Oct 2020).</p>	<p>Throughout the audit period there were problems with the CCP analysers at Duckmaloi Water Treatment Plant. We understand this was due to the precipitation of higher than normal manganese levels blocking filters. The ADWG states (p40) <i>"Monitoring failures should not compromise the system and in some cases, particularly at critical control points, backup equipment should be considered."</i> While we are not suggesting Duckmaloi Water Treatment Plant installs back-up analysers, we include this reference to highlight the importance of reliable analysers. See clause 4.2 for further discussion of this issue and recommendation 4.2.2-1.</p> <p>WaterNSW advised that the ventilation fans had blown off in a storm in August.</p>

ADWG Component	Key Findings	Shortcoming / deficiency
Materials and chemicals	Evidence was provided of the IXOM delivery receipt of chlorine drums for Duckmaloi WTP (D2020/89891).	<p>The Procedure for Materials and Chemicals in contact with Drinking Water Supplies (CD2019/36) notes that <i>"Maintenance of water treatment infrastructure includes Clean In Place (CIP) activities involving sulfuric acid or ethylenediamine tetraacetic acid (EDTA). Only food grade chemicals may be used for cleaning water treatment assets and Safety Data Sheets must be retained on site where cleaning chemicals are stored."</i> We could not locate the Safety Data Sheets at Duckmaloi WTP. During the site visit we were advised that the ChemWatch system was used to manage the Safety Data Sheets, however there was no-one on site or in the interviews who could demonstrate how this system worked. Screenshots were provided of chemicals after the interviews. We could not confirm from the screenshots whether the Safety Data Sheets meet the requirements of CD2019/36.</p> <p>Implementation of recommendation 2.1.3-1 should address this issue.</p>

Table 27 Clause 2.1.4 ADWG Framework element 5 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Drinking water quality monitoring	<p>Verification testing documented in Water Monitoring Program (CD2011/179[v6] was tested and found to be undertaken in accordance with the program as discussed in Table 18 above). The exception to this was Glen Davis.</p> <p>See also Recommendation 2019-01 for a further discussion regarding verification monitoring in the Fish River Water Supply System.</p>	<p>Verification testing documented in Water Monitoring Program (CD2011/179[v6] was not undertaken for turbidity, chlorine residual and pH at Glen Davis. WaterNSW advised <i>"Glen Davies pH and turbidity results were not consistently reported due to the proximity of WaterNSW and Lithgow City Council monitoring points. Lithgow City Council also undertakes monitoring more frequently. WaterNSW maintains ongoing communication with Lithgow City Council on monitoring results for Glen Davis. Verification testing in the reticulation system is conducted by Lithgow City Council as agreed with the LHD. Any issues observed in verification monitoring are reported to WaterNSW and operational monitoring may be conducted to confirm and adjust chlorination levels if required."</i> An example of this was provided as additional evidence (D2020/115021). A recommendation has been made to</p>

ADWG Component	Key Findings	Shortcoming / deficiency
		update the monitoring plan (recommendation 2.1.3-4)
Consumer satisfaction	<p>The WaterNSW has a customer enquiries phone number (1300 662 077) and the website has a description of the feedback and complaints policy and a link to the customer feedback and complaints form. Monthly operational forums are held for the major customers of the Fish River Water Supply Scheme.</p> <p>A detailed discussion of the procedures and processes for WaterNSW's management of customers is included in clause 6.1 and clause 6.9.</p>	N/A
Short-term evaluation of results	<p>Processes were in place and implemented for the short-term analysis of results. This included the review of water quality data by operation and water quality analysts. Evidence was supplied for the response to high algal levels in Wingecarribee reservoir.</p>	N/A
Corrective action	<p>WaterNSW communicates any recommendations made via routine reports or updates using the "Notification of Change to System Operations" (NOCTSO) process, describing proposed change, reason and water quality implications. Evidence was provided for the Warragamba Dam Outlet Reconfiguration 6 August 2020 due to increasing manganese (D2020/84695 NOCTSO).</p>	N/A

Table 28 Clause 2.1.4 ADWG Framework element 6 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Communication	<p>Records are in place to confirm that only those with appropriate authority to do so, have had liaison with the media during and after water quality incidents and emergencies.</p> <p>Communication protocols had been implemented for incidents and emergencies, including an update on 17/8/2020 and 20/8/2020 to relevant staff at WaterNSW and Sydney Water and the Wingecarribee algal event (viewed in RACS).</p>	N/A

ADWG Component	Key Findings	Shortcoming / deficiency
Incident and emergency response protocols	<p>Records are in place that confirm the Water Quality Incident Response Protocol (CD2004/183) was followed - including details of incidents and emergencies, debriefs and corrective actions in response to the February Warragamba inflow event.</p> <p>The implementation of incident and emergency response protocols is further discussed in clause 5.2 (Bushfires and Torrential Rain Incident)</p> <p>The management of CCPs was tested through the review of the Warragamba pipeline analysers. The SCADA trace was viewed for February and actions taken to manage the CCP exceedance were audited against the documented procedures and found to align.</p>	<p>There was no evidence of a water quality incident and emergency response folder at the Duckmaloi Water Filtration Plant (this was provided later as evidence).</p> <p>There were on-going issues with the reliability of the turbidity and chlorine CCP analysers during the audit period. Improved incident management procedures should be in place when CCP instrumentation is unavailable. See clause 4.2 for further discussion of this issue.</p>

Table 29 Clause 2.1.4 ADWG Framework element 7 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Employee awareness and involvement	Records were available to confirm the approach to employee awareness and training (see Recommendation 2019-02).	Some shortcomings were noted in implementing measures to ensure currency of training as already noted.
Employee training	Training in water quality management is implemented by WaterNSW.	<p>We observed a disconnect between the training undertaken in relation to the importance of water quality risk mitigation and implementation of risk mitigation in practice.</p> <p>It is not clear that the importance of water quality and responsibilities are well understood (and therefore, how water quality awareness is assessed). The evidence for this is that a water quality risk review had not been undertaken before adding in the fluoridation process step to the plant and the lack of urgency for the identified action to reduce the significant risk existing from the open ingress points to the reservoir and failure to mitigate ongoing problems with CCP monitoring.</p> <p>Not implementing appropriate water quality awareness checks for the Fish River Water Supply is therefore a deficiency.</p>

Table 30 Clause 2.1.4 ADWG Framework element 12 key audit findings

ADWG Component	Key Findings	Shortcoming / deficiency
Review by senior executive	Review is implemented in practice following the procedures and processes noted in clause 2.1.2. Water quality dashboard reports are provided (D2020/61629) and reviewed, an annual WQMS report is developed and reviewed (D2020/71509) and an annual system health check is completed and reviewed (D2020/78736). In addition, evidence was sighted to confirm that review occurs at the highest level, including board involvement (D2020/78735).	While the Fish River Water Supply is covered in the review process, given the findings from the site visit and overall deficiencies in the Fish River water Supply DWQMS, implementation of senior executive review needs to be strengthened for this catchment.
Drinking water quality management improvement plan	An improvement plan is in place (D2019/53719) and review implemented in general. Improvements are discussed in the JOG meetings with NSW Health. Accountabilities, due dates and status of actions are recorded and reviewed periodically. RACS is used to track actions. Water quality awareness training is mandatory for all staff and includes information on improvements and the WQIP (D2020/89952).	Implementation of this element for the Fish River Water Supply Scheme is lacking, as an action to treat the identified risk for the clear water tank ingress was not observed in the Water Quality Improvement Plan (D2019/53719).

Other observations

Other observations that did not contribute to the audit grade are noted below.

Declared catchment

Risk Assessment

For the Lake Burragorang risk review, the outcomes generally met the requirements of Element 2 and 3 with one small exception. Uncertainty had not been specifically assessed for each hazard or hazardous event, but could be inferred from the discussion in the spreadsheet (columns C, F, I and O in particular of D2020/89795) and the commentary in D2020/89790. This exception is therefore considered non-material and an opportunity for improvement has been captured.

Recommendations

Recommendation 2.1.4-1: By 31 July 2021, undertake a risk and CCP review workshop for the Fish River Stage 1 system (using D2019/30124) with key stakeholders, including the NSW Health LHD, with outcomes reviewed by senior executives. The risk assessment should have a sound evidence base for the effectiveness of the preventative measures (including how effectively they are implemented). The risk of contamination of the treated water by raw water leaking through the valves connecting Stage 1 and Stage 2 should be explicitly considered. For the CCPs, attention should be paid to the adequacy of the limits chosen, validation for the limits chosen, the monitoring points, corrections and formalisation of procedures and communication

triggers with the NSW Health LHD in the event of a non-conformance or CCP instrumentation failure.

Recommendation 2.1.4-2: By 30 March 2021, WaterNSW should develop and implement approval processes for the SCADA CCP alarms. These processes should establish who can authorise raising the alarms above the critical limit and the incident procedures to be enacted when this change is made.

Recommendation 2.1.4-3: By 30 June 2021, clarify how targeted risk reviews are undertaken, if the C2C process (D2019/30124) does not apply. If the C2C process does apply, ensure that the scope of the process is changed to make this clear.

Recommendation 2.1.4-4: By 31 March 2021, ensure that all relevant roles with responsibility for assembling inputs, collating outputs and contributing in a key manner to the water quality risk assessments, are trained in the requirements of process D2019/30124 (all inputs, steps and outputs).

Opportunities for improvement

OFI 2.1.4-1: Consider including a specific column to capture uncertainty, as part of the risk assessment process.

Clause 2.1.5

Table 31. Clause 2.1.5 compliance grade

Subclause	Requirement	Compliance grade
2.1.5	WaterNSW 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.	No Requirement
Risk	Target for full compliance	
Not having informed IPART and NSW Health of any significant changes proposed to the Drinking Water Quality Management System has the potential to pose a both a risk of non-compliance with this licence clause and create a public health impact.	Evidence to confirm that changes to the Drinking Water Quality Management System have been assessed for significance and that IPART and NSW Health have been notified if a significant change is proposed.	

Summary of reasons for grade

WaterNSW advised in the Questionnaire that there were no changes to the Water Quality Management System. In reviewing the information, we noted that documentation within the system had been updated in the audit period. We agreed these updates were not significant.

This clause is considered to be No Requirement.

Discussion and notes

WaterNSW advised in the Questionnaire that there were no changes to the Water Quality Management System. Documents had been updated during the audit period, however in our review of these documents (discussed in clauses 2.1.1-2.1.3), we agree these updates were not significant.

WaterNSW did not propose to make significant changes to the WQMS during the audit period. We did identify a significant process change underway in the Fish River Water Supply Scheme - the addition of a fluoridation step to the process train. The addition of fluoridation will require a range of changes to the Fish River Water Supply Scheme DWQMS including updates to scheme schematics, operational and verification monitoring and training. We would consider this a significant change. The changes that should have been made have been assessed under clause 2.1.3 (as a non-compliance with the WQMS).

Recommendation

There are no recommendations for this clause

Opportunities for improvement

OFI 2.1.5-1: WaterNSW should update their DWQMS to include the requirements for fluoridation and notify IPART and NSW Health regarding the changes it proposes.

Clause 2.4 – Catchment Infrastructure Works management

Clause 2.4.1

Table 32. Clause 2.4.1 compliance grade

Subclause	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.	Demonstration that the Catchment Infrastructure was operated and managed consistent with the Design Criteria and the Asset Management System during the audit period.	
Operation and management of the Catchment Infrastructure in accordance with the Design Criteria is essential to ensuring the continuity of water supply. Under an asset management system approach, this requires documented understanding of stakeholder requirements and defined objectives to guide planning and asset management activities.		

Summary of reasons for grade

WaterNSW demonstrated that it had operated and managed the Catchment Infrastructure Works consistently with the Design Criteria and in accordance with 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 in accordance with the 2017 Metropolitan Water Plan portfolio of measures, with changes appropriately implemented with the end of the drought in February 2020.

Under clause 2.4.1, WaterNSW must also manage the Catchment Infrastructure Works in accordance with the Asset Management System. WaterNSW has demonstrated the alignment between its corporate and asset management objectives and how this allows its Catchment Infrastructure Works to be operated and managed consistently in accordance with its Asset Management System.

This clause is graded Compliant.

Discussion and notes

Catchment Infrastructure Works are defined in the *Water NSW Act 2014* as being:

- 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,*

- e. *and includes anything prescribed by the regulations as being within this definition, but excludes anything prescribed by the regulations as being outside this definition.*

The Design Criteria means the levels of service for security, robustness and reliability of water available for Supply to Customers (other than Small Customers) in or from the Declared Catchment Area, as published by WaterNSW on its website from time to time.

The design criteria in place are:

- 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 i.e. restrictions should not be too frequent
- reliability – imposed water restrictions should not last longer than 3% of the time on average, or 3 months in 100 months.

WaterNSW advised that there have been no changes to the Design Criteria during the audit period.

During the most severe drought on record, a number of the metropolitan area storages reached historically low levels. Sydney Water introduced level 1 restrictions on 1 June 2019 when total system storage was 53.2% to achieve a 7.8% reduction in demand. Level 2 Restrictions were introduced on 10 December 2019 when total system storage was 44.9% to achieve a reduction of around 16%. Level 2 restrictions were lifted in response to the February 2020 rain event. The storages exceeded the 80% full level on 17 February 2020. The 30 June 2020 reported storage level was 81.0%. The Greater Sydney weekly verified storage and supply report, which covers the storage and catchment rainfall for Warragamba, Upper Nepean, Woronora, Shoalhaven and the Blue Mountains, is published weekly by WaterNSW on its website and these levels were confirmed at audit. The Tallowa Dam transfers (Shoalhaven transfers) that had initially been triggered in 2018 were ceased in June 2020 in accordance with the 2017 Metropolitan Water Plan portfolio of measures. This was confirmed in an email on 18 February 2020 to stakeholders including Sydney Water and Shoalhaven City Council. WaterNSW noted that Level 1 restrictions remain in place.

WaterNSW manages the Catchment Infrastructure Works in accordance with the Design Criteria through the application of operating rules developed by the WATHNET system model.

The WATHNET model is a monthly time-step model for system optimisation. The operating rules, in the form of a system nomograph, as implemented in the Master Schedule planning tool, are used to guide decision making around source selection in addition to considering water quality constraints, availability of assets and drought triggers as detailed in the Water Sharing Plan. The operating rules seek to maintain supply security at each supply point, meet water sharing requirements and prevent spilling from the storages.

Flow schedules are developed up to 12 months in advance to provide information on storage balancing and outline the current drivers governing system configuration. The schedules are reviewed on at least a weekly basis to take into account any changes

resulting from inflows, water quality or asset availability. The schedule is designed to take into account planned outages.

Prior to the end of the drought, WaterNSW worked with Sydney Water to develop an Operational Drought Response Plan. The aim of the Plan was to communicate operational plans to optimise use of existing system assets to minimise risk of demand shortfalls, identify key risks and system constraints and provide a system base case for planning assessment. In the region of 200 options were assessed for how to best manage the storage, supply, treatment and network distribution of drinking water in the event of ongoing severe drought conditions. As a result of the end of the drought, a number of projects have been put on hold for the foreseeable future, with other responses hibernated for future water strategies. The focus of the planning work is now on a longer-term strategy as well as the development of an Emergency Drought Response Plan. The draft of the Emergency Drought Response Plan is expected to be released in December 2020, with the final version due in 2021. A Greater Sydney Water Strategy is being prepared by the Department of Primary Industry & Environment – Water that will provide a basis for WaterNSW's planning work.

Under clause 2.4.1, WaterNSW also has to manage the Catchment Infrastructure Works in accordance with the Asset Management System. The requirement for this system is specified under clause 5.1.1 of this licence and discussion on this obligation is included under the section of this report relating to clause 5.1.1.

Fundamental to an asset management system is the concept of alignment (ISO55000:2014, clause 2.4.2) so that it is evident how whole of organisation objectives are translated into technical and financial decisions, plans and activities.

Operation and management of the system (Catchment Infrastructure) in accordance with the Design Criteria is identified as one of WaterNSW's asset management objectives (Asset Management Objective 8) in WaterNSW's Strategic Asset Management Plan. Compliance with the Design Criteria is also identified in the Strategic Asset Management Plan as a key aspect of meeting the stakeholder requirements of Sydney Water, WaterNSW's principal customer within the Declared Catchment Area. In addition, the management and protection of the Declared Catchment Area is also one of WaterNSW's asset management objectives included in its Strategic Asset Management Plan (Asset Management Objective 9).

With respect to planning under the asset management system, Asset Class Strategies are important documents as these specify planning guidelines and asset requirements for related sets of assets. They consolidate technical knowledge regarding the long-term care of the relevant type of equipment and systems. As detailed in this audit report under clause 5.1.2, although Asset Class Strategies have not yet been prepared for all asset classes relating to water supply, with 16 outstanding, WaterNSW has used a prioritisation process that means that most strategy documents for critical assets have been prepared and WaterNSW is now moving into developing the technical specifications to implement the strategies. Asset Class Strategies have been completed for Dam Structures, Tunnels, Canals, SCADA & Process Control, Bridges, Roads and Land and WaterNSW's asset management activities are completed in accordance with the information set out in these documents.

WaterNSW provided the Warragamba Asset Management Plan as evidence and we confirmed that the document showed alignment with the overall asset management system and other elements of the system, including:

- preventative maintenance plan (within EAMS)
- Capital Investment Plan (extract from pricing submission) - drum gate works, radial gate works, deep water pump station
- studies and investigations (critical Risk Assessment)
- Warragamba Dam wall raising project
- environmental flows project.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Clause 2.5 – Calculating System Yield

Clause 2.5.1

Table 33. Clause 2.5.1 compliance grade

Subclause	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> <p>a) the conclusion of any drought event affecting the Declared Catchment Area;</p> <p>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;</p> <p>c) any material change to the operating rules of the Catchment Infrastructure Works in respect of the Declared Catchment Area; or</p> <p>d) any material change to the Design Criteria in respect of the Declared Catchment Area.</p>	Compliant
Risk	<p>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.</p>	Target for full compliance
		<p>Evidence WaterNSW had re-calculated the System Yield if any of the nominated events had occurred.</p>

Summary of reasons for grade

We confirmed that WaterNSW had recalculated the System Yield in respect of the Declared Catchment Area based on the conclusion of the drought event affecting the Declared Catchment Area, in accordance with its licence obligation under Clause 2.5.1(a). The drought concluded as a result of rain events in February 2020.

WaterNSW demonstrated that the recalculation had been completed and provided the submission paper that summarised the review process and updated changes.

This clause is graded Compliant

Discussion and notes

The recalculation of the System Yield in respect of the Declared Catchment Area required under Operating Licence Clause 2.5.1 was triggered by the conclusion of the drought by an inflow event in February 2020. This inflow event caused by heavy rain resulted in the total dam storages reaching the 80% level required to conclude all of the drought measures. The portfolio of drought response measures is set out in the 2017 Metropolitan Water Plan.

In respect of the other events that require recalculation of the System Yield under clause 2.5.1, during the audit period there was:

- no commencement of any modification or augmentation to the Catchment Infrastructure Works or Customers' infrastructure, that would have had a significant impact on WaterNSW's Supply of water
- no material changes to the operating rules, which include:
 - System Operating Rules set out in the 2017 Metropolitan Water Plan
 - associated Work Approvals and Operating Protocols
 - Storage Balancing Rules as per WaterNSW's Nomograph
 - operating rules and agreement with Origin Energy in respect of Shoalhaven Transfers
- no material changes to the Design Criteria.

As the result, a recalculation of System Yield was not triggered on any of these other occurrences.

However, the last independent expert review of the supply system model recommended the use of varying climatic demand factors instead of fixed seasonal demand factors in order to disaggregate the annual demand to monthly demands. The supply system model is required to be reviewed by a suitably qualified independent expert once every Operating Licence period, with the next review expected in the 2020/21 audit period.

As a result of this, WaterNSW completed two runs of the supply system model, the first in May 2020 to account for conclusion of the drought, the second in July 2020 to take account of the independent expert review recommendation and include varying climatic demand factors in the recalculation of the System Yield. The July 2020 modifications to the model and associated updated assessment of Yield did not constitute the independent review of the model required by Clause 2.6.1 of WaterNSW's Operating Licence and this obligation will be undertaken during 2021 as required by the Licence.

The May 2020 yield update (Supply System Model Run R34) following the conclusion of the last drought resulted in a change in the System Yield from the 570 gegalitres per annum (GL/a) reported in the 2019 operational audit report to 535 GL/a. The July 2020 yield update (Supply System Model Run R35) which included the varying climatic demand factors resulted in a further change to 515 GL/a.

WaterNSW provided copies of its submission papers for the review of Sydney Water supply system yield, dated 20 May 2020 and 7 July 2020, which detailed the two updates and:

- the reasons why the System Yield had been recalculated
- the basis and key information for the yield calculation
- the outcomes of the recalculation.

The estimated yield of 515 GL/a is less than expected demand of 565 to 600 GL/a required in the next five years. Additional supply/demand measures required to meet this expected gap can be considered in the current Greater Sydney Water Strategy under development by the Department of Primary Industry & Environment – Water (DPIE-W) and WaterNSW has informed Sydney Water and DPIE about the yield update.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Clause 2.5.2

Table 34. Clause 2.5.2 compliance grade

Subclause	Requirement	Compliance grade
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.	Compliant
Risk	Target for full compliance	
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.	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.	

Summary of reasons for grade

As outlined under Clause 2.5.1, the recalculation of the System Yield was triggered within the audit period, with the change in the yield requiring the Minister to be advised. WaterNSW provided the Briefing Note provided to the Minister dated 16/09/2020 and which was signed as being noted by the Minister on 24/09/2020 to confirm that it has met the requirements under Clause 2.5.2.

This clause is graded Compliant .

Discussion and notes

As reported under Clause 2.5.1, a recalculation of System Yield was triggered during the audit period.

We confirmed that WaterNSW advised the Minister of the changes to the System Yield relative to the previous System Yield, including reasons for change following the re-calculation under clause 2.5.1. The Briefing Note to the Minister dated 16/09/2020 also informed that the re-calculated System Yield is lower than Sydney Water’s forecast annual demand. The Minister signed off as having noted the information in the Briefing Note on 24/09/2020.

Based on the evidence provided, WaterNSW has complied with the requirements of clause 2.5.2.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Clause 2.5.3

Table 35. Clause 2.5.3 compliance grade

Subclause	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.	Compliant

Risk

This requirement represents a low risk. Although 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 on WaterNSW's public relations although this would be expected to be minimal.

Target for full compliance

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.

Summary of reasons for grade

WaterNSW provided evidence that that the details of changes to the System Yield during the audit period and the reasons for the changes have been made available to the public in accordance with the Reporting Manual as soon as practicable after advising the Minister.

This clause is graded Compliant

Discussion and notes

As noted under clause 2.5.2, WaterNSW informed the Minister of the change to the System Yield in a Briefing Note dated 16/09/2020. The Minister signed-off as having noted the information in the Briefing Note on 24/09/2020.

We confirmed that WaterNSW has uploaded the September 2020 version of the 'History of Changes to Greater Sydney's Water Supply System Yield' document to its website.

Page 2 of the document states:

"The Greater Sydney's water supply system yield has been re-calculated following the conclusion of the recent drought (2017-2019), extending the historical hydrological records to December 2019. The last independent expert review recommended the use of varying climatic demand factors instead of fixed seasonal demand factors to disaggregate annual demand to

monthly demands. Water NSW has now completed the estimation of varying historical climatic demand factors, capturing the complex relationship between climate and demand, and updated the yield with the new demand factors.

Re-calculated Greater Sydney’s water supply system yield is 515 GL/a”

This reconciles with the recalculated System Yield that was observed during the audit of clause 2.5.1.

Based on the evidence provided, we consider that WaterNSW has been compliant with its requirements under clause 2.5.3 in the audit period.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 2.7 – Water conservation

Clause 2.7.3

Table 36. Clause 2.7.3 compliance grade

Subclause	Requirement	Compliance grade
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	Compliant
Risk	This requirement represents a high risk. If WaterNSW does not have a water conservation work program in place, it may impact on the implementation of appropriate measures to ensure that its operations are optimal in respect of water conservation.	Target for full compliance Evidence that WaterNSW has developed a water conservation work program using the process set out in the Water Conservation Strategy and submitted it to IPART by 1 September 2019 or a later approved date.

Summary of reasons for grade

WaterNSW demonstrated that it had prepared a water conservation work program using the process set out in the Water Conservation Strategy. Although this was submitted after the required 1 September 2019 deadline, a later date of 31 March 2020 was approved by IPART and WaterNSW submitted its program on this due date.

This clause is graded Compliant.

Discussion and notes

The processes in the Water Conservation Strategy that have been used by WaterNSW to develop its work program include:

1. Identification and documentation of existing water conservation activities

2. A process for identifying additional options for conserving water
3. A process for comparing these options
4. A process for selecting options for implementation.

WaterNSW has used a number of tools to support the development of its work program and assist in the options analysis stage, including risk assessment, economic assessment and cost benefit analysis.

As WaterNSW operates the river systems and storages within the natural environment, there is a focus on the efficient delivery of water to a broad range of customers including irrigators, urban towns and the environment. The scope of works covers the management of water releases from its storages to the extraction point, with other agencies responsible for improved management of the water.

As a result, the water conservation projects that it has included in its work program have been structured around:

- water management, to clearly identify where water goes in the system
- water reporting, reporting both internally and externally as to water flows
- building systems to improve water management.

The water conservation projects are to be staged using the following 4-stage process:

- Stage 1: Identify the current performance and set this as the benchmark
- Stage 2: Commence reporting on the water flow through the environment
- Stage 3: Improve the operations of the system to reduce losses
- Stage 4: Consideration of asset solutions to improve water management.

Detailed actions under each of these four stages, together with completion and post-implementation review timeframes, have been set out in the works program.

WaterNSW requested an extension to the original 1 September 2019 due date for submitting its program to IPART. This request was made in a letter dated 8 August 2019. The extension was requested by WaterNSW due to business impacts from managing the drought at the time. Following consultation between IPART and WaterNSW staff, WaterNSW agreed to a revised extension date of 31 March 2020 and this was approved by IPART.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 2.8 – Research on catchments

Clause 2.8.1

Table 37. Clause 2.8.1 compliance grade

Subclause	Requirement	Compliance grade
2.8.1	WaterNSW must maintain a program of research for each Declared Catchment Area which: <ol style="list-style-type: none"> relates to catchments within that Declared Catchment Area generally and in particular their health; is consistent with its objectives under section 6 of the Act; and assists WaterNSW to discharge its functions under sections 7(1)(g) and 7(1)(h) of the Act. 	Compliant
Risk	Target for full compliance	
Not fully understanding the hazards and risks to catchments, based on the specific context of each Declared Catchment Area, may mean that hazards and risks are not managed appropriately.	WaterNSW must show that it has identified appropriate programs of research, that are targeted to each Declared Catchment Area, and are based on the section 6 objectives of the <i>Water NSW Act 2014</i> (NSW) as well as section 7(1)(g) and 7(1)(h) requirements.	

Summary of reasons for grade

WaterNSW understands its obligations in relation to Declared Catchment Area generally and in relation to catchment health in particular. The water quality science programs are targeted to the relevant obligations under the Act and help to demonstrate implementation of its functions. Outcomes of the research programs show sound demonstration of benefits and outcomes for the Declared Catchment Area. WaterNSW's approach to coupling outcomes from the triennial catchment audit with a new approach of prioritising themes for inclusion in the science program, presents a sound evidence base for future work. There are some opportunities to expand the integration of this clause with other licence clauses and provide improved outcomes for the Declared Catchment Area, but these are not considered shortcomings.

Sufficient evidence is available to confirm that the requirements have been met.

This clause is graded Compliant.

Discussion and notes

This clause was checked by reviewing the following:

- that WaterNSW has checked and confirmed its obligations under the licence
- that WaterNSW has assessed catchment health (according to metrics based at least on Act obligations)
- the outcomes of research conducted by WaterNSW
- that WaterNSW has assigned adequate resources to the research program
- that results have been tracked over time.

Formal process for checking and confirming obligations

The Greater Sydney IPART determination (a pricing determination that sets maximum prices for WaterNSW's Greater Sydney Services) is the main way that WaterNSW understands its obligations under this clause. Given that this process has been in place for a period of time, it is considered an acceptable approach to demonstrate understanding.

Assessment of catchment health

WaterNSW has an obligation to ensure that the Declared Catchment Area 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 (S6(c)). Other obligations (under S7(1)) are to protect and enhance the quality and quantity of water in the Declared Catchment Area and to manage and protect the Declared Catchment Area and water management works vested in or under the control of WaterNSW that are used within or for the purposes of such areas.

Evidence was presented which confirms that the above obligations are captured in the research programs (e.g. D2020/2209, D2019/137747, D2020/70375).

WaterNSW also assesses catchment health via an independent audit of the catchment on a three-yearly basis (Report Eco Logical Australia 2020. *Sydney Drinking Water Catchment Audit 2019 – Volume 2*). It was confirmed that the audit assessed catchment health indicators approved under Section 41 of the *Water NSW Act 2014* (NSW).

An opportunity for improvement exists in the current program. In the 2019 catchment audit report, there is only one mention of a linkage between the raw water in the Declared Catchment Area and water to be treated to meet drinking water guidelines. Given that WaterNSW's licence is intended to be integrated (as well as meet public health outcomes), an opportunity exists to extend the clause 2.8.1 research to integrate with other licence areas, which are also impacted by this clause, such as the raw water critical control points (Lake Burragorang) and raw water provided to other users, such as Councils. This aspect is considered an opportunity for improvement rather than a shortcoming as some aspects relating to critical control points (such as cyanobacteria and natural organic matter research) are already covered in the research program.

Assessment of catchment health (clause 2.8.1 a), b) and c)) is considered met with an opportunity for improvement.

Outcomes of Research

The research program was confirmed as being developed in response to outcomes from the periodic catchment audit (e.g. D2019/42274).

Other evidence was presented which confirmed the beneficial outcomes of research in the catchments including a sound stormwater pollution investigation study (D2020/2209). Research (D2020/31746) identified the limited use of silt curtains for post-fire catchment run-off water quality mitigation – information which will feed into the suite of efficacious catchment controls available to WaterNSW and ensure improved allocation and use of resources. A suite of research, with national and international researchers, is also being undertaken to validate erosion models and provide a greater

understanding and linkage of catchment works, fire impacts, and erosion impacts (D2020/106070, D2020/106071, D2020/106072, D2020/106081). This approach is considered sound.

During the audit team site visit of the Declared Catchment Area, WaterNSW staff noted their close work with other stakeholders, including the Rural Fire Service, and activity on local Bush Fire Management Committees. Validation of catchment management works is further assessed under clause 2.4.

Assessment of the outcomes of research (clause 2.8.1 a), b) and c)) is considered met.

Assigning Adequate Resources to the Research Program

WaterNSW has sound Board engagement with the science program through the Board Committee on Water Quality, Health and Catchment Protection. This link is important as it demonstrates commitment to the implementation of this clause and oversight of the outcomes. Commitment to resourcing of the research program was provided through a range of evidence including the Board Committee Paper on the Science Prioritisation Project (D2020/46035) and evidence of budget allocation and expenditure (D2020/70375).

Adequate resource allocation and expenditure for the resource program (clause 2.8.1 a)), are considered met.

Tracking of Results Over Time

Tracking of research results occurs at several time points including monthly (monthly portfolio reports D2020/91179) and annually to the Board and to IPART (D2020/68378, D2019/113193, D2020/70375). The evidence sighted confirmed that tracking occurs in practice and meets requirements. In addition, WaterNSW has engaged with the WaterRA project 'The Value of Research' which also sets out a framework for monitoring of the value of projects, including continued monitoring after the scheduled end of the project, to record all potential benefits.

The tracking of results (clause 2.8.1 a), b), c)) is considered met.

Other Observations

Other observations was made including those of good practice and those not materially affecting the outcome of the grade.

Of particular note for this audit period was the research prioritisation work (D2020/43880) that had been undertaken including multiple stakeholders, to develop a range of research themes for the 2021-2025 program. The research prioritisation was considered a notable outcome for the audit period.

An opportunity exists to consider the involvement of other stakeholders and other themes, which could provide further outcomes and benefits for the Declared Catchment Area and WaterNSW including:

- expanding inclusion to Indigenous Australians, their concepts of land and water management and their connection with country

- extending research themes to other areas such as externalities provided by the catchments (e.g. ecological service valuation of the catchments).

Recommendation

There are no recommendations for this clause

Opportunities for improvement

OFI 2.8.1-1: Consider extending the clause 2.8.1 research to integrate with other licence areas which are also impacted by this clause, such as the raw water critical control points (Lake Burragorang) and raw water provided to other users, such as councils.

OFI 2.8.1-2: Consider the inclusion of Indigenous Australians, to help expand the exploration of stakeholder-relevancy and increased diversity of research themes.

OFI 2.8.1-3: Consider extending research themes to other areas of research such as economics e.g. the exploration of externalities and the value of ecosystem services provided by catchments, to improve the quantification of benefits provided by the Declared Catchment Area.

Clause 2.8.2

Table 38. Clause 2.8.2 compliance grade

Subclause	Requirement	Compliance grade
2.8.2	WaterNSW must report on its research programs referred to in clause 2.8.1 in accordance with the Reporting Manual.	Compliant
Risk	Target for full compliance	
Not reporting in the required manner poses a risk to reporting compliance as well as a risk to appropriate review of the research programs for efficacy and value for money.	A report satisfying the requirements of the Reporting Manual.	

Summary of reasons for grade

An Annual Report on Catchment Management was developed for the 2018-2019 period and was submitted 29 November 2019. This report is compliant with requirements of the Reporting Manual (Section 2.1.3) and is available on the WaterNSW website (as required by Section 2.1.3 of the Reporting Manual). Evidence was sighted to confirm that WaterNSW has a process in place for developing the 2019-2020 report and a draft of this report was provided to confirm that the process has largely been implemented for the reporting year ending June 2020 for submission by 30 November 2020.

Sufficient evidence is available to confirm that the requirements have been met.

This clause is Compliant.

Discussion and notes

To test this clause, the following were assessed (according to Section 2.1.3 and other relevant sections of the Reporting Manual):

- What: Annual Report on Catchment Management.

- Period: financial year.
- To whom: IPART and the public (in accordance with section 2.3 of this Reporting Manual i.e. freely available on its website).
- When: on 30 November after the end of the financial year, or at a later date agreed to by IPART.
- Inclusions: Must cover WaterNSW's catchment management and protection activities, relevant to the Declared Catchment Area only.
- Must cover the following:
 - Inclusion 1: the planned and actual catchment management and protection activities.
 - Inclusion 2: the planned and actual expenditure for each of the catchment management and protection activities.
 - Inclusion 3: the planned and actual outcomes for each of the catchment management and protection activities.
 - Inclusion 4: identification of program activities in response to the recommendations or findings of the Operational Audit, Catchment Audit, or WaterNSW's research or monitoring programs.
 - Inclusion 5: an explanation of the types of catchment research activities and programs undertaken by WaterNSW and the planned and completed catchment research activities, to meet WaterNSW's research objectives.
 - Inclusion 6: an explanation of any annual changes in catchment management and protection activities or programs and expenditure.
 - Inclusion 7: an explanation of the types of community education activities and programs run by WaterNSW.
 - Inclusion 8: the actual (completed) community education activities
 - Inclusion 9: any other matter notified by IPART to WaterNSW.

All requirements were considered met for the 2018-2019 year report (delivered 29 November 2019 – confirmed by IPART) with the current reporting periods report sighted in draft.

Other Observations

The current reporting year's draft of the annual research program report does not currently include the recommendations from the triennial Catchment Audit. While not affecting the grade for this year, if the recommendations are not included, their omission will affect reporting compliance for the current reporting year. An opportunity for improvement has been added to reflect this observation.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

OFI 2.8.2-1: Ensure that the triennial Catchment Audit recommendations are added to the current reporting year's Catchment Management Report.

Clause 3.1 – Construct, maintain and operate Water Management Works

Clause 3.1.1

Table 39. Clause 3.1.1 compliance grade

Subclause	Requirement	Compliance grade
3.1.1	WaterNSW 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 clause represents a high risk. Effective management of Water Management Works throughout their lifecycle is required to maintain service, minimise lifecycle costs and manage risk to an acceptable level.	Evidence that the Water Management Works are effectively managed throughout their lifecycle under the asset management system.	

Summary of reasons for grade

Based on the evidence provided we are satisfied that WaterNSW constructed, maintained and operated its Water Management Works in accordance with its Asset Management System during the audit period.

This clause is graded as Compliant.

Discussion and notes

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."*

Overview

The requirement for WaterNSW to have in place a management system for asset management is specified under clause 5.1.1 of the operating licence and the primary discussion on this obligation is included under the section of this report relating to clause 5.1.1.

The framework for WaterNSW's asset management system is shown in Figure 1. As a system, the interrelated parts are intended to work together to achieve the system objectives. Each of the framework elements are described in the Strategic Asset Management Plan. This includes outlining the arrangements for the construction, maintenance and operation of its assets at an overall strategic level.

Within the Strategic Asset Management Plan, WaterNSW has defined the scope of the asset management system to cover:

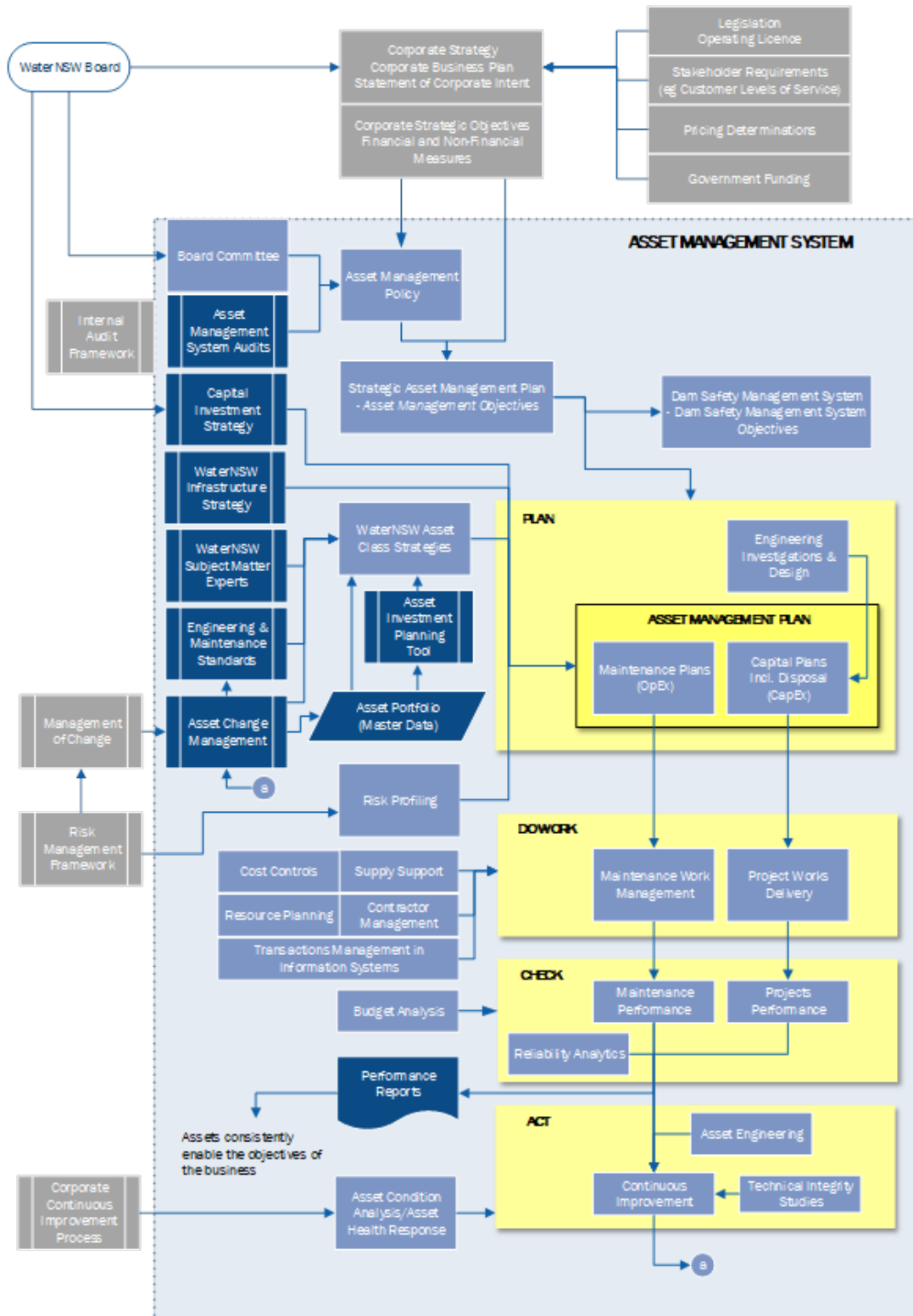
- bulk water supply infrastructure items, such as storage and supply infrastructure
- Declared Catchment land
- support infrastructure, including SCADA systems
- fleet assets
- ICT systems
- property and buildings
- recreation areas.

Water Management Works fall within this scope, primarily as bulk water infrastructure items such as storage and supply infrastructure.

The Strategic Asset Management Plan sets out WaterNSW's asset management objectives. These objectives, which are aligned to its overall corporate objectives, also define the planning, construction, operation and maintenance activities that WaterNSW undertakes to achieve the objectives, as well as the measures used to record and report on performance.

More detailed information relating to construction, operation and maintenance of WaterNSW's assets is provided in the portfolio of Asset Class Strategies that have been developed.

Figure 1 Asset management system framework



Source: ARK Ref: CD2015/436[v8]

Construction

Asset Management Objective 4, included in WaterNSW's Strategic Asset Management Plan is *"Provide raw water supply infrastructure solution options to address identified risks and opportunities for current and future demands."* This objective is applicable to the construction of Water Management Works.

This objective is supported by:

- the 20 Year Infrastructure Options Study for Rural Valleys, which provides a strategic level qualitative assessment of potential infrastructure options to meet long term level of service objectives in the regulated river water supply areas across NSW (excluding Greater Sydney)
- the 2017 Metropolitan Water Plan for infrastructure in the Greater Sydney area
- WaterNSW's Annual Capital Investment Plans, which include a ten year outlook.

The replacement of the 2017 Metropolitan Water Plan with the Greater Sydney Water Strategy that is currently being developed between WaterNSW, Sydney Water and the Department of Primary Industry & Environment – Water and expected to be completed during 2020-21 is expected to have some impacts on infrastructure requirements into the future.

WaterNSW delivers the objective through the delivery of Water Management Works in accordance with its project delivery framework. This includes frameworks for project management and project assurance. Projects over \$10 million are subject to the State Government's Infrastructure Investor Assurance Framework.

Achievement of the practical completion milestone for WaterNSW's projects is noted in monthly project reporting documents. A monthly Assets Project Status Report includes the status of each project with written descriptions and overall health ratings for project subcomponents such as schedule, costs, risk, and safety.

Water Management Works that were constructed and achieved practical completion during the audit period included:

- Burrendong Deep Water pumping works
- Chaffey to Dungowan pipeline.

We reviewed the asset hierarchy in WaterNSW's Enterprise Asset Management System asset register for the Chaffey to Dungowan pipeline project and confirmed that although some of the assets had been added to the register, the new pipeline had not yet been entered. WaterNSW explained that the hierarchy was being still finalised with the Project Delivery group. Handover plans are a standard part of the project delivery process, with tasks including provision of As Built drawings, relevant operating and maintenance manuals, a maintenance plan, input of the assets into EAMS and training relevant to the new assets.

Across the recent drought period, WaterNSW added an additional Last Responsible Moment (LRM) gateway for its drought response projects to make sure that they were not committed to construction that would not be required if the drought ended. The Last Responsible Moment assessment was aligned to depletion curves and project

specific. For the Chaffey to Dungowan pipeline project the Last Responsible Moment gateway was based on zero inflow into the Peel River.

Based on our discussions with WaterNSW and the evidence that was presented and provided, we consider that its Water Management Works have been constructed consistent with its Project Delivery Framework and in accordance with its Asset Management System during the audit period.

Maintenance

Asset Management Objective 6, included in WaterNSW's Strategic Asset Management Plan is *"Work management processes are consistently delivered and monitored."*

This objective is supported by:

- Asset Maintenance Plans
- Asset Reliability and Maintenance Manual.

WaterNSW delivers the objective for the work management processes for its Water Management Works through its Enterprise Asset Management System, Work orders and work order management processes and its Maintain Capability Capex Renewals program. Asset maintenance plans have been developed and are implemented using the maintenance management component of the Asset Management System.

Since 2016, WaterNSW has looked to standardise its maintenance plans over an asset class as much as possible. Although there are some outliers, many of the assets within an asset class are fairly generic in terms of complexity and essentially much of the maintenance program consists of repeating the same tasks for the same asset at different locations, e.g. civils, switchboard and gate assets. The standardisation of maintenance plans was carried out when the plans were being input into the Consolidated Information Management System (CIMS) when the new system was implemented in 2018-19.

WaterNSW monitors its performance against the objective through weekly and monthly maintenance completion reporting, monthly capital performance reporting, monthly reporting through the Assets Leadership team and the Management Committee on Assets and asset health and performance reporting.

We reviewed the asset hierarchies in the Enterprise Asset Management System asset register and the maintenance plans within the Consolidated Information Management System for assets at Warragamba Dam and also on the Fish River Water Supply Scheme pipelines. We also viewed examples of the specific work orders for inspection and maintenance tasks recorded in the Consolidated Information Management System.

The system requires mandatory comments to be added to each work order as WaterNSW considers that it was not receiving much information back from the field as to whether the tasks had been completed or any issues found. Field staff are also required to provide an asset condition score at the end of each task. A maintenance team leader reviews all the comments to be satisfied that the work has been completed and also pick up any follow up work. WaterNSW is moving to a mobile computing system and this is expected to improve the data quality for its assets and feedback from field staff.

We confirmed that the criticality of the asset is recorded against each asset and that WaterNSW uses this information as a factor in the frequency and the type of maintenance. Criticality is scored in accordance with the Asset Criticality Assessment Procedure.

The operations staff that were interviewed displayed a sound awareness of maintenance requirements and the use of the computerised maintenance management system.

We note that for the Chaffey Dam to Dungowan pipeline project, the project close out is still underway. Although the operating and maintenance plans have been developed and reviewed, they have not yet been finalised.

In addition to planned and corrective maintenance activities, whole-of-life maintenance of the asset portfolio also 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.

WaterNSW uses the condition and criticality data recorded against each asset in its Enterprise Asset Management System as the source data for the development of its renewals program. This is complimented by information provided in internal and external specialist study reports and also issues identified by the asset maintenance team. The information is collated and consolidated before being workshopped to validate the issues and develop options. The renewals process is prioritised based on condition, criticality, useful life and intervention costs.

WaterNSW demonstrated how it uses its PowerPlan tool to identify and assess candidates for its asset renewals. The system uses data from the Enterprise Asset Management System to identify the point at which intervention is required based on deterioration curves. The Net Present Value and risk cost are the main comparators and this allows WaterNSW to develop a high-level risk prioritised renewals program. The process is iterative, with more detailed inspections/studies completed on the assets identified for renewal. This updated information then being used in the next iteration of the development of the program. We reviewed a number of examples of candidate assets for inclusion in WaterNSW's renewals program and consider, although the process is maturing, that it allows WaterNSW to develop its renewals program based on asset condition and performance data, while also accounting for risk and costs.

Based on our discussions with WaterNSW and the evidence that was presented and provided, we consider that its Water Management Works have been maintained consistently in accordance with its Asset Management System during the audit period.

Operations

Asset Management Objective 7, included in WaterNSW's Strategic Asset Management Plan is *"Water Service to customer is delivered in accordance with their requirements."*

This Objective is supported by:

- Customer Supply Agreements
- 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.

For the Declared Catchment Area, Objective 7 is also supported by WaterNSW's Asset Management Objective 8, "System is operated and managed in accordance with Design Criteria." We have provided details of how WaterNSW achieves this under clause 2.4.1

In addition, we have addressed the requirement for WaterNSW to supply water to its customers in accordance with the terms and conditions of the relevant Customer Supply Agreements under clause 6.1.2.

For the Chaffey Dam to Dungowan pipeline project, although a feasibility study had identified the project, the timeframe for delivery had been brought forward as a result of the drought. As noted previously, WaterNSW is in the process of finalising the operating plans as part of the project close-out process.

Operational performance and system status is monitored with monthly reporting, including:

- Monthly Compliance report RWSA (Raw Water Supply Agreements)
- Annual Compliance report to NRAR (Natural Resource Access Regulator)
- Water Worry Report
- WaterNSW Executive Team Monthly Performance and Management Meeting - System Operations and Water.

WaterNSW provided examples of these reports as evidence and we confirmed that they provide ongoing and regular operational performance information across the ten catchments to the Executive.

Based on our discussions with WaterNSW and the evidence that was presented and provided, we consider that its Water Management Works have been operated consistently in accordance with its Asset Management System during the audit period.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 3.2 – Water Supply

Clause 3.2.1

Table 40. Clause 3.2.1 compliance grade

Subclause	Requirement	Compliance grade
3.2.1	WaterNSW 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.	Compliant (minor shortcomings)
Risk	Target for full compliance	
If WaterNSW breaches its licence, contractual agreements or supplies water then this may impact public health.	Evidence that water supplied meets all the customer agreements, any relevant arrangement with Sydney Water (including the protocol and agreement) and the WQMS.	

Summary of reasons for grade

Based on the evidence provided, we are satisfied that WaterNSW has supplied water in accordance with the relevant arrangements established with Sydney Water, as well as in accordance with the relevant arrangement to its other Major and Minor customers. As discussed in Clause 2.1.2 and 2.1.4 there were repeated failures of CCP instrumentation at the Fish River Water Supply Scheme throughout the audit period although evidence was provided that the water was within the CCP limits and chlorine dosing was occurring. There was also a failure to conduct verification monitoring at Glen Davis. This shortcoming did not adversely impact the ability of the utility to achieve defined objectives or assure controlled processes, products or outcomes during the audit period.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

WaterNSW's obligations for supplying water under clause 3.2.1 are achieved through Asset Management Objective 7 included in WaterNSW's Strategic Asset Management Plan: *"Water Service to customer is delivered in accordance with their requirements."*

This Objective is supported by:

- Customer Supply Agreements
- 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.

The scope of water Supplied to Customers under this clause considered in this audit is shown in Table 41.

Table 41 Water supplied scope

Supply	Requirement
Raw water supplied to Sydney Water	Water Quality Management System and relevant arrangements with Sydney Water established under section 25 of the Act.
Raw water supplied to Wingecarribee Shire Council, Shoalhaven City Council for Kangaroo Valley, and Oberon Council and supplementary raw water supply to Goulburn Mulwaree Council from Wingecarribee Reservoir	Water Quality Management System and any relevant Customer Supply Agreement
Raw water supplied to Upper Canal and Warragamba Pipeline customers	Relevant Customer Supply Agreement
Raw water supplied to Fish River Water Supply Scheme customers	
Drinking water supplied to Fish River Water Supply Scheme customers	

Supply in accordance with arrangements with Sydney Water

Under Section 25 of the *Water NSW Act 2014*, WaterNSW is required to establish arrangements with Sydney Water, including:

- (a) *the standard of quality of the water supplied,*
- (b) *the continuity of water supply,*
- (c) *the maintenance of adequate reserves of water by WaterNSW.*

The commercial arrangements between WaterNSW and Sydney Water regarding the supply of water are established in the Raw Water Supply Agreement.

The Raw Water Supply Protocols provide a framework for WaterNSW and Sydney Water to adhere to the Raw Water Supply Agreement and to work together in the interests of providing the best quality water to consumers. The protocols include Incident Management (WSP 002), Raw Water Quality Management (WSP 003), Operational Changes (WSP 006), System Configuration (WSP 008), Strategic Asset Planning (WSP 009) and Joint Annual Maintenance Planning (WSP 010).

In order to monitor its performance with regard to supplying to Sydney Water in accordance with the Raw Water Supply Agreement and Raw Water Supply Protocols, WaterNSW maintains a Water Monitoring Program. Site specific standards as set in the Raw Water Supply Agreement are described in the Water Monitoring Program and Sydney Water is invited to comment on each review of the Water Monitoring Program. In addition, the Raw Water Supply Protocols specify requirements for provision of information in addition to the requirements under the Raw Water Supply Agreement, including additional data and monitoring information during incidents.

Evidence was provided that confirmed WaterNSW had supplied water in accordance with the Raw Water Supply Agreement and Raw Water Supply Protocols.

Incident Management (WSP 002) in the Raw Water Supply Protocols was discussed and WaterNSW provided its Incident Management Procedure, examples from the RACS incident management system for asset failures at Nepean Dam and Prospect Dam that

resulted in supply interruptions from these storages to Sydney Water, and Incident Cause Analysis Method (ICAM) presentations for these incidents that were reported to the Management Committee for Assets. The Nepean and Prospect Water Filtration Plant supply interruptions were managed via incident management protocols as set out in the Raw Water Supply Protocols.

WaterNSW also provided examples of water quality compliance reports with the results of routine monitoring of raw water supplied to Sydney Water's Water Filtration Plants.

WaterNSW Performance (which is flow weighted) against the Raw Water Supply Agreements was 98.28% against their target of 95%. Non-compliances against the Raw Water Supply Agreement have been reported during the audit period, with overall non-compliance reported at the Macarthur, Orchard Hills, Prospect and Warragamba water filtration plants during 2019-20. Monthly water quality reports for each storage (twice monthly for Warragamba) are also provided, summarising latest water quality information, observations, outlook and recommendations.

The Raw Water Supply Protocols specify a process for making operational changes to the raw water supply system (such as supply source or blend, offtake levels). Any change proposed by WaterNSW are documented in a Notification of Change to System Operation (NOCTSO). Following the process ensures that both parties are in agreement on any system changes that may impact on water quality and are aware of any risks. WaterNSW also provided an example of a Notification of Change to System for the preparation for water quality deterioration from Warragamba Dam in February 2020 and a change of supply to minimise the risks associated with intrusions in Lake Burragorang from a recent heavy rain event after the bushfires. The NOCTSO included a timeline and risk assessment.

Water Quality Management System

The implementation of the WQMS is discussed in detail under clause 2.1.4. Of relevance to this clause is minor shortcomings associated with the management of the water Supplied from the Fish River Water Supply. These shortcomings related to ongoing CCP instrument reliability issues, and a failure to conduct verification monitoring at Glen Davis.

Recommendation 4.2.1-1 and Recommendation 2019-01 apply to this observation.

Customer Supply Agreements

The supply of water in accordance with relevant Customer Supply Agreements is further discussed in clause 6.1.2. Due to issues with the supply of water to customers of the Fish River Water Supply Scheme, the Customer Supply Agreement have been included in clause 6.1.2.

For the Major customers, water quality targets for the raw water supplied have been agreed to by the Board and although they are internal operational targets, they have also been agreed to by WaterNSW's customers.

Similar to the arrangements for the Sydney Water raw water supply, monthly water quality reports for each storage are provided to customers and stakeholders

summarising latest water quality information, observations, outlook and recommendations.

Non-conformances, either with supply agreements or water quality event management protocols are recorded in WaterNSW's Risk Assurance and Compliance System (RACS) as required.

WaterNSW executed the revised Raw Water Supply Agreement with Wingecarribee Shire Council during the audit period. This involved personnel from the System Operations and Water Quality teams drafting and negotiating the terms of the agreement. The water quality standards remain unchanged from the previous agreement. The agreement commits the parties to developing operational protocols in relation to communications, incident management, water quality monitoring and reporting, maintenance planning, drought and system configuration.

We reviewed a water quality non-conformance for the water supplied to Wingecarribee Council recorded on 18 November 2019 for a concentration of iron above the major incident level. Under the terms of the supply agreement, *"WaterNSW will notify WSC of any exceedances of water quality parameters in accordance with its Water Quality Incident Response Protocol."* We confirmed that WaterNSW had managed the incident in accordance with its Water Quality Incident Response Protocol, with the details recorded in RACS. Council were notified and WaterNSW's Water Quality team advised. The incident was closed after the required actions had been confirmed as having been completed.

For the Minor customers receiving a raw water supply from WaterNSW, the supply agreements inform customers that the water is raw untreated water, is not intended for personal, domestic or household use and is not a potable supply suitable for drinking. The agreements do not include any specific water quality characteristics and target values. WaterNSW monitors complaints from these customers to ensure it is meeting its obligations.

During the audit period, Fish River Customers supplied with raw water were impacted by a total of four unplanned water supply interruptions. However, most of these pipe breaks did not result in an interruption to supply, as the breaks could be isolated and supply maintained by back feed from reservoirs. Under the terms of the supply agreement, WaterNSW does not guarantee a continuous supply and under clause 13, *"Supply to the Consumer may be interrupted at any time. When possible, WaterNSW will give notice of interruptions to the supply"*. As such, there is no specific requirement to provide notification of an interruption to supply, although WaterNSW endeavours to inform affected customers as soon as practicable.

The Stage 1 Lithgow City Council notification of the interruptions on the Fish River supply was managed through Operating Protocols and associated procedures. WaterNSW's Customer and Community team are responsible for facilitating communications to customers where advised by System Operations or the Assets teams. We confirmed that the unplanned interruptions were recorded in RACS, with the customer (Lithgow City Council) being notified and arrangements put in place to investigate and rectify the outage.

Upper Canal retail customers, who are supplied under the Upper Canal and Warragamba Pipeline Customer Supply Agreement, experienced a planned outage in June 2020.

Under clause 6.3 of the supply agreement, *"If there are planned interruptions to allow for maintenance to Water Management Works which will interrupt your supply of water, we will inform you of the time and duration of the planned interruption by giving you no less than seven days' notice in advance. We will use our best endeavours to conclude the planned maintenance within the notified period."* Under the terms of the supply agreement, WaterNSW does not guarantee a continuous supply as these customers are supplied directly off the bulk water assets and not through reticulation infrastructure. WaterNSW provided the template for the notification that was provided to the 11 retail customers affected by this planned outage. We confirmed that the letters were issued on 25 May 2020 for the outage starting on 17 June 2020. Therefore, WaterNSW met its requirement to provide at least seven day's advance notice.

With the exception of the Fish River Water Supply Scheme, we are satisfied that WaterNSW has supplied water in accordance with the relevant arrangements established with Sydney Water, as well as its other Major and Minor customers.

Recommendation

Recommendation 4.2.2-1 and Recommendation 2019-01 apply to this observation.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 4.2 – Water Supplied performance standards

Clause 4.2.2

Table 42. Clause 4.2.2 compliance grade

Subclause	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 (minor shortcomings)
Risk	Target for full compliance	
If the WaterNSW is not effectively managing water quality in accordance with the Water Quality Management System, there is potential for a high risk to public health.	Evidence that the quality of the water supplied is in accordance with the Water Quality Management System for Declared Catchment or Non-Declared Catchment from which WaterNSW supplies water.	

Summary of reasons for grade

We were satisfied that WaterNSW had managed the quality of the water to its customers in accordance with the preventive measures in the relevant water quality management system for the Declared Catchment.

There were repeated failures of CCP instrumentation at Fish River Water Supply Scheme throughout the audit period. The SCADA traces of these events, before and after instrument failure and the bench testing conducted and recorded in RACS provided evidence that the water was within the CCP limits during these instrumentation failures.

This clause is graded Compliant (minor shortcomings).

Discussion and notes

WaterNSW reported that raw water supplied for treatment from 1 July 2019 to 30 June 2020 was 100% compliant with Australian Drinking Water Guidelines for health-related characteristics. Performance against raw water supply agreements was 98.28% (internal target 95%) and 87.87% against operational targets (internal target 85%). Performance against Critical Control Points was 98.28% overall for the financial year (internal target 95%).

During the audit period WaterNSW reported 3 events that related to CCP exceedances. These were:

- high raw water turbidity in Warragamba associated with the drought breaking rains
- high algal levels in Wingecarribee reservoir
- pipeline breakage in the Fish River Water Supply Scheme associated with a low chlorine residual.

During the audit, the management of these events were discussed and found to have been managed in accordance with the WQMS. The evidence reviewed included RACS, routine water quality reports and a NOCTSO notification. The turbidity monitoring at the

Warragamba pipeline was viewed on SCADA and the calibration records confirmed and found consistent with the WQMS.

Throughout the audit period there were problems with the chlorine and turbidity analysers associated with the CCPs at Duckmaloi Water Treatment Plant. There was no evidence that water had been supplied outside of the CCP limits during these instrumentation failures:

- Additional benchtop tests were conducted (a RACs record was viewed for the 14/5/2020 failure).
- The SCADA traces in the Fish River Water Quality Reports do not show traces indicative of a CCP failure.

We requested the records of the additional tests. WaterNSW advised *"These additional bench test results were communicated via phone through to the Water Quality Advisor to assist with the incident response but no formal records of these results were kept by the plant operators for future reference. The RACS entry also includes a summary of these additional bench testing results verbally reported by the operators to the Water Quality Advisor:*

Deficiencies in record keeping were noted during the Fish River health check assessment conducted in August 2020 with a specific recommendation made for the review and update of operational forms to improve record keeping of operational data and any actions taken during apparent issues at the plant."

We support this observation and recommendation.

Recommendation

Recommendation 4.2.2-1: By 30 June 2021, WaterNSW should review the appropriateness of CCP analysers at Duckmaloi Water Treatment Plant to ensure they provide a reliable measurement of turbidity and chlorine residual.

Recommendation 4.2.2-2: By 31 March 2021, WaterNSW should review and update operational forms at Duckmaloi Water Treatment Plant to improve record keeping of operational data, including the time of data sampling and any actions taken to manage operational issues at the plant.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 4.3 – CSR Water Performance Standards

Clause 4.3.2

Table 43. Clause 4.3.2 compliance grade

Subclause	Requirement	Compliance grade
4.3.2	<p>CSR Water Delivery Performance Standard A</p> <p>Water NSW must ensure that:</p> <p>a) 99% of Customers who place a Non-complying Water Order are contacted within one working day to rectify that order; and</p> <p>b) this is calculated as a percentage of all Non-complying Water Orders placed in the financial year</p>	Non-compliant (non-material)
Risk	<p>Failure to comply with the requirements of this obligation presents a high risk to WaterNSW's customers not being provided with their required water orders and WaterNSW failing to maintain an adequate level of service to its customers.</p>	Target for full compliance
		<p>Evidence that WaterNSW has achieved its CSR Water Delivery Performance Standard A in the audit year.</p>

Summary of reasons for grade

WaterNSW has not achieved its CSR Water Delivery Performance Standard A in the audit year. Based on all of the non-complying water orders placed in the financial year, it contacted 98.66% of customers placing a non-complying water order within one working day to rectify the order, just under the required 99% target.

This clause is graded Non-compliant (non-material).

Discussion and notes

Water ordering can only be performed directly by WaterNSW customers via iWAS (Internet Water Accounting system) which is a customer facing system that is linked to the Water Accounting System (WAS). Customers phone, fax, email or post their orders to the Customer Service Centre, where Customer Service staff validate compliance of the order and enter it into the Water Accounting System.

iWAS is available to all registered WaterNSW regulated river, unregulated river and groundwater customers through WaterNSW's website. It allows customers to:

- enter and amend water orders
- place bulk water orders
- place meter readings
- access to timely messages about water
- download water account statements
- view announcements
- view and download the allocation assignment register
- create a master account allowing customers to link other customers to their WAS account.

Registered customers are able to access WAS 24 hours a day, seven days a week.

If a customer places an order by post, email, fax or in person, the Customer Service Officer creates a new water order ticket in ManageEngine to process the order. WaterNSW has a validation process to check the details of the water order. Customer Service Officers complete a Water Order Checklist if the water order placed by the customer is non-complying with WaterNSW's ordering information requirements and returns this to the customer to notify them that their order has not been processed and they need to re-submit a new or amended order. A new request is opened if a correct application is subsequently received from the customer.

In terms of the calculation against the required performance standard, the clock starts when the ticket is opened in ManageEngine by a Customer Service Officer and the order is deemed valid. Due to the importance of water ordering to WaterNSW's Systems Operations team, Water Order requests are checked constantly through the day. The majority of water orders are made directly by customers through the WAS, with 72% of water orders processed through the system in 2019-20. Once processed in WAS, the request is closed, and a confirmation email is sent to customer or they are verbally advised if making the order in person or via phone.

If a customer is using WAS directly and tries to place a non-complying water order, the system will not accept the order. The system is set up not to process the order unless all the required fields have been correctly entered by the customer.

We reviewed the non-complying water orders that WaterNSW received in 2019-20 and confirmed that it had received a total of 1,046 non-compliant orders.

There are two sub-categories within ManageEngine that are recorded as "Non-Complying". The first, "Non-Complying but approved" is used when the Water Order application has been completed correctly by the customer, but the first pumping day is inside their minimum lead days, so the System Operations team need to approve the order before it can be accepted and processed in the Water Accounting System. Customer orders within the minimum lead time required for them to extract water from the river are assessed during the water order validation process that all water orders follow. If the System Operations assessment shows that there is sufficient water in the river to meet the customer's order, the order is assessed as complying and entered into WAS. If there is insufficient water in the river to meet the customer's order, the order is processed as non-complying and the customer informed of the outcome. As WaterNSW does not need to notify customers to rectify orders inside the minimum lead time if there is sufficient water to meet the customer's requirements, these are not included in the dataset used to report against clause 4.3.2. The "Non-Complying but approved" represent 897 of the total 1,046 non-compliant water orders that were received in 2019-20.

Therefore, 149 of the total 1,046 non-compliant water orders that were received in 2019-20 have been categorised as a "non-complying water order" as opposed to a "non-complying but approved" water order. The "non-complying water order" requests contain errors or omissions in the customer's application that require a rejection of the initial request and the customer needs notifying within 24 hours.

The elapsed time is defined as the difference between the time that the ticket was opened and the time that the customer was informed of the outcome of their

application. The elapsed time for each work order is calculated in the ticket system using in-built operational hours. The clock stops after 4.30pm, and restarts at 8.30am. When the non-complying water order tickets are filtered for review and reporting, any entries with an elapsed time above eight hours are deemed as being in excess of one working day.

We reviewed WaterNSW's reported non-compliance and confirmed that a total of 32 water orders recorded an elapsed time more than eight hours.

WaterNSW manually reviews all non-complying water orders with an elapsed time greater than one day to check for notes confirming that the customer has been notified within the one working day performance target. If the ticket is shown to be compliant even though the calculated ticket elapsed time is greater than one working day, it is excluded from the non-compliant water order numbers. The orders that have been identified as "*compliant but outside elapsed time filter*" relate to orders where a customer service officer may not have closed off the ticket even though they have communicated the outcome to the customer within the required one working day target.

Of the total of 32 non-complying water orders with an elapsed time of more than eight hours, there are Customer Service Officer record-keeping notes in 30 records that indicate the customer was notified within one business day.

We reviewed a sample of water order that were reported from the system with an elapsed time of greater than one working day but manually identified as "*compliant but outside elapsed time filter*" and confirmed that these orders had been correctly excluded from being counted for being non-compliant against the requirement. We confirmed the two non-complying water orders where notification was not provided with the one working day requirement as records 333704 and 365552. The calculated elapsed times for these were 139:16:35 and 54:05:28 respectively.

Using the 149 non-complying water orders and excluding the 897 non-complying but approved requests, a WaterNSW's performance for the financial year is 98.66%, which is not compliant with the 99% target under the obligation.

Although clause 4.3.2(b) states that CSR Water Delivery Performance Standard A should be "*calculated as a percentage of all Non-complying Water Orders placed in the financial year,*" as there is no requirement to notify customers for the non-complying but approved orders, we consider that this category of non-complying orders should not be included in the calculation. Although it is not clear from the description of the performance standard in clause 4.3.2(b), we consider that the intent of this indicator relates to a measure of performance where an action is required by WaterNSW to contact the customer. Therefore, only the non-complying orders where the action is to contact the customer should be included in the calculation. We have included a recommendation below for WaterNSW to develop reporting procedures for this and its other performance standards.

WaterNSW notes that due to the drought and the lack of available water, the numbers of water orders were low during the year and even a very small number of customers being contacted outside the one working day window (two in 2019-20) can mean that it

does not meet this required performance for the obligation. WaterNSW processed over 3,200 water orders through the service centre during the period.

Recommendation

Recommendations 4.3.2-1: By 30 June 2021, develop and implement procedures for reporting in line with CSR Water Performance standards under clause 4.3. These should define the performance measure, set out inclusions and exclusions and include the process for reviewing, and, where required revising, the data for reporting against the performance standard, the overall calculation and any review and approval requirements.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 4.3.3

Table 44. Clause 4.3.3 compliance grade

Subclause	Requirement	Compliance grade
4.3.3	<p>CSR Water Delivery Performance Standard B</p> <p>Water NSW must ensure that:</p> <p>a) 99% of Water Orders are Delivered within one day of the scheduled day of Delivery; and</p> <p>b) this is calculated as a percentage of all complying Water Orders placed in the financial year.</p> <p>[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.]</p>	Compliant
Risk	<p>Failure to comply with the requirements of this obligation presents a high risk to WaterNSW's customers of their water orders not being delivered when required to be scheduled and WaterNSW failing to maintain an adequate level of service to its customers.</p>	Target for full compliance
		<p>Evidence that WaterNSW has achieved its CSR Water Delivery Performance Standard B in the audit year.</p>

Summary of reasons for grade

WaterNSW demonstrated that it had achieved its CSR Water Delivery Performance Standard B in the audit year.

This clause is graded Compliant.

Discussion and notes

If a complying water order is received in WAS, the order data, together with information including other customer orders, system gauging and weather forecasts is assessed by WaterNSW's System Operations group. System Operations make the calculations for releases from WaterNSW's storages to meet the required customer demand.

WaterNSW calculates its performance against CSR Water Delivery Performance Standard B and that it has delivered 99% of Water Orders within one day of the scheduled day of Delivery based on the number of customer complaints it has received. Therefore, WaterNSW assumes that customers have received their water orders unless they make a formal complaint to inform the business that they have not. WaterNSW has not identified any Delivery delays during the audit period that have impacted on its performance against the target. There is no current process in place given the low numbers that WaterNSW experiences and each case is reviewed individually on a case-by-case basis.

During the 2019-20 financial year, WaterNSW received two complaints from customers informing that they had not received their water order within the required one day of the scheduled day of Delivery from a total of 107,524 water order pumping days. As a result, WaterNSW delivered more than 99.99% of its water orders within one day of the scheduled day of delivery to meet the 99% requirement under the clause.

Water order complaints recorded in ServiceNow are reviewed by the operational staff to confirm that the complaint is valid. WaterNSW is not responsible for providing the water at a specific level for the customer to access and it is the customer's responsibility to extract the water from the river. If water is delivered but the customer is unable to pump it out from the river, this is not considered to be a legitimate complaint.

WaterNSW uses the upstream and downstream gauging stations to assess whether there was sufficient water in the river to meet the customer's required delivery. As typically there is a bias in the releases from the storage to over release where possible, this generally means there is a surplus in the river so WaterNSW expects that there should be low numbers of complaints. All complaints received by WaterNSW are reviewed and allocated against a category which is reported on monthly in the business unit reporting.

The ServiceNow query to return the complaints was re-run and we confirmed that two complaints were reviewed by the System Operations group and the customers were responded to.

We note that the complaint received on 13 December 2019 related to a water delivery in the Hunter which does not require any lead days to be considered in the delivery time but where because of this, there may be impacts if a lot of customers are extracting water from the river.

We note that for the complaint received on 6 March 2020, WaterNSW erred on the side of caution when accepting the complaint as to whether the water the customer was trying to extract was supplementary water, which is additional water in the river systems after rain events. The Water Sharing Plan rules are different if water has not been released from storages but there is more water in the rivers due to rain events. As some customers pump from the river to their own onsite storages, the additional water that is made available during supplementary water events means that these volumes are well contested at these times and this can lead to constraints in the channels and some customers not being able to access the water.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 4.3.4

Table 45. Clause 4.3.4 compliance grade

Subclause	Requirement	Compliance grade
4.3.4	<p>CSR Water Service Interruptions Performance Standard</p> <p>Water NSW must ensure that:</p> <p>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</p> <p>b) this is calculated as a percentage of all Water Orders rescheduled in the financial year due to an expected shortage or Delivery delay.</p>	No Requirement
Risk	<p>Failure to comply with the requirements of this obligation presents a high risk to WaterNSW's customers not being provided with their required water orders and WaterNSW failing to maintain an adequate level of service to its customers.</p>	<p>Target for full compliance</p> <p>Evidence that WaterNSW has achieved its CSR Water Service Interruptions Performance Standard in the audit year.</p>

Summary of reasons for grade

WaterNSW demonstrated that no Water Orders were rescheduled during the audit period. As a result, we consider that this clause was not triggered during the financial year.

This clause is graded No Requirement

Discussion and notes

If System Operations identify that there is a shortfall and there is insufficient water in the storage or already in the river system to meet a customer's water order, the customer is contacted to arrange a re-scheduled order.

WaterNSW has an enhanced Rescheduled Water Order work instruction to address the compliance of this clause.

Due to the ongoing drought conditions and lack of available water, WaterNSW reported that there were no recorded instances of rescheduling individual water orders during the financial year. This was due to the extremely low (in some cases zero) water allocations for most river systems in the year. This meant that WaterNSW had a very low count of water order days that may have required manual intervention to manage river flow. There were no instances of shortfalls in the financial year, but there was no or very little water available. If a shortfall was to occur, WaterNSW would contact any affected customers.

WaterNSW uses a particular category of System Operations changing delivery dates in its ServiceNow service management system and we re-ran the query at audit to confirm that there were no rescheduled Water Orders in the 2019-20 financial year.

Given that no orders were rescheduled, we consider that this clause was not triggered during the financial year. As a result, we have graded this clause as No Requirement.

Recommendation

There is no recommendation for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 4.3.5

Table 46. Clause 4.3.5 compliance grade

Subclause	Requirement	Compliance grade
4.3.5	CSR Water Account Processing Performance Standard A 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.	Compliant
Risk	Target for full compliance	
If temporary trades are not processed within the necessary timeframe there is a risk to WaterNSW customers to trade water to meet their water supply requirements.	WaterNSW processes no less than 90% of complying Temporary Trades within the State in the financial year within five working days of WaterNSW's receipt of a correct application and fee	

Summary of reasons for grade

WaterNSW reported to IPART in its Statement of Compliance Letter for 2019-20 that 82.07% of complying Temporary Trades within the State in the financial year had been processed within five working days of WaterNSW's receipt of a correct application and fee and that it had not met the required performance target of 90% for the year. The Statement of Compliance Letter included an explanation for the non-conformance and a revised approach that WaterNSW was taking to address the issue related to the external approval of groundwater trades by the Department of Planning, Industry and Environment – Water often taking more than five working days, significantly impacting on WaterNSW's performance against the standard. However, subsequent to this WaterNSW took legal advice which identified that groundwater falls outside the scope of the definition for "CSR Water" under the operating licence, and as a result, the requirements for clause 4.3.5 do not apply to groundwater trades.

IPART is in agreement with WaterNSW that the definition of "CSR Water" does not cover groundwater and that given clause 4.3.5 only applies to CSR Water, it should not be applied to groundwater temporary trades.

Therefore, with groundwater trades excluded from the calculation, WaterNSW has calculated that it processed 94% of complying Temporary Trades within the State in the financial year within five working days of WaterNSW's receipt of a correct application and fee. As a result it has achieved the 90% target required under this clause and is graded Compliant.

Discussion and notes

Water Sharing Plans in NSW allow the trade of allocation water subject to some conditions. This allows water users to manage their water requirements to suit their needs.

Customer wishing to trade are able to download the allocation assignment application form from WaterNSW's website. There are separate forms for regulated, unregulated and groundwater trades. Customers are required to complete a separate form for each trade to avoid duplicate applications. General instructions for completing the form are provided on WaterNSW's website and there is also a Frequently Asked Questions section which addresses specific steps in the trading process. Customer pay the application processing fee and submit the completed application to WaterNSW for processing. The application forms can be submitted by post, fax or email.

Once the application form is received by WaterNSW, a ticket is created in the ServiceNow service management system and the details added. The application is validated, and, where required, external approval for the trade is sought. Trade approvers include the Department of Primary Industry & Environment - Water for groundwater trades, the other State authorities when the trade is interstate and the MDBA for trades within the Barmah Choke section of the River Murray. All groundwater trades have to be sent to the Department of Primary Industry & Environment - Water for hydrological assessment given the sensitive nature of the resource.

The outcome of the validation and approval process is communicated back to the customer. If the application is invalid or cannot be approved, the customer is informed that they need to submit an amended application form. Once the application has been approved and the allocation assignment entered into WaterNSW's WAS water ordering system or rejected, the customer is notified and the ticket is closed.

The difference between the date that the ticket was created and closed is used to calculate WaterNSW's performance against the standard. The reporting data is reported from WAS, with allocation assignment transactions being able to be returned based on a date range selection and also to show the trades for each State. WaterNSW has a work instruction for this process. Monthly reporting is performed as part of the COAG requirements and published on the WaterNSW website.

The raw report data is exported in .CSV format and copied into an Excel template for processing and summarising. At audit we re-ran the report to return the trades for May 2020 and confirmed that these reconciled with the breakdown for the month that WaterNSW has included in the annual report used to calculate and report the overall performance against the standard for the year.

WaterNSW explained that the service standard for complying Temporary Trades within the state historically only referenced trades in the regulated water system.

For the 2019-20 financial year, WaterNSW reported that 3,789 of the total of 3,885 (97.53%) regulated water trades and 39 of the total of 46 (84.78%) unregulated water trades were processed within five working days. However, only 633 of the total 1,541 (43.02%) groundwater trades were processed within five working days. Therefore, 4,491 of the 5,472 total water trades were reported as having been processed within five

working days to meet the standard during the year, equivalent to 82.07%. As a result, WaterNSW identified that it had not met its obligation under this clause for the audit period and reported this non-compliance in its Statement of Compliance letter to IPART for 2019-20 dated 28 August 2020.

Historically groundwater trades have been low in volume. However, as a result of the drought, where surface water has not been available, customers have been turning to groundwater to meet their water requirements, causing the demand for groundwater trades to increase significantly.

As the time taken by the Department of Planning, Industry and Environment – Water to review and approve the groundwater trades is out of the control of WaterNSW, WaterNSW implemented a revised approach to measuring and reporting compliance against this obligation.

Effective 1 July 2020, WaterNSW has also started to report the time taken to process a groundwater trade by WaterNSW, excluding the time taken by the Department of Planning, Industry and Environment – Water to complete its hydrological assessment and until the approval is returned to WaterNSW.

However, subsequent to adopting this revised approach and reporting this to IPART in the Statement of Compliance letter for 2019-20, WaterNSW sought legal advice as to whether clause 4.3.5 of WaterNSW's operating licence applies to water trades involving groundwater. This advice concluded that clause 4.3.5 does not apply to any groundwater trades, as groundwater falls outside of the scope of the definition for "CSR Water", under the operating licence. IPART has agreed with this finding.

Therefore, with groundwater trades excluded from the calculation, WaterNSW has calculated that it processed 94% of complying Temporary Trades within the State in the financial year within five working days of WaterNSW's receipt of a correct application and fee. As a result, it is compliant with the 90% target required under this clause.

Recommendation

There is no recommendation for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 4.3.6

Table 47. Clause 4.3.6 compliance grade

Subclause	Requirement	Compliance grade
4.3.6	CSR Water Account Processing Performance Standard B 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.	Compliant
Risk		Target for full compliance
Failure to comply with the requirements of this obligation presents a high risk to WaterNSW's customers not being able to trade water to meet their water requirements and WaterNSW failing to maintain an adequate level of service		Evidence that WaterNSW has achieved its CSR Water Account Processing Performance Standard B in the audit year.

Summary of reasons for grade

WaterNSW demonstrated that it has achieved its obligation under clause 4.3.6 to 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 WaterNSW's receipt of a correct application and fee. We confirmed that for 2019-20, WaterNSW achieved a 98.20% performance against the standard.

This clause is graded Compliant.

Discussion and notes

The key steps for processing, recording and reporting Temporary Trades have been outlined under clause 4.3.5.

WaterNSW measures its performance against the standard based on the number of whole business days between the date of the receipt of the application (including the correct application payment and a correctly completed and accurate application form) and the processing/registered date in WAS.

For the 2019-20 financial year, WaterNSW has reported that 1,365 of the total of 1,390 Interstate Temporary Trades (except to South Australia) were processed within ten working days of WaterNSW's receipt of a correct application and fee, equivalent to 98.20%. As a result, WaterNSW has met its obligation under this clause for the audit period. At audit we re-ran the report to return the trades for May 2020 and confirmed that these reconciled with the breakdown for the number of applications received and the number processed within ten working days for the month that WaterNSW has included in the annual report used to calculate and report the overall performance against the standard for the year.

Recommendation

There are no recommendations in respect to this clause

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Clause 4.3.7

Table 48. Clause 4.3.7 compliance grade

Subclause	Requirement	Compliance grade
4.3.7	CSR Water Account Processing Performance Standard C 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.	Compliant
Risk	Failure to comply with the requirements of this obligation presents a high risk to WaterNSW's customers not being able to trade water to meet their water requirements and WaterNSW failing to maintain an adequate level of service	Target for full compliance Evidence that WaterNSW has achieved its CSR Water Account Processing Performance Standard C in the audit year.

Summary of reasons for grade

WaterNSW demonstrated that it has achieved its obligation under clause 4.3.7 to ensure that no less than 90% of Interstate Temporary Trades to South Australia in the financial year are processed within 20 working days of WaterNSW's receipt of a correct application and fee. We confirmed that for 2019-20, WaterNSW achieved a 98.77% performance against the standard.

This clause is graded Compliant.

Discussion and notes

The key steps for processing, recording and reporting Temporary Trades have been outlined under clause 4.3.5.

WaterNSW measures its performance against the standard based on the number of whole business days between the date of the receipt of the application (including the correct application payment and a correctly completed and accurate application form) and the processing/registered date in WAS.

For the 2019-20 financial year, WaterNSW has reported that 482 of the total of 488 Interstate Temporary Trades to South Australia were processed within twenty working days of WaterNSW's receipt of a correct application and fee, equivalent to 98.77%. As a result, WaterNSW has met its obligation under this clause for the audit period. At audit we re-ran the report to return the trades for May 2020 and confirmed that these reconciled with the breakdown for the number of applications received and the number processed within twenty working days for the month that WaterNSW has included in the annual report used to calculate and report the overall performance against the standard for the year.

Recommendation

There are no recommendations in respect to this clause.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Clause 5.1 – Asset Management System

Clause 5.1.1

Table 49. Clause 5.1.1 compliance grade

Subclause	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 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).	Compliant
Risk	Failure to have an Asset Management System in place is a high risk of reduced levels of service, higher operating risk and costs not minimised across their lifecycle. WaterNSW’s assets include assets with a high consequence of failure such as dams and assets vital to water quality. Therefore, non-compliance with this clause presents a high risk.	Target for full compliance Evidence that WaterNSW has in place an Asset Management System for its licence functions and consistent with ISO 55001:2014

Summary of reasons for grade

WaterNSW continued to maintain an Asset Management System consistent with ISO 55001 during the audit period. The Asset Management System was re-certified to ISO 55001 during the audit period and a third party surveillance audit conducted in 2020 identified no major non-conformances. The audit observed one minor non-conformance related to the management of controlled documents, with some documents reviewed in the audit having review dates that had lapsed. We confirmed that WaterNSW has recorded this non-compliance in its RACS and established a series of actions to address the issue, with responsibilities and due dates assigned.

We consider that WaterNSW has demonstrated that the Asset Management System has been maintained during the audit period.

This clause is graded Compliant.

Discussion and notes

This clause requires that 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 ISO 55001:2014 Asset Management – Management systems – Requirements or other standard approved by IPART.

WaterNSW has in place a management system for asset management that was most recently certified against the standard ISO 55001:2014 Asset management – Management systems – Requirements on 10 January 2020. This certification replaced the previous certification that had been in place since 10 January 2017.

Third party surveillance audits are carried out annually to ensure WaterNSW’s compliance with the standard and that activities are being carried out in accordance with the AMS. The 2020 external surveillance audit identified no major non-

conformances and one minor non-conformance related to the management of controlled documents, with some documents reviewed in the audit having review dates that had lapsed. We confirmed that WaterNSW has recorded this non-compliance in its RACS and established a series of actions to address the issue, with responsibilities and due dates assigned.

The scope of the WaterNSW's Asset Management System 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

WaterNSW's overarching Asset Management Policy provides a commitment that *"WaterNSW is committed to providing effective asset management in order to achieve its legislated and strategic business objectives"* and also states that *"...WaterNSW will apply the Asset Management System to all physical assets"*.

WaterNSW's Strategic Asset Management Plan defines the management system, stating that the scope of the asset management system is "physical assets utilised by the organisation to deliver its services including infrastructure, water quality management, catchment protection and internal support". The Strategic Asset Management Plan essentially acts as a system manual in that its structure is consistent with the requirements of the ISO55001:2014 standard and, therefore, it provides a reference for how the elements of the standard are addressed.

The asset management system framework provided in the Strategic Asset Management Plan also sets out how stakeholders influence and provide information and feedback into the different elements of the overall system, including input into the asset management objectives, the Asset Management Plan lifecycle processes, performance measurement and continuous improvement activities.

A separate asset management system document framework is used to specify and govern the system. Stakeholders are informed of these documents through the Strategic Asset Management Plan.

Leadership support with regard to its asset management system is evidenced by WaterNSW progressing the development and implementation of the ISO 55001:2014 accredited asset management system and formally in the asset management policy which forms part of the system. We confirmed that the asset management policy was displayed at the Duckmaloi Water Treatment Plant.

Maintenance practises at the Duckmaloi Water Treatment Plant were discussed with a staff member, who had a thorough understanding of requirements of the work orders and frequency of tasks pertaining to his work areas. However, when questioned around some of the asset management principles, they were less knowledgeable, indicating there is a potential disconnect between the asset planning function and the maintenance function. While it is not an imperative for all staff to understand the details of asset management, providing context to maintenance and operational staff results in improved engagement and application of the asset management system. However, WaterNSW responded that context and engagement regarding the Asset Management System is provided to all employees in maintenance functions. WaterNSW provided

training records that showed that all staff at Fish River had completed the mandatory training in Asset Management System Awareness within the last 12 months at the time of the audit. The training expires after a three-year period.

We do not consider that a recommendation or an opportunity for improvement is applicable in this instance as this is less a training issue than it is a culture issue, and one that would be expected to be addressed through the process of continuous improvement. In order for maintenance staff to understand the broader asset management context to which they are contributing to, for example, ensuring the assets achieve their useful lives and understanding how the current condition affects renewal forecasts, there needs to be regular engagement between the central Asset Management personnel and the field staff. This regular engagement would be expected to include seeking knowledge and understanding of equipment directly from the field staff and to relay their current view on where the assets are at, how they are meeting demand and upcoming capital project plans. Through the continuous improvement process, asset management becomes a part of 'business as usual', not something that a separate team within the business does.

WaterNSW has maintained a continuous improvement plan since the development of the Asset Management System in 2016 and any non-conformances identified through audits are managed through its RACS system and cross-referenced in the Improvement Plan. WaterNSW provided a copy of the Asset Management System Continuous Improvement Plan and we confirmed that tasks had been identified, with responsibilities and due dates assigned. Each entry also had references to actions recorded in RACS.

Recommendation

There are no recommendations in respect of this obligation.

Opportunities for improvement

No opportunities for improvement have been identified in respect of this obligation.

Clause 5.1.2

Table 50. Clause 5.1.2 compliance grade

Subclause	Requirement	Compliance grade
5.1.2	Water NSW must fully implement the Asset Management System and carry out all relevant activities in accordance with the Asset Management System.	Compliant
Risk	Failure to implement the Asset Management System presents a high risk of reduced levels of service, higher operating risk and costs not minimised across their lifecycle. WaterNSW's assets include assets with a high consequence of failure such as dams and asset vital to water quality. Therefore, non-compliance with this clause presents a high risk.	Target for full compliance Evidence that WaterNSW carries out all relevant activities in accordance with the Asset Management System.

Summary of reasons for grade

Based on observations during the field verification visits and the discussion presented in respect of this obligation and clauses 2.4.1 and 3.1.1, WaterNSW demonstrated that it had continued to implement and carry out its activities in accordance with its Asset Management System during the audit period.

Capital projects have been planned and delivered and infrastructure operated and maintained in accordance with practices consistent with requirements of the System. WaterNSW's continuous improvement process has identified opportunities for improvements and a number of these have been implemented during the audit period.

Based on the discussions, site visit operations and review of documentation and undertaken activities, we consider that WaterNSW has demonstrated compliance with this obligation.

We have awarded a grading of Compliant.

Discussion and notes

In addition to the comments included in this section against clause 5.1.2, we have also discussed the maintenance of an Asset Management System under clause 5.1. and the implementation of the system under clause 2.4.1 (Catchment Infrastructure Works management) and clause 3.1.1 (Construct, maintain and operate Water Management Works).

As noted under clause 5.1.1, WaterNSW has maintained certification during the audit period and undertakes annual third party surveillance audits to ensure compliance with the standard and that activities are being carried out in accordance with the AMS.

Strategic Asset Management Plan

WaterNSW's Strategic Asset Management Plan provides the alignment between the Asset Management Objectives, Corporate Objectives and the Asset Management Policy. A total of eleven asset management objectives have been defined to support the corporate objectives and to guide the asset management policy principles. Each of

WaterNSW's asset management objectives has specific asset management measures that support achieving the objectives.

WaterNSW uses two key planning documents to achieve its asset management objectives, the Asset Management Plan and a series of Asset Class Strategies.

Asset Management Plan

WaterNSW has a single asset management plan for all of its operations (Greater Sydney and rural). The Asset Management Plan includes a register of the tasks required to achieve the asset management objectives, and this provides details of projects, timescales and budgets. In effect this makes the asset management plan a work plan covering the operation and maintenance activities and the capital projects required to deliver service from the assets to meet the objectives.

Asset Class Strategies

The asset class strategies provide high level strategic direction for each asset class for how the assets within a class should be managed throughout their life cycle to optimise risk, performance and cost. Through the process of determining the risk, performance and cost trade-offs for each asset class, the asset class strategies then provide important input into WaterNSW's expenditure proposals, assisting prudent and efficient proposals to be developed. In addition, the information in the asset class strategies subsequently feeds into the development of the asset management plan. We reviewed the Asset Class Strategies for WaterNSW's water monitoring and land asset classes. We confirmed that the documents provide details of the overall intent of the strategies for facilitating the decision-making processes for the asset categories, with performance-based outcomes being used to develop investment plans, operational strategies, maintenance requirements, renewal options and disposal considerations. The Asset Class Strategies also specify the processes used by WaterNSW to plan and coordinate the relevant asset portfolio maintenance and renewals over the short and longer term.

WaterNSW has now developed 20 asset class strategies. It approached the development of the documents on a prioritised basis, starting with the most critical classes and those for the predominant assets in the overall portfolio. Although WaterNSW still has a few minor asset class strategies to complete, the focus of the work has now moved onto the technical standards and specifications for delivery to meet the asset management plan tasks and deliver the objectives.

Asset Creation/Renewal

Asset creation/renewal in accordance with the Project Delivery Framework is discussed under clause 3.1.1. The Chaffey to Dungowan pipeline, which reached practical completion during the audit period, was reviewed in detail. Not all of the assets have been input into the Enterprise Asset Management System as the hierarchy was still being finalised with the Project Delivery group. Similarly, operating and maintenance plans have been developed and reviewed, but not yet been finalised for adoption. These are standard activities within the asset handover phase of a project, with time to complete these actions expected in the normal course of finalising a capital project. As such, an Opportunity for Improvement to complete these items is not required.

WaterNSW implements a Maintain Capability Capex Renewals program to ensure the ongoing performance of its assets. WaterNSW uses the condition and criticality data recorded against each asset in its Enterprise Asset Management System as the source data for the development of its renewals program. WaterNSW demonstrated how it uses its PowerPlan tool to identify and assess candidates for its asset renewals. We reviewed a number of examples of candidate assets for inclusion in WaterNSW's renewals program and consider, although the process is maturing, that it allows WaterNSW to develop its renewals program based on asset condition and performance data, while also accounting for risk and costs.

Operations

The requirement for WaterNSW to supply water to its customers in accordance with the terms and conditions of the relevant Customer Supply Agreements is under clause 6.1.2.

Non-conformances, either with supply agreements or water quality event management protocols are recorded in WaterNSW's Risk Assurance and Compliance System (RACS) as required. We reviewed a sample of non-conformances recorded in RACS for incidents on the Fish River Water Supply Scheme and the raw water supplies to Wingecarribee Council and Sydney Water. Further details are provided under clause 3.2.1.

Maintenance Management

WaterNSW delivers the objective for the work management processes for its Water Management Works through its Enterprise Asset Management System, work orders and work order management processes and its Maintain Capability Capex Renewals program. Asset maintenance plans have been developed and are implemented using the maintenance management component of the Asset Management System.

A sample of maintenance records for tasks completed at the Warragamba Dam and on the Fish River Water Supply Scheme were sighted as evidence that maintenance programs continue to be implemented.

Competence

Ongoing training is required to ensure that competence in asset management practices is developed and maintained. Asset Management System awareness training material is available to all staff and information available in a presentation format has now been developed into an online e-Learning module within WaterNSW's MyLearning training management system.

The Asset Management System is owned, maintained and implemented across WaterNSW by the Assets Capability team. Mandatory training requirements are identified and documented in WaterNSW's Mandatory Training Matrix which identifies training requirements by role/position.

A weekly newsletter is also produced by the Assets team. This provides information on safety issues, updates of work that have been carried out on assets, continual improvement activities and details of incidents that have been recorded in RACS.

Management Review

Ongoing asset management activities are included in regular management and Board reports. Water quality performance against relevant standards is reported to the WaterNSW Board and Executive in monthly and quarterly reports described under element 10.2 of the Water Quality Management System (more details are provided under clause 6.1.2). System Yield changes are reported to the Board for approval prior to reporting to the Minister (more details are provided under clause 2.5). Incidents are also included in management and Board reports.

WaterNSW produces an annual Asset Performance and Health Report which is used to inform the Infrastructure and Operations subcommittee of the Board on matters that include:

- an asset health summary statement
- an asset facility profile that provides an overview of critical facilities
- specific asset risk evaluations undertaken
- summary of reported asset failures, including asset initiated safety incidents
- water delivery capacity loss over the year against each water delivery asset
- an asset Health profile that *“provides assurance that the risk (health) of the entire asset portfolio is optimally maintained through an adequate asset management plan (a combination of CAPEX and OPEX treatments) across the entire portfolio over the medium term (10 years)”*
- summary of asset management activities undertaken to remedy risks and issues, including summaries of key projects/programs being planned or in progress and backlog maintenance work and an expenditure commitment profile over the next ten years so as to maintain asset capability
- continuous improvement to the report that lists initiatives completed or in progress to improve the methodology and metrics presented in the report to communicate the health of WaterNSW’s core assets
- asset Health and Performance summaries on Non-water Service Delivery Assets.

WaterNSW prepares the Compliance and Performance Report - Asset Management System annually for submission to IPART (referenced in Annual System Health Check) and this is also used to report progress against objectives and targets to the Board.

Achievement of the practical completion milestone for WaterNSW’s projects is noted in monthly project reporting documents. A monthly Assets Project Status Report includes the status of each project with written descriptions and overall health ratings for project subcomponents such as schedule, costs, risk, and safety. Similarly, the Maintain Capability Program (MCP) Performance Report provides monthly progress information related to WaterNSW’s renewals and replacement program. Papers are submitted to the Board Committee on Assets to demonstrate ongoing due diligence in relation to the adequacy and effectiveness of the work being delivered by the Assets business unit.

Continual Improvement

WaterNSW has incorporated continuous improvement into the implementation of its Asset Management System. It has an Asset Management System Continuous Improvement Plan and prioritises actions based on risk.

WaterNSW has implemented the following key improvements during the audit period:

- Revised Strategic Asset Management Plan based on feedback from an external asset management consultant audit in June 2019, including:
 - reduced duplication in SAMP and Integrated Business Management System Manual
 - improved alignment between operational processes and documentation
 - revised and updated AMS documentation map
 - Dam Safety Management System included in Asset Management System Framework.
- Continual Improvements to Enterprise Asset Management System, including:
 - integration of Land and Catchment Assets
 - integration of Water Monitoring Assets (South East/South West)
 - review and streamlining of Maintenance Plans based on Failure Modes, Effects and Criticality Analysis
 - Mobility Solution (in progress)
 - integration of assets and maintenance plans for Wentworth to Broken Hill Pipeline (in progress)
 - Water Monitoring Assets integration (remainder of sites – in progress)
 - EAMS to RACS integration (in progress)
 - EAMS to HR integration (in progress).

We confirmed that the Revision History in the Strategic Asset Management Plan includes the changes that have been made in the most recent update and confirmed that these reconcile with the feedback from the external asset management consultant audit in June 2019, listed above.

During the demonstration of the Enterprise Asset Management System over the course of the audit, we discussed and observed some of the improvements that WaterNSW has made during the audit period.

Management of critical assets and monitoring equipment

WaterNSW determines asset criticality and condition through its asset condition and criticality procedures. Critical assets are identified through the application of the Asset Criticality Assessment Procedure (CD2015/331). The criticality is scored individually using a 0-5 scale (0 = no risk, 5 = severe) across six different factors:

- safety
- capability / service delivery
- environment
- compliance
- financial
- reputation.

The highest individual score across the six factors is used as the overall criticality for the asset.

We note that water quality is not included as a criticality factor in the asset criticality assessment procedure. WaterNSW noted that the focus is on water delivery assets and these are typically raw water assets. We reviewed a sample of assets at the Duckmaloi Water Treatment Plant that provides treatment for the Fish River filtered water customers and observed that these assets had been scored with the highest criticality score of “5”.

WaterNSW uses the criticality to prioritise both maintenance planning and the asset renewals included in its capital works program. Criticality is a data field/ attribute in WaterNSW’s maintenance system and also in its PowerPlan asset investment planning tool.

WaterNSW’s criticality assessment procedure also applies to its monitoring equipment. WaterNSW has reviewed this asset class in the last 12 months using the same principles as for its other classes.

The criticality of an asset is a factor in the frequency and the type of maintenance undertaken, with the maintenance requirements driven by the asset themselves. More frequent and/or detailed inspections would be expected to be carried out on a more critical asset than a less critical infrastructure. If an asset is not considered to be critical or if there is asset redundancy, the asset may be run to fail. Maintenance backlog is also prioritised based on the criticality of an asset.

Across the audit, WaterNSW demonstrated its Enterprise Asset Management System used for recording the asset hierarchy for all of its sites and facilities across the state and for its maintenance planning. It also demonstrated the PowerPlan asset investment tool that it uses for developing its asset renewals plan. We confirmed that these both included the criticality score as attributes. PowerPlan derives its back-end data directly from the asset information that is recorded in the Enterprise Asset Management System.

Although the criticality of an asset is used to assist in the prioritisation of WaterNSW’s renewals and maintenance work, on its own it does not really determine where investments should be made. Instead the combination of criticality and asset condition is used as a more robust decision-making driver for renewals or for increasing maintenance requirements. An asset that has both a high criticality score and a poor condition score would be expected to have a higher priority for an action to address this than an asset that doesn’t fulfil both criteria. Local field crew with better knowledge of the assets they maintain are involved in maintenance and renewals discussions to provide input as to how important a particular asset is or whether there are any specific issues with it.

Integration of lessons learnt from the bushfires and torrential rain incident into future asset management

Bushfires

The bushfires started in the north of the state and began to impact WaterNSW sites in November 2019. A bushfire in late November 2019 started at Green Wattle Creek in the Warragamba catchment. Although the Warragamba areas were heavily impacted by the bushfires, the metropolitan areas were kept largely fire free.

WaterNSW formed an incident management team that ran for 7-8 weeks over the period of the bushfire with a key aim to maintain the safety of staff, visitors and contractors, as well as protect the assets. With a continuously changing situation, the incident management team restricted access at risk sites for employees, visitors and contractors when required and liaised with the Rural Fire Service (RFS) and customers.

All incidents experienced during the bushfires and torrential rain events were managed in accordance with WaterNSW's Incident Management Procedure (CD2017/180).

WaterNSW has internal bushfire protocols and established protocols with RFS at a couple of levels. In the case of last summer's fires, the RFS has responsibility for fire fighting operations under the *Rural Fires Act 1997* (NSW), which means the RFS can give direction to other agencies.

WaterNSW was embedded into the RFS incident management team during the bushfire to minimise impacts where possible on catchments and water monitoring and water delivery infrastructure, in accordance with WaterNSW's Bushfire operational protocol (D2016/112894). At an operations level, WaterNSW had staff in RFS control rooms around fires in specific areas, e.g. Picton and Katoomba to provide support in operating activities. WaterNSW has a small group of staff that have training in RFS competencies and these resources were assigned where they could be useful. The Catchment team worked with RFS to provide local, on-the-ground knowledge.

The Bushfire Operational Protocol (Declared Catchment) sets out the prevention strategies, preparedness strategies, response and recovery strategies.

During the bushfires, WaterNSW minimised site activities at Warragamba Dam to only critical tasks. This was carried out in consultation with Dam Surveillance teams. Where possible, automated surveillance data collection was also utilised through remote access via instrumentation upgrades.

Remote operation capability via the SCADA system was also utilised where possible to initiate changes to release valves on the storages.

Trash booms were deployed in Warragamba Dam and some of WaterNSW's other storages to restrict debris from bushfires progressing towards water offtakes to minimise any impacts on water quality. The trash booms were additional assets that were implemented out further into the storages than the more permanent outlet screens that collect debris from the surface. WaterNSW had some material to construct the booms in its stores and when the scale of fires became evident, more material was purchased.

In terms of delivery, the bushfires did not fundamentally change the way WaterNSW operates. As per its protocols, it always aims to minimise relying on pumped supply whenever possible (Upper Avon, Upper Cascades in particular). However, the bushfires highlighted this risk when it was combined with low storage levels, therefore increasing reliance on pumped supply and increasing susceptibility to power outages as a result of bushfire impacting transmission assets.

The bushfires also impacted access to some sites, which meant there was less opportunity to make operational changes. Given the water supply was stable during this period the key issue was ensuring continuity of supply to Shoalhaven City Council via releases from Tallowa while they were unable to access parts of their system, e.g. Danjera Dam.

Major works such as the commissioning of the Warragamba Deep Water Pumping Station were deferred due to imminent threat of fire in January 2020.

Operations on the Fish River Water Supply Scheme were also not fundamentally changed but were challenged by numerous breaks as a result of RFS activity, including direct damage from heavy machinery and rapid changes in pressure due to unapproved extraction of water by bulk tanker direct from the pipeline. Although WaterNSW had to repair the breaks on the pipeline, customers were impacted for less than 24 hours. At the Glen Davis end of the pipeline, WaterNSW reached an outcome with the RFS to ensure that water was made available for fire fighting but that water was also available to fill the storage.

For its land and catchment assets, WaterNSW has a separate process to prepare an annual condition report which informs the maintenance plan for these assets. This is a formal process and the maintenance plan is provided externally to other government agencies.

Fire trail maintenance in its Declared Catchment is a Business as Usual activity for WaterNSW. Maintenance is scheduled in the Enterprise Asset Management System and examples of schedules and work order details were viewed during the audit. Vegetation removal is completed using mechanical means, with herbicides only used for weed control. If fires are in the vicinity, the fire trails are inspected to allow any final preparation and clean-up to be carried out if needed.

In the Greater Sydney special areas, WaterNSW contracts RFS to provide a full time crew from the state mitigation division to provide response capability. However, there is no Memorandum of Understanding between WaterNSW and the RFS. The Terms of Reference for the contract include a periodic meeting with between WaterNSW's Executive Manager Assets and senior RFS staff at Deputy Commissioner level for discussions on measures that impact water quality. RFS staff work under a day labour type contract to complete an agreed task list, with WaterNSW supervising the work.

Although some minor WaterNSW infrastructure was damaged through the bushfires, there was no significant impact or damage to system operations or water delivery infrastructure.

Based on the discussions with WaterNSW and the evidence that was presented and demonstrated, the bushfire events were managed in line with operating protocols and

system operating rules. The bushfire incident did not have a major impact on system operations apart from a reduced frequency of operational changes at some sites due to limited access and/or loss of communications.

Debriefs were undertaken for the bushfire incidents and a Recovery Plan was initiated, with actions for improvements under development in relation to asset protection and land management. Further details of the actions for improvement that were identified are outlined below.

Torrential rain incident

The risks from a torrential rain event were identified as an issue by WaterNSW early on in the drought. However, with summer bushfires starting to eventuate, the risk of bushfires followed by a rain event was identified. As a result, WaterNSW undertook an emergency exercise in November 2019 where they looked at fire and rain events in the Warragamba catchment and the impacts on water quality. The scenario was designed to test WaterNSW, Sydney Water and NSW Health responses to bushfire in the drinking water catchments and preparedness and response to potential water quality impacts of rainfall after fire. That this was identified as a risk with a high likelihood of occurring meant that when it did eventuate, WaterNSW were not caught by surprise and instead they had time to assess and plan for mitigation measures to address the risk events. A debrief report for the exercise was prepared that documented the positive outcomes and also identified the lessons learnt and the opportunities for improvement. This resulted in an Improvement Action Plan being developed and implemented.

The water quality monitoring program was a key consideration in preparing for the impacts of bushfire followed by a rain event. As a result, WaterNSW worked with customers and NSW Health to develop a suite of post bushfire runoff water monitoring analysis. This included testing for characteristics not included in the routine water quality testing normally carried out, e.g. Polycyclic Aromatic Hydrocarbons (PAHs) and additional metal parameters. The sampling program that was put in place was pre-approved by Sydney Water and NSW Health.

WaterNSW consulted with Melbourne Water who had previous experience of managing these events. Discussions were also conducted with the Bureau of Meteorology (BOM) related to run-off modelling. However, BOM noted that that run-off can be anything from 0 to 100%, making it very hard to gauge how a catchment would respond.

Through stakeholder and customer engagement, WaterNSW developed contingency plans and monitoring programs to be implemented in the event of a major inflow event. As such, when the event occurred, the response was very much a case of the planned implementation of contingencies.

During the event in February WaterNSW implemented a number of agreed contingency plans to avoid turbid water intrusion in Warragamba. For periods of time, the Prospect Water Filtration Plant was supplied solely from Prospect Reservoir with the pipelines configured to maximise available "good" quality water stored in the pipelines for supply to Orchard Hills and Warragamba Water Filtration Plants. Although this reconfiguration was the first time that the Prospect Water Filtration Plant was supplied solely from

Prospect Reservoir, this was done proactively as WaterNSW knew that there would be issues with water quality at the dam wall and decided not to wait and react.

WaterNSW provided evidence for this change of operation in a Notification of Change to System (NOCTSO) for the preparation for water quality deterioration from Warragamba Dam in February 2020 and a change of supply to minimise the risks associated with intrusions in Lake Burragorang from recent heavy rain events. The NOCTSO included a timeline and risk assessment. Prospect Reservoir level was maintained via diversions from the Upper Canal and Warragamba pipelines. During the event WaterNSW followed the normal operating rules and initiated Shoalhaven transfers and pumping from Nepean to Avon.

As a result of WaterNSW identifying the potential risks and planning in advance for Sydney Water, it was able to implement the contingency plans, supported by a pre-approved sampling program, that it had been developing over the course of the preceding months and be able to provide high quality water to its customers. During the rain events, no spills at the storages were experienced.

Lessons learnt

Key lessons have been documented in the joint incident debrief with NSW Health and Sydney water, although this report is yet to be finalised. These mostly involved collection and sharing of water quality data rather than system configuration. WaterNSW and Sydney Water had completed substantial pre-planning for such an event and, as such, changes to system configuration were carried out as planned implementation of contingency plans as opposed to reactive changes.

Other issues identified were the risks involved with repeated pipeline configuration changes. Pipelines do not need to be offline for long before sediment settles out, resulting in turbidity spikes on restart.

WaterNSW developed a Bushfire Recovery Report (D2020/63325) which includes a number of actions and reports progress, status and issues against them. The actions are reported under 13 different streams of work:

- water monitoring
- SCADA
- water quality
- Special Areas and Joint Management
- land management
- recreation areas
- buildings and contaminated lands
- pine plantations
- wellbeing
- insurance and claims
- stakeholder engagement
- external reporting
- project management.

Although there were no impacts on major infrastructure, a number of hydrometric sites were destroyed in the bushfires. The latest update of the Bushfire Recovery Report (1 July 2020) reports that all proposed work for water monitoring and SCADA to replace assets that were damaged has been approved for expenditure through WaterNSW's Approval to Spend (ATS) framework.

WaterNSW is also taking the opportunity to review its Asset Protection Zones, asset locations and asset configuration (construction/materials) to reduce, where possible, the future risk of similar bushfire impacts. The Asset Protection Zones are the cleared perimeters around assets to minimise the direct impact from any fires. However, WaterNSW has identified that there would not have been changes to the outcomes in most situations with the recent fires even if these protection zones had been twice the size. There have also been ongoing requirements during the recovery process to confirm needs, configuration and location of asset.

The Bushfire Operational Protocol (Declared Catchment) sets out the prevention strategies, preparedness strategies, response and recovery strategies. The document was last reviewed and updated in August 2019 and is on a two-year review cycle. Given the events of last summer, we consider that there is an opportunity for improvement to review and update the protocol to check whether any of the lessons learnt can be incorporated into the protocol to improve any of the strategies.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

OFI 5.1.2: The Bushfire Operational Protocol (Declared Catchment) was last reviewed and updated in August 2019 and is on a two-year review cycle. Given the events of last summer, we recommend that it should be reviewed and updated to check whether any of the lessons learnt can be incorporated into the protocol to improve any of the strategies.

Clause 6.1 – Customer Supply Agreements – Customers other than Sydney Water

Clause 6.1.1

Table 51. Clause 6.1.1 compliance grade

Subclause	Requirement	Compliance grade
6.1.1	<p>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).</p> <p>[Note: Under section 25 of the Act, WaterNSW is required to enter into arrangements with Sydney Water regarding the Supply of water by WaterNSW to Sydney Water. Therefore, this Licence does not regulate the Supply arrangements with Sydney Water under section 25 of the Act.]</p>	Compliant
Risk	Target for full compliance	
Not understanding the customers and the requirements for the supply of water creates a risk to correct implementation and understanding of the intended use of the water resulting in potential public health and other risks.	<p>Evidence to demonstrate that each of WaterNSW's customers to whom it supplies water has been identified and that appropriate customer supply agreements are in place and current.</p> <p>That the customer supply agreements set out the appropriate terms and conditions for the supply of water.</p>	

Summary of reasons for grade

We confirmed that WaterNSW has established and maintained Customer Supply Agreements during the audit period for the customers that clause 6.1.1 relates to. WaterNSW has undertaken a series of improvements related to preparing and reviewing its Customer Supply Agreements since 2018 and these have addressed the deficiencies that were observed in the 2018 audit report. We reviewed a sample of Major and Minor Customer Supply Agreements and confirmed that they include appropriate terms and conditions for the supply and intended use of the water for the particular customers included under each agreement.

This clause is considered Compliant.

Discussion and notes

The majority of WaterNSW customers are not contracted, however for those that are there are two types of Customer Supply Agreements: Major Customer Supply Agreements and Minor/Retail Customer Supply Agreements.

Major Customer Supply Agreements

Major Customer Supply Agreements are the individually negotiated commercial agreements that WaterNSW has with a small number of customers. Currently there are eight customers with Major Customer Supply Agreements, with the agreements varying in term from five to 99 years.

WaterNSW has a procedure for establishing Major Customer Supply Agreements. Terms and Conditions for the major customer supply agreements are based on a WaterNSW standard base template and individually negotiated and tailored accordingly.

During the audit period, WaterNSW has established a new Major Customer Supply Agreement for Wingecarribee Shire Council. The agreements for Goulburn Mulwaree Council and Shoalhaven City Council are currently under review and expected to be completed in the 2020-21 period.

Minor/Retail Customer Supply Agreements

Minor/Retail Customer Supply Agreements are used by WaterNSW for its retail customers in Fish River Water Supply Scheme, Warragamba Pipeline and Upper Canal who receive a water supply for personal use. These agreements offer standard terms and conditions with no special clauses for individual customers that require execution and return by each customer.

There are a total of 329 customers with Minor Customer Agreements. Sixteen new agreements were entered into by Fish River customers during the audit period. No Minor/Retail Customer Supply Agreements have been entered into in 2019-20 for the applicable customers outside of the Fish River Water Supply Scheme.

The Major Customer Supply Agreements and Minor/Retail Customer Supply Agreements that WaterNSW currently has in place are as follows:

- Major Customer Supply Agreements
 - Wingecarribee Shire
 - Shoalhaven City Council
 - Goulburn Mulwaree Council
 - Oberon Council
 - Lithgow City Council
 - Energy Australia
 - Essential Water
 - Sydney Water
- Minor/Retail Customer Supply Agreements
 - Greater Sydney Small Customers
 - Fish River Minor Customers (Raw Water)
 - Fish River Minor Customers (Filtered Water).

WaterNSW has undertaken a program of work to improve the quality of its major customer supply agreements, based on recommendations that were made in the 2018 Operational Audit report.

It has developed a procedure for preparing and reviewing its agreements and has also developed a standard agreement template. We confirmed that the procedure sets out clear instructions for reviewing or preparing a new agreement. Supporting documents relevant to the procedural steps are referenced in the document, as well as the roles and responsibilities for specific steps in the procedure. WaterNSW has formed a working group of subject matter experts within the business to conduct the review and this is supported by legal input to confirm legislative requirements.

WaterNSW has also developed a register to record the details of its Customer Supply Agreement that provides a simple overview of the terms and conditions for each agreement. This includes the standard of water quality, continuity of water supplied, metering requirements, fees and charges, disputes and complaints, payment difficulties, whether clause 6.3.1(f) applies, a risk assessment that identifies the activities required to be completed by WaterNSW to ensure it meets the terms and conditions for each agreement, gaps and comments for addressing in the next update of the agreement, the Account Manager, the ARK (WaterNSW document management system) reference and the expiry/review date. We confirmed that the register provides an overview of the standard terms and conditions that apply to each Customer Supply Agreement and the references to where this is included in the agreement.

WaterNSW has also added major customer agreement expiration and review dates into its RACS system to provide notification of when these activities are due, in order to ensure that the agreements remain up-to-date and compliant with the required regulations, including the conditions of the Operating Licence.

We consider that these improvements have addressed the deficiencies that were observed when the clause was last audited in 2018.

We reviewed the current Customer Supply Agreements for:

- Wingecarribee Shire Council
- Warragamba and Pipe Offtake
- Fish River Water Supply Scheme (Raw Water)
- Fish River Water Supply Scheme (Filtered Water).

We confirmed that each agreement sets out the terms and conditions for the Supply of water, including point of supply, public liability, water quality, continuity of supply, measurement of water supplied, restrictions, interruptions, charges, payments, disconnection and reconnection, complaints and disputes, and termination.

As the Wingecarribee Shire Council agreement is for a major customer, additional terms and conditions are included, for example access to assets and more details related to the contractual terms. However, we consider that the terms and conditions in each agreement reviewed appear appropriate for the intended use of the water for that particular customer.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 6.1.2

Table 52. Clause 6.1.2 compliance grade

Subclause	Requirement	Compliance grade
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 (material)
Risk	Target for full compliance	
Supplying water not in compliance with the terms and conditions of the water supply agreement could result in water being used in ways for which it is not intended, creating a risk to the end user.	Evidence, such as water quality monitoring records, customer complaint logs or other, to show that WaterNSW did in fact supply Customer Supply Agreement-compliant water to its customers.	

Summary of reasons for grade

For customers receiving drinking water from the Fish River Water Supply Scheme, the Customer Supply Agreement states that *"The Consumer acknowledges that the water quality at the point of supply complies with the Australian Drinking Water Guidelines published by the National Health and Medical Research Council."* Given the extensive list of physical, chemical and biological characteristics and guideline values included in the Australian Drinking Water Guidelines, WaterNSW is not able to demonstrate that the water it provides to the Fish River Supply Scheme Filtered customers complies with the guidelines. Sufficient evidence is not available to confirm the requirements have been met and the deficiency adversely impacts the ability of the utility to assure controlled products.

This clause is therefore assessed as Non-compliant (material)

Discussion and notes

Major customers

WaterNSW meets regularly with its Major customers to discuss supply of water and to ensure that the supply agreements are being maintained to a mutually agreeable level.

Minutes from an operational interface meeting were sighted during the audit. We confirmed that the minutes recorded included discussions related to the water quality and quantity (including reliability and continuity elements of the supply) of the water provided by WaterNSW, as well as any other issues. An action plan is included in the minutes with specific actions to be completed by WaterNSW staff and the due date. We consider that the minutes generally reflect the requirements of the customer supply agreement.

In addition, WaterNSW provides water quality reports to its major customers to show that the water supplied has been in accordance with the required quality parameters set out in the relevant supply agreement. WaterNSW's Water Monitoring Program and the Water Quality Incident Response Protocols are developed based on the relevant water quality standards for each customer. Water quality performance against relevant standards is also reported to the WaterNSW Board and Executive in monthly and quarterly reports, as described under element 10.2 of the Water Quality Management

System. Performance is also reported and discussed with customers and NSW Health on a regular basis.

Since the 2019 Operating Licence audit, WaterNSW has moved forward with developing operating protocols for the Greater Sydney Council Agreements to more thoroughly define the day-to-day monitoring, reporting and notification to be conducted for these customers.

WaterNSW provided examples of water quality reports issued during the audit period to Shoalhaven Council and Wingecarribee Shire Council. In addition, an example of the Monthly Water Quality Performance Dashboard Report provided to the Board was sighted.

We reviewed the water quality reports provided to Wingecarribee Shire Council to confirm whether the water quality had been supplied in accordance with the requirements of the relevant supply agreement. This comparison is shown in Table 53. As noted previously, WaterNSW executed the revised Raw Water Supply Agreement with Wingecarribee Shire Council during the audit period and this was the only agreement to have been updated during the period.

We note that under clause 7 of the Wingecarribee agreement:

- (a) *WaterNSW must endeavour to Supply to WSC the highest quality water from the water available in Wingecarribee Reservoir.*
- (b) *WaterNSW must undertake such monitoring necessary to be able to demonstrate compliance with Schedule 1 as it determines and at its discretion as required to meet WaterNSW's obligation under this Agreement. The detail of the necessary monitoring (and any changes) to demonstrate compliance with Schedule 1 will be as per WaterNSW's Water Monitoring Program and the Operating Protocols.*
- (c) *WaterNSW will provide copies of water quality data report for water supplied by WaterNSW to WSC at the Delivery Point in accordance with its Water Quality Management System required by the Australian Drinking Water Guidelines. WaterNSW will notify WSC of any exceedances of water quality parameters in accordance with its Water Quality Incident Response Protocol.*

Table 53. Comparison of Wingecarribee Customer Supply Agreements with water quality reports

Parameter	Customer Supply Agreement Requirement (Schedule 1)	Water Quality Report Inclusions ³
Turbidity	Yes	Yes
True colour (400 nm)	Yes	Yes
Iron	Yes	Yes
Hardness	Yes	Yes
Alkalinity	Yes	Yes
Total manganese	N/A	N/A
pH	Yes	Yes
Algae	Yes	Yes
Known toxin producing algae	Yes	No
Algal toxins (measured as microcystin-LR toxicity equivalents)	Yes	No

³ D2020/31424 Wingecarribee Goulburn Mulwarre WQ Report March 2020, D2020/28062 Shoalhaven Council Water Quality Report February 2020.

As shown in Table 53, although the Wingecarribee Shire Council Customer Supply Agreement includes known toxin producing algae and algal toxins in the water quality standards that WaterNSW will supply in accordance with, these were not included in the March 2020 example of the water quality report that was provided.

We note that the supply agreement includes a footnote for these two parameters stating that:

"Australian Drinking Water Guidelines for cyanobacteria cells (6,500 cells/mL, Microcystis aeruginosa) and Toxicity (1 .3ug/L) are for drinking water. WaterNSW must endeavour to supply best quality raw water available so that it can be treated to meet the Australian Drinking Water Guidelines."

Although these parameters were not evident in the monthly water quality report, WaterNSW does monitor and sample for these characteristics in the water supplied to Wingecarribee. Advice to Wingecarribee Shire Council regarding the microcystin concentration in Wingecarribee Reservoir was provided. As a result, we consider that the water quality supplied by WaterNSW to Wingecarribee Shire Council is in accordance with the requirements of the relevant supply agreement.

Non-conformances, either with supply agreements or water quality event management protocols are recorded in SWIRL and RACS as required. Affected customers are notified of any exceedances to the water quality parameters in accordance with the WaterNSW's Water Quality Incident Response Protocol. SWIRL is a legacy system that Sydney Water and NSW Health can access, allowing the three agencies to see any non-complying water quality result and provide the appropriate response. Going forward, WaterNSW is moving away from the SWIRL system to using RACS exclusively, with Sydney Water and NSW Health being notified via email and telephone.

The *Agreement Concerning the Supply of Water from the Fish River Water Supply* with Lithgow City Council (D2017/136611) notes that WaterNSW will perform regular testing in compliance with Australian Drinking Water Guidelines and will endeavour to manage chlorine residuals to aim for compliance at consumer point of supply. WaterNSW advised they had an operational target of >0.2 mg/L for residual chlorine and monitors at handover points within the reticulation system to maintain chlorine residual levels. The water quality incident response protocol CD2004/183[v3] has trigger values for the clear water tank (Table 4) but not at the handover points.

Minor customers

For customers receiving drinking water from the Fish River Water Supply Scheme, the Customer Supply Agreement states that *"The Consumer acknowledges that the water quality at the point of supply complies with the Australian Drinking Water Guidelines published by the National Health and Medical Research Council."* The agreement does not include any schedule that sets out the specific characteristics that WaterNSW tests for. Given the extensive list of physical, chemical and biological characteristics and guideline values included in the Australian Drinking Water Guidelines, WaterNSW is not able to demonstrate that the water it provides to the Fish River Supply Scheme Filtered customers complies with the guidelines. We have included a recommendation to address this issue below.

For the Minor customers receiving a raw water supply from WaterNSW, the supply agreements inform that the water is raw untreated water, is not intended for personal, domestic or house hold use and is not a potable supply suitable for drinking. The agreements do not include any specific water quality characteristics and target values. WaterNSW monitors complaints from these customers to ensure it is meeting its obligations.

Recommendation

Recommendation 6.1.2-1: By 31 March 2021, WaterNSW should consult with NSW Health to identify the most appropriate information in the Australian Drinking Water Guidelines that applies to the Fish River Filtered Water Supply and amend the Customer Supply Agreement to cover the obligations that have been agreed by consensus between WaterNSW and NSW Health.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 6.1.3

Table 54. Clause 6.1.3 compliance grade

Subclause	Requirement	Compliance grade
6.1.3	<p>The terms and conditions of the Customer Supply Agreements must, at a minimum, include provisions addressing:</p> <ul style="list-style-type: none"> 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. 	Compliant
Risk	Target for full compliance	
Not including the relevant terms and conditions in the Customer Supply Agreements may result in uncertainty in obligations and understanding of water use and receipt for both parties.	Checklist, records or other quality assurance processes to demonstrate inclusion of, and checking for, the clause 6.1.3 minimum provisions in the Customer Supply Agreement.	

Summary of reasons for grade

Since this clause was last audited in 2018, WaterNSW has developed procedures on how to prepare or review an agreement. It has also developed, and further refined, a standard agreement template to reduce the risk of Customer Supply Agreements failing to meet their requirements.

We confirmed for the sample of Customer Supply Agreements reviewed that the terms and conditions of each agreement include provisions for addressing the requirements of the clause, where applicable. Clause 6.1.3(f) was not applicable for all customers.

This clause is Compliant.

Discussion and notes

The standard base template for WaterNSW's Major Customer Supply Agreements has been developed to address the minimum requirements under clause 6.1.3.

The Minor/Retail Customer Supply Agreement standard template for the Fish River customers also addresses the minimum requirements under the clause.

WaterNSW had updated the new Minor/Retail Customer Supply Agreement for its other minor customers to include the provisions under the clause but it has not entered into any new agreements during the audit period.

We reviewed the Customer Supply Agreements for Wingecarribee Shire Council, the Warragamba and Pipeline Offtake customers connecting to WaterNSW's water management works, and the two Fish River agreements covering filtered water customers and raw water customers against the requirements of clause 6.1.3. Our findings are summarised in Table 55

Table 55. Clause 6.1.3 requirement review

Clause 6.1.3 or other requirement	Wingecarribee	Warragamba and Pipeline Offtake	Fish River Agreement for Supply of Filtered Water	Fish River Agreement for Supply of Raw Water
a) the standard of water quality Supplied by WaterNSW	Clause 7: Water Quality & Monitoring Clause 8: Water Quality Standards beyond the Delivery Point Schedule 1 Schedule 2	Clause 7: Water Quality	Clause 9: Water Quality	Clause 10: Water Quality
b) the continuity of the water Supplied by WaterNSW (that is, provisions relating to interruptions, disconnections and reconnections to Supply)	Clause 6: Continuity of Quantity	Clause 6: Quantity and Availability of Water	Clause 12: Restrictions Clause 13: Interruptions to Supply Clause 20 Disconnection and Reconnection	Clause 12: Restrictions Clause 13: Interruptions to Supply Clause 20 Disconnection and Reconnection
c) any metering arrangements	Clause 9: Measurement of Water Supplied	Clause 4: Fees and Charges	Clause 5: Meters and Valves	Clause 6: Meters and Valves
d) the fees and charges to be paid by the Customers for the Supply of water to them	Clause 10: Water Charges	Clause 4: Fees and Charges	Clause 15: Charges for Water Clause 16: Variation of Charges Schedule 1: Fish River Water Scheme Charges	Clause 15: Charges for Water Clause 16: Variation of Charges Schedule 1: Fish River Water Scheme Charges
e) dispute resolution and Complaints handling procedures	Clause 13: Dispute Resolution	Clause 9: Dispute Resolution	Clause 22: Complaints or Disputes	Clause 22: Complaints or Disputes

Clause 6.1.3 or other requirement	Wingecarribee	Warragamba and Pipeline Offtake	Fish River Agreement for Supply of Filtered Water	Fish River Agreement for Supply of Raw Water
(f) in the case of a Customer Supply Agreement with a Customer referred to in clause 1.2.1(e) ⁴ , 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.	N/A as customer is a utility	Clause 2: Supply of Water	Clause 8: Use of Water Clause 10: Public Liability Clause 20: Disconnection and Reconnection	Clause 8: Use of Water Clause 10: Public Liability Clause 20: Disconnection and Reconnection

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

⁴ Clause 1.2.1: 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:
(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;

Clause 6.3 – Water metering and monitoring

Clause 6.3.1

Table 56. Clause 6.3.1 compliance grade

Subclause	Requirement	Compliance grade
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.	Compliant
Risk	Target for full compliance	
This requirement represents a high operational risk. Accurate determinations of water extraction and supply is needed for effective account management, billing and reporting, e.g. for resource management.	Evidence that WaterNSW has determined the volume of water extracted by or supplied to customers at least annually and with respect to accurate account management, billing and reporting.	

Summary of reasons for grade

Based on the evidence provided and viewed at audit, we consider that WaterNSW has met the obligations of clause 6.3.1 to determine the volume of water extracted by or supplied to customers at least annually, and with respect to accurate account management, billing and reporting. This included a review of documented processes and procedures for recording and estimating volumes, demonstrations of the systems WaterNSW uses to record water take data and to bill customers, a comparison of recorded usage versus billed volumes to confirm WaterNSW's definition of accuracy to meet the requirements of the clause and a review of metering and billing complaints.

We therefore have assigned an audit grade of Compliant.

Discussion and notes

With regard to the requirements of the clause, WaterNSW defines its responsibilities for the accuracy of the volume of water extracted by or supplied to customers as being the accuracy of the water take entered into the accounting system versus what was actually billed. Since 1 April 2018, WaterNSW no longer has the compliance function with regards to water take and metering accuracy. Natural Resources Access Regulator is responsible for determining the accuracy of the water take versus what was actually extracted/used. WaterNSW's obligations extend only to reporting observed instances of non-compliant behaviour/infrastructure to the Natural Resources Access Regulator and it is not its role to monitor the activities of the regulator.

We note that the Monitoring and Auditing section of the Natural Resources Access Regulator's website states that it "...is responsible for ensuring compliance with NSW water management laws to enable secure and sustainable sharing of water between users and the environment." We also note that the Department of Planning, Industry and Environment's 'Non-urban water metering in NSW – what water users need to know, August 2020' fact sheet states that "NRAR is responsible for compliance with and enforcement of the new water metering rules." Meter accuracy requirements are set out in this fact sheet.

As a result, WaterNSW's Field Services are not required to perform any meter accuracy functions at present.

WaterNSW's Determining Water Take Procedure describes the different types of water take and the accepted forms of measuring water take. It also prescribes the frequency of site visits and meter reads and who can undertake the various types of water take reporting such as customers and WaterNSW. There have been no significant changes to the procedure during the audit year.

The approach to determining water take varies across the customer base. Some customers have meters in place but for customers taking water or supplied from unregulated or groundwater sources, supply or take is not measured and has to be determined. Alternate measures that WaterNSW uses to determine water take for customers who do not have meters include using kilowatt hours, hour meters with a calibration factor assigned to the pump and determined flow rate and annual usage survey provided by approval holders. WaterNSW has a Conducting Assessments of Water Take procedure that outlines the assessment methods used to estimate water take when a water flow meter is either not installed, not working or not working properly.

WaterNSW is advised by the Department of Planning, Industry and Environment – Water of the groundwater water sources that require meter reads (which supports their resource assessments). These water sources have a high percentage of coverage with water flow meters.

As unregulated water sources do not have a high percentage of meters installed at present, the highest risk areas are visited by WaterNSW's Customer Field Officers. For the groundwater and unregulated sources where meters are not installed, WaterNSW uses one-part Tariff or Annual Usage Surveys to determine water where customers provide details of their annual water take. The data is captured in the WAS water ordering system.

WaterNSW outlined at audit and in the evidence provided various checks and balances in place to provide assurance over the estimates of water extracted and supplied. These include:

- visits to customers to verify readings and assessed take that have been provided by customers. If customers do not provide photographic evidence of readings or have usage higher than a threshold, WaterNSW conduct visits to verify the water take reported is accurate.
- an overall resource assessment and forecast that is prepared monthly. This resource assessment is based on storage levels, customer account balances (determined through the take procedure) and accounts for inflows and budgeted losses. Reconciliation of the resource assessment provided a check on the determined water take. Unusual loss figures may indicate problems with the determined take.
- daily water balances on flows between gauging stations.

In the future, the NSW Non-Urban Water Metering Policy is expected to address all water sources by December 2023 and bring all approval holders into compliance with

the thresholds set under this policy. This is expected to result in the region of an additional 12,000 meters being installed, which will impact on the meter read data that WaterNSW will have available to use.

WaterNSW completes a series of checks to ensure that its billing information is accurate and reconciles with the meter data that has been provided or the alternate water take methods utilised. Meter read data used in billing is checked and signed-off prior to being run through the CIMS billing system, which has the rates and charges programmed into it. The data is checked again prior to invoice printing before a final check of a sample of printed invoices prior to issue to the customers.

After the invoices have been issued, WaterNSW undertakes a reconciliation to check the accuracy of the billing data and the invoiced volumes. The usage data is reconciled from the WAS water ordering system to the CIMS billing system to compare the metered/calculated volume against the invoiced usage. This process is undertaken to check the +/-5% definition of accuracy defined in the Determining Water Take Procedure, that WaterNSW uses to meet the definition of 'accurate' included in the Operating Licence requirements for clause 6.3.1.

WaterNSW demonstrated the take assessment processes in WAS and the billing processes in CIMS and we were able to view examples of recorded extracted volumes, method of water take determination, billing adjustments and customer invoices.

We reviewed WaterNSW's usage/billing reconciliation calculation for the year. Table 57 provides a breakdown of the number of readings, metered or calculated usage, billed usage and variances for regulated, unregulated and groundwater customer extractions.

Table 57 Breakdown of readings and usage by method

Period	Metered usage (ML)	Billed usage (ML)	Variance (%)	Variance (ML)	No. bills issued
1 Regulated 19-20 Q1	253,068	253,564	-0.2%	-496	10,565
2 Regulated 19-20 Q2	512,160	512,147	0.0%	13	10,591
3 Regulated 19-20 Q3	412,189	412,249	0.0%	-60	10,815
4 Regulated 19-20 Q4	235,835	235,820	0.0%	15	13,294
5 Unregulated 18-19	788,850	778,770	1.3%	10,080	15,341
6 Groundwater 18-19	1,262,450	1,245,826	1.3%	16,624	10,622
	3,464,552	3,438,376	0.8%	26,176	71,228

We confirmed with WaterNSW that the unregulated and groundwater billings are for the previous 2018-19 financial year. These customers are billed annually in arrears in September for the financial year and the latest 2019-20 data is not available to be reported.

We observed that for the 2019-20 period, a total of 3.464 gegalitres of usage was determined, of which 3.438 gegalitres was invoiced. This shows a variance of 0.8% between the billed and recorded usage, indicating that 99.2% of the usage is billed. This is within the +/-5% target that WaterNSW has set for the accuracy.

Of the total 71,228 bills that were issued, 14,981 (21%) were billed on a minimum charge, with 20,993 (29%) billed on a one-part tariff. The remaining 71% of customer

invoices were billed using Part 2 Tariff pricing where the water take was determined by a combination of self reads, WaterNSW staff reads (manual or telemetry) or an alternate assessment.

After each billing cycle, customers can contact WaterNSW to dispute a bill if they consider that they have not been correctly invoiced for the water they have taken. Where WaterNSW investigations and agrees that there has been an error, the bills are adjusted and water is reapportioned in WAS. During 2019-20, 11 customer complaints were received relating to determination of usage. We reviewed the complaint details and confirmed that they had been correctly recorded as complaints and correctly categorised as metering or billing issues. We confirmed that the customers had been appropriately responded to and the complaint resolved when all actions had been completed.

Although WaterNSW is not required to perform any meter accuracy functions at present, customers are required to self-report within 24 hours when their meter stops working. WaterNSW is required to inform the customer if they identify that the customer meter is not working. WaterNSW has a process for customers to take water while metering equipment is not operating that outlines the steps that need to be taken, including determining an alternate method for recording the customer's take, the information that the customer needs to provide once the meter has been repaired or replaced and the recording of the substitute water take volumes in the Water Accounting System. These are captured in WaterNSW's request system and we confirmed that a total of 255 requests to repair or replace meters were received from customers in the audit period.

Based on the evidence provided and viewed at audit, we consider that WaterNSW has met the obligations of clause 6.3.1 to determine the volume of water extracted by or supplied to customers at least annually, and with respect to accurate account management, billing and reporting.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

There are no opportunities for improvement for this clause.

Clause 6.4 – Advance notification of changes to flow release patterns

Clause 6.4.1

Table 58. Clause 6.4.1 compliance grade

Subclause	Requirement	Compliance grade
6.4.1	Water NSW must maintain an effective system to provide advance notification of any significant changes to flow release patterns from its Water Management Works to Customers and other stakeholders that have registered to be notified of such changes.	Compliant
Risk	Target for full compliance	
There is a risk to life and property if WaterNSW fails to maintain and effective system of notification of changes to flow release patterns.	All changes to flow release patterns have been notified. Notifications without a change in pattern are avoided. Registration is easy and the system operates effectively.	

Summary of reasons for grade

WaterNSW uses the Emergency Notification Warning System (EWN) to notify customers and stakeholder of changes to flow release patterns. Audit sampling conducted for flow releases from Glenbawn, Blowering and Burrinjuck Dam demonstrated notification had been made as required (within the accuracy limits of flow measurement). Sufficient evidence has been provided to award a grade of Compliant.

Discussion and notes

WaterNSW uses the EWM Notification System (<https://www.waternsw.com.au/supply/ewn>) to meet the requirements of this clause. The EWN Notification System provides automated notifications of flow releases from the Water Management Works (defined in clause 3.1) through:

- an SMS message to a mobile phone
- a landline test to voice message
- an email.

EWN allows the same clear concise message to be sent to all subscribers that have registered for the service. WaterNSW has has EWN instructions for their dams at a regional level. We were provided instructions for Murrumbidgee River (Burrinjuck Dam and Blowering Dam, CD2018/6) and requested, and were provided with the instruction for the Hunter Region (Lostock, Glennies and Glenbawn Dam, D2018/49422).

Both instructions documented notification triggers for the following flow release patterns:

- High regulated releases
- Flood releases
- Dam safety - amber
- Dam safety – red.

The Hunter triggers provide clarity that notifications are not required for decreases in flow. This clarity is not provided for Burrinjuck Dam.

There are 3 enrolment methods for notifications:

- online using an email enrolment on the EWN website (www.ewn.com.au)
- online using a no-email enrolment on the EWN website
- contacting WaterNSW customer help desk to be enrolled.

We enrolled online and received notification changes. The wording of the received notifications matched that in the instruction for the notifications sampled (except for the Brogo notification in 27/7/2020 which contained a typographical error). Specific examples are noted in Appendix A Evidence sighted.

An example of the notification wording in the EWN instructions is:

Email: This is a Glenbawn Dam flow increase notification.

Releases are planned to increase from XX XXX Megaliters per day to YY YYY Megaliters per day by 00:00 AM/PM on weekday DD month YYYY.

SMS: Glenbawn Dam flow increase. Releases are planned to increase from XX XXX ML/day to YY YYY ML/day by 00:00 AM/PM on DD/MM/YY.

Voice to Text: This is an operational alert. Water New South Wales Glen born dam is increasing flows. Releases are planned to increase from XX XXX Megalitres per day to YY YYY Megalitres per day by 00:00 AM/PM weekday date month year. For more information go to w w w dot water N S W dot Com dot A U. This is an operational alert. Water New South Wales Glen born dam is increasing flows. Releases are planned to increase from XX XXX Megalitres per day to YY YYY Megalitres per day by 00:00 AM/PM weekday date month year. For more information go to w w w dot water N S W dot Com dot A U.

Maintain an effective system

WaterNSW stated that effectiveness is monitored via feedback via website and call centre, and EWN registrations. We also consider "*maintaining an effective system*" to include that the instructions had been followed and the currency of the instructions.

We tested if there were events where the flows were changed and notifications were not released for Burrinjuck and Blowering both for the release and notifications as advised by WaterNSW and the notification we received for the period 1/7/2020 to 31/8/2020. The notifications were found to be consistent with the flow releases.

Both instructions contained a monitoring, evaluation and review section, which included audits on usage and an evaluation and review was recommended every 2 years. Evidence was not available that these reviews had been undertaken. As the instructions only recommend rather than require review every 2 years, and the instructions do not contain information that changes frequently, we consider this an opportunity for improvement.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

OFI 6.4.1: The EWN instructions have not been reviewed as recommended in the instructions. An improvement opportunity is to undertake these reviews. Where notifications are not required for a decrease in flow, the instructions could be updated to provide clarity that a notification was not required.

Clause 6.6 – Customer Advisory Group Charter

Clause 6.6.1

Table 59. Clause 6.6.1 compliance grade

Subclause	Requirement	Compliance grade
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. Note: Clause 6.5.4</p> <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"> • stock and domestic water users; • Regulated River water users; • Unregulated River water users; • groundwater users; • environmental water users; • industrial and commercial water users; • Local Water Utilities; • Major Utilities; • small water users based on their Water Licence volume; • medium water users based on their Water Licence volume; • large water users based on their Water Licence volume ; and • Aboriginal cultural heritage water users. 	Compliant
Risk	<p>Not establishing and maintaining a Customer advisory group charter would mean WaterNSW not setting out the requirements for membership to allow the Customer Advisory Groups to be effective.</p> <p>Not involving customers from a broad cross-section of customer categories may mean that WaterNSW could miss customer insights and requirements for delivery of its products and services.</p>	<p>Target for full compliance</p> <p>Evidence to demonstrate that WaterNSW has established and maintains a Customer advisory group charter.</p> <p>Evidence that WaterNSW has used its best endeavours to ensure that membership is representative of the Customers in that area.</p>

Summary of reasons for grade

Based on the evidence that has been provided, we consider that WaterNSW has established and maintains a Customer Advisory Group Charter in accordance with the requirements of clause 6.6.1. We consider that WaterNSW has used its best endeavours to ensure that membership is representative of the Customers in each area.

Although WaterNSW endeavours to cover as many categories as it can for each of the ten CAGs, it has identified that the Aboriginal Cultural Heritage category can be difficult to fill. Currently there is only one Aboriginal Cultural Heritage representative, a member of the Murrumbidgee CAG. We also note that although the categories under this clause include small, medium and large water users based on their Water Licence volume as separate categories, WaterNSW reports group members on its website with an overall category of representation of 'Volumetric'. We have included some opportunities for improvement related to these observations.

The clause is Compliant.

Discussion and notes

CAGs are the primary forum for WaterNSW to regularly consult, on an area basis, with a broad cross-section of customers on issues relevant to the performance and delivery of services to customers. WaterNSW has established Customer Advisory Groups for 10 areas, which are based on an aggregation of the catchments throughout NSW.

WaterNSW has a single Customer Advisory Groups Charter that is applicable to all groups.

The Charter sets out the terms of reference and operation of the CAG. The Charter includes appropriate requirements for such a group including appointment and selection criteria, term, roles and responsibilities as well as operating procedures, including meeting frequencies.

The Charter is made publicly available for download on the WaterNSW website. It is also provided to all new members upon commencement to the CAG and to all members at the commencement of each new term.

The Charter, which has been in place since 2017, is reviewed and amended periodically as well as at the commencement of each new term. WaterNSW and CAG members may propose amendments, which to be effective, require both parties' approval. If an amendment is proposed, it will be tabled at the CAG meetings. Members are free to offer changes to Charter at CAG meetings. However, WaterNSW informed that there have been no changes proposed or made to the Charter in the audit period.

We confirmed that WaterNSW maintains and resources the CAGs through several modes including providing a separate section on its website for each of the ten CAGs, taking of and recording minutes, keeping of a log of nominations and acceptances and providing pro-formas to support maintenance of the CAGs.

A schedule of CAG meetings is displayed on the website, together with the minutes from previous meetings. We reviewed a sample of minutes for five of the ten CAGs for meetings occurring during the audit period. The minutes are available to be viewed on

WaterNSW’s website and confirmed that under the broad agenda topics of Welcome and Introductions, Presentations/Consultation, Assets, Business Papers and General Business, specific issues relevant to the area represented by the CAG were addressed and discussed. This include topics such as Pricing Determination engagement, project updates, maintenance updates, annual capital plan updates and water delivery.

We also checked five out of the ten CAGs and generally found them to have appropriate representation in terms of numbers (not more than the required 15 members) and representation/experience/skillset. Some members of the CAGs go across the various categories, meaning that one individual may be in more than one category. As a result, the reported number of members in each group is typically higher than the number of individuals in the group.

Our observations are presented in Table 60.

Table 60. Review of Customer Advisory Group membership representation

Category	Lachlan	Murrumbidgee	Hunter	Murray-Lower Darling	Greater Sydney
# Members	15	13	9	14	8
Stock and domestic users	10	5	4	9	1
Regulated river water users	12	9	4	12	1
Unregulated river water users	8	2	6	2	2
Groundwater users	9	4	5	3	1
Environmental water users	2	3	2	2	1
Industrial and commercial customers	8	0	3	2	1
Local Water Utilities	2	4	1	1	5
Major Utilities	0	1	2	0	0
Volumetric categories of users (small/medium/large)	7	1	1	6	1
Indigenous Australian water users.	0	1	0	0	0

Although WaterNSW endeavours to cover as many categories as can for each of the ten CAGs, it has identified that the Aboriginal Cultural Heritage category can be difficult to fill. Currently there is only one Aboriginal Cultural Heritage representative, a member of the Murrumbidgee CAG. We also note that although the categories under this clause include small, medium and large water users based on their Water Licence volume as separate categories, WaterNSW reports group members on its website with an overall category of representation of ‘Volumetric’.

Based on the evidence that has been provided, we consider that WaterNSW has established and maintains a Customer Advisory Group Charter in accordance with the requirements of clause 6.6.1. We consider that WaterNSW has used its best endeavours to ensure that membership is representative of the Customers in each area.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

OFI 6.6.1-1: We consider that WaterNSW should revise the CAG members listed on its website as representing the category of 'Volumetric' to show whether they are small, medium or large water users, in accordance with the categories included in clause 6.6.1.

OFI 6.6.1-2: As WaterNSW has identified it is difficult to find representation for the Aboriginal Cultural Heritage category in its CAGs, it should look to develop a plan as to how this might be better addressed.

Clause 6.6.2

Table 61. Clause 6.6.2 compliance grade

Subclause	Requirement	Compliance grade
6.6.2	<p>The Customer Advisory Group Charter must address all of the following issues:</p> <ul style="list-style-type: none"> 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. 	Non-compliant (non-material)
Risk	Target for full compliance	
There is a risk that by not addressing all of the issues outlined in clause 6.6.2, the Customer Advisory Group will not function as intended and provide an effective means of consultation for WaterNSW	Evidence to demonstrate that WaterNSW's Customer Advisory Group Charter addresses all of the requirements set out in the clause	

Summary of reasons for grade

Based on our review of the document, WaterNSW's Customer Advisory Group Charter is not compliant against clause 6.6.2(e) as it does not provide any description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred. WaterNSW provided emails to members calling for agenda items, along with customer responses to this type of request. We confirmed that although it is not

compliant with the clause, WaterNSW has other means of achieving the intended outcome of the clause.

We also noted that with respect to clause 6.6.2(h), WaterNSW's Customer Advisory Group Charter does not specify the procedures for proposing and progressing an amendment. Therefore, we recommend that the Customer Advisory Group Charter is amended to meet address these requirements. In order to address this deficiency, WaterNSW has drafted amendments to the Charter to include a contact email address for submission of proposed Charter changes, along with the process description of accepting proposals. The amendments, which have been completed after the end of the audit period on 31 August 2020, will now be taken to all ten CAG meetings for agreement.

WaterNSW's Customer Advisory Group Charter has addressed the remaining issues required under the clause.

This clause is considered Non-compliant (non-material).

Discussion and notes

We reviewed WaterNSW's Customer Advisory Group Charter against the requirements of clause 6.6.2. Our findings are presented in Table 62.

Table 62. Review of WaterNSW's Customer Advisory Group Charter against the clause 6.6.2 requirements

Clause 6.6.2	Requirement	How the requirement is addressed in WaterNSW's Customer Advisory Group Charter	Compliance grading
a)	the role of the Customer Advisory Group	"Customer Advisory Groups provide a forum for WaterNSW to regularly consult, on an area basis, with a broad cross-section of our customers on issues relevant to our performance and delivery of services to customers."	Compliant
b)	how members and the chair of the Customer Advisory Group will be appointed	"WaterNSW calls for nominations for, determines and appoints membership of Customer Advisory Groups." "A chairperson for each Customer Advisory Group will be elected annually by a vote of members."	Compliant
c)	the term for which members are appointed	Term - "Members will be appointed for a three-year term (concluding 30 June 2022) following which WaterNSW will set future terms to align with pricing consultation cycles and Operating Licence terms. Members may serve an unlimited number of terms." Vacancies during a term - "To fill a vacancy, WaterNSW will seek nominations from the existing members' nominating organisation / customer category. If the organisation is unable or unwilling to nominate a replacement representative, WaterNSW may advertise publicly for new nominations."	Compliant

Clause 6.6.2	Requirement	How the requirement is addressed in WaterNSW's Customer Advisory Group Charter	Compliance grading
d)	information on how the Customer Advisory Group will operate	"WaterNSW convenes both area-based Customer Advisory Group meetings and Customer Advisory Groups Representative meetings. Both forums are to meet not less than twice a year. WaterNSW determines meeting schedules and agendas based upon key issues relating to WaterNSW's planning and operations and advice received in the interest of customers. Members will be provided with adequate information, within WaterNSW possession or under its control, to enable them to discharge the tasks assigned, other than information or documents that are confidential (including documents that are subject to client legal privilege). Issues monitoring and follow up is affected via standard meeting minuting and action procedures."	Compliant
e)	a description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred	Based on our review of the document, WaterNSW's Customer Advisory Group Charter does not provide any description of the type of matters that will be referred to the Customer Advisory Group and how those matters will be referred. However, WaterNSW's process is to request input from every Customer Advisory Group member prior to each meeting by way of an email seeking Agenda items four weeks prior to every meeting. WaterNSW has a templated process that has been followed for all 30 meetings every year for a number of years. WaterNSW provided emails to members calling for agenda items, along with customer responses to this type of request. We confirmed that although it is not compliant with the clause, WaterNSW has other means of achieving the intended outcome of the clause.	Non-compliant (non-material)
f)	procedures for communicating the outcomes of the Customer Advisory Groups' work to the public	"WaterNSW will provide a summary after each round of Customer Advisory Groups, including applicable valley-specific issues, which will be made available on the WaterNSW website."	Compliant
g)	procedures for monitoring issues raised at meetings of the Customer Advisory Groups and ensuring appropriate follow-up of those issues	"Issues monitoring and follow up is affected via standard meeting minuting and action procedures."	Compliant
h)	procedures for amending the charter	Although the Charter states, "Within the term of a Customer Advisory Group, WaterNSW and Customer Advisory Groups may propose amendments to the Charter, which to be effective, require the approval of both parties," it does not specify the actual procedures for	Non-complaint (non-material)

Clause	Requirement	How the requirement is addressed in WaterNSW's Customer Advisory Group Charter	Compliance grading
6.6.2		proposing and progressing an amendment. In order to address this deficiency, WaterNSW has drafted amendments to the Charter to include a contact email address for submission of proposed Charter changes, along with the process description of accepting proposals. This will now be taken to all ten CAG meetings for agreement.	
i)	funding and resourcing of the Customer Advisory Groups by WaterNSW	"Customer Advisory Groups are funded and resourced by WaterNSW."	Compliant

Recommendation

Recommendation 6.6.2-1: By 30 June 2021, undertake a review of WaterNSW's Customer Advisory Group Charter to ensure that matters to be referred to the Customer Advisory Group are documented.

Recommendation 6.6.2-2: By 31 March 2021, undertake a review of WaterNSW's Customer Advisory Group Charter to ensure that procedures for proposing and progressing an amendment are documented.

Opportunities for improvement

There are no opportunities for improvement for this clause.

Clause 6.7- Customer Service Charter

Clause 6.7.1

Table 63. Clause 6.7.1 compliance grade

Subclause	Requirement	Compliance grade
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.	Compliant
Risk		Target for full compliance
Not establishing and maintaining a Customer advisory group charter would mean not setting out the mutual expectations for WaterNSW and its customers.		Evidence to demonstrate that WaterNSW has established and maintains a Customer Service Charter.

Summary of reasons for grade

Based on the evidence that has been provided, we consider that WaterNSW has established and maintains a Customer Service Charter in accordance with the requirements of clause 6.7.1. WaterNSW has a single Customer Service Charter for all customers, and this is readily available to be viewed on WaterNSW's website.

We confirmed that there have not been any significant changes to the Charter during the audit period. We confirmed that the Customer Service Charter had not been included as a discussion topic by the Customer Advisory Groups during the audit period.

This grade is assessed as Compliant.

Discussion and notes

WaterNSW has one Customer Service Charter that outlines service standards and the expectations of its customers.

The Customer Service Charter provides information on:

- Customer contact
- Licencing regulation and dealings
- Water Delivery, Ordering and reporting
- Information and communication
- Trouble paying your bill
- Customer feedback and complaints.

The Customer Service Charter is reviewed in consultation with the Customer Advisory Groups as required. However, WaterNSW informed us that no significant changes have been made during the audit period. The last significant changes were made in the

previous audit period with the addition of hardship clauses and a customer service and complaints section. These were approved by the Executive Manager and reviewed by the Customer Advisory Groups. We confirmed that these sections are included in the current version of the Charter. We also reviewed a sample of Customer Advisory Groups meeting minutes from within the audit period and confirmed that the Customer Service Charter was not discussed and that there were no relevant actions included in the meeting minutes Action Plans.

The Customer Service Charter is made publicly available for download on the WaterNSW website and this was confirmed at the audit.

Based on the evidence that has been provided, we consider that WaterNSW has established and maintains a Customer Service Charter in accordance with the requirements of clause 6.7.1.

Recommendation

There are no recommendations in respect of this clause.

Opportunities for improvement

There are no opportunities for improvement for this clause.

Clause 6.7.2

Table 64. Clause 6.7.2 compliance grade

Subclause	Requirement	Compliance grade
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 Water Management Act 2000 (NSW), the Water Act 1912 (NSW) and any other applicable law.	Compliant
Risk	Target for full compliance	
There is a high risk that by not setting out the mutual responsibilities for WaterNSW and its customers, the legislative responsibilities may not be clearly communicated.	Evidence that WaterNSW's Customer Service Charter(s) set out the mutual responsibilities of WaterNSW and its Customers consistently required under the clause.	

Summary of reasons for grade

Based on our review of WaterNSW's Customer Service Charter, we consider that it sets out the mutual responsibilities of WaterNSW and its Customers consistently with its Operating Licence, the *Water NSW Act 2014*, the *Water Management Act 2000 (NSW)*, the *Water Act 1912 (NSW)* and any other applicable law, in accordance with the requirements of clause 6.7.2.

This clause is Compliant.

Discussion and notes

As noted under clause 6.7.1, WaterNSW has one Customer Service Charter that outlines service standards and the expectations of its customers.

At the top of the Charter, it states:

"We strive to ensure that our people and our services are accessible to our customers. To achieve this, we will ensure that we have the appropriate resources to meet our customers' needs. To achieve this, we will operate in accordance with our legislative requirements, including our Operating Licence, Water Sharing Plans, Water Management Act 2000, Water Act 1912 and Water NSW Act 2014."

Therefore, there is a direct reference to the legislation included in the clause.

The Customer Service Charter provides information on:

- Customer contact
- Licencing regulation and dealings
- Water Delivery, Ordering and reporting
- Information and communication
- Trouble paying your bill
- Customer feedback and complaints.

Within each of these sections WaterNSW explicitly sets out what WaterNSW is striving to achieve under each area and provides clear details of how WaterNSW will achieve the outcome and what customers need to do to assist. This includes the mutual responsibilities and expectations under each of the sections.

What WaterNSW has set out about what it is striving to achieve, how it will achieve the outcome, what its customers can expect and what customers need to do to assist is summarised in Table 52.

Table 65. Customer Service Charter responsibilities

Section	WaterNSW objective & responsibilities	What WaterNSW customers can expect	Customer responsibilities
Customer contact	-	<p>Customers can expect WaterNSW staff to:</p> <ul style="list-style-type: none"> • <i>be courteous, helpful and communicate clearly</i> • <i>behave responsibly in accordance with our Code of Conduct</i> • <i>listen and respond to your requests, including access to your property, in an appropriate way</i> • <i>make office hours and contact details accessible.</i> 	<p>WaterNSW needs customers to:</p> <ul style="list-style-type: none"> • <i>provide reasonable access to supply works on your property, in keeping with the NSW workplace health and safety standards</i> • <i>treat our people in a courteous and non-discriminatory manner</i> • <i>provide feedback on our service and contact us when you want more information</i> • <i>participate in surveys to provide feedback to improve our service to customers.</i>
Licencing regulation and dealings	<p><i>To provide information and approvals to our customers timely and efficiently, providing advice and recommendations in an appropriate manner.</i></p> <p><i>To achieve this, we will operate within our legislative requirements, including operating under the powers provided in the Water Management Act 2000.</i></p>	<p>Customers can expect:</p> <ul style="list-style-type: none"> • <i>Knowledgeable and accessible information through our Customer Service Centre or via our website for water licencing and works approvals</i> • <i>Information and guidance on the appropriate approval path for your particular needs</i> • <i>Timely approvals for compliant applications.</i> 	<p><i>... to assist the application process, including:</i></p> <ul style="list-style-type: none"> • <i>accurate applications for licences and works approvals</i> • <i>timely responses where additional information is requested</i> • <i>timely provision of required documents and legal information where required</i> • <i>ensuring applications are completed in full with accurate information before submitting.</i>

Section	WaterNSW objective & responsibilities	What WaterNSW customers can expect	Customer responsibilities
Water Delivery, Ordering and reporting	<i>To deliver water to our customers on time, through the most efficient and effective means possible, in an environmentally responsible manner</i>	<p>Customers can expect:</p> <ul style="list-style-type: none"> • <i>accessible water ordering system through either the Customer Service Centre or the internet Water Accounting System (iWAS)</i> • <i>timely water delivery within the limits of system response times</i> • <i>that we will inform you of any water delivery issues</i> • <i>assets that are maintained and fit for service</i> • <i>proactive management for optimal water availability</i> • <i>timely delivery of updated information by Valley on our website</i> • <i>standard water reports made available via our website</i> • <i>all water releases consider likely environmental impacts.</i> 	<p><i>...to adhere to the conditions of their water licence, including:</i></p> <ul style="list-style-type: none"> • <i>timely water ordering, in accordance with the specified conditions</i> • <i>maintaining a positive water account balance.</i>

Section	WaterNSW objective & responsibilities	What WaterNSW customers can expect	Customer responsibilities
Information and communication	<p><i>To provide clear, concise and accessible information at the appropriate time in an appropriate manner.</i></p> <p><i>To achieve this, we will:</i></p> <ul style="list-style-type: none"> • <i>regularly meet with Customer Advisory Groups across NSW</i> • <i>consult with affected communities on major projects</i> • <i>provide a one-stop customer information service</i> • <i>provide easily accessed information on our internet site and iWAS including:</i> <ul style="list-style-type: none"> – <i>dam levels</i> – <i>river heights</i> – <i>general water related information</i> • <i>survey customers regularly to measure their satisfaction with our services.</i> 	<p>Customers can expect:</p> <ul style="list-style-type: none"> • <i>accurate invoices and water information and prompt resolution of concerns</i> • <i>options for how, where and when you pay us and a willingness to negotiate payment terms if you are experiencing difficulties</i> • <i>confidential use of your personal information in accordance with the law.</i> 	<p>WaterNSW needs customers to:</p> <ul style="list-style-type: none"> • <i>pay your invoice on time</i> • <i>contact us if you have difficulty paying your invoice.</i>
Trouble paying your bill	<p><i>WaterNSW is committed to helping customers who are facing financial hardship to keep their water flowing.</i></p>		
Customer feedback and complaints	<p><i>We are committed to providing our customers with excellent service.</i></p>	<ul style="list-style-type: none"> • <i>Our complaints handling policy provides a framework for our staff to address your complaint to ensure we respond to your needs.</i> • <i>If we cannot resolve your concern on the spot, we will acknowledge it within two business days and try to resolve it in a timely manner.</i> 	<p><i>If you are dissatisfied with any aspect of our services, we would like to hear from you as this feedback helps us monitor and improve customer service levels. Similarly, if you have experienced exceptional service, please tell us.</i></p>

Based on our review of WaterNSW's Customer Service Charter, we consider that it sets out the mutual responsibilities of WaterNSW and its Customers consistently with its Operating Licence, the *Water NSW Act 2014*, the *Water Management Act 2000 (NSW)*, the *Water Act 1912 (NSW)* and other applicable law, in accordance with the requirements of clause 6.7.2.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

There are no opportunities for improvement for this clause.

Clause 6.8 – Code of practice on payment difficulties

Clause 6.8.2

Table 66. Clause 6.8.2 compliance grade

Subclause	Requirement	Compliance grade
6.8.2	<p>The Code of Practice on Payment Difficulties must:</p> <ul style="list-style-type: none"> 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 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 (non-material)

Risk	Target for full compliance
Without informing customers and any other persons, they may not understand the circumstances for service restriction or water access licence suspension and their payment options in times of hardship.	<p>A WaterNSW customer-specific Code of Practice, which was current for the audit period and which includes the requirements of clause 6.8.2.</p> <p>Specifically defined criteria for financial hardship.</p> <p>Procedures or other for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer (including in respect of CSR Water and Supply water).</p> <p>Procedures or other for identifying the circumstances under which WaterNSW 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.</p> <p>Procedures for self-identification, identification by community welfare organisations and identification by WaterNSW of Customers experiencing financial hardship.</p>

Summary of reasons for grade

Although the 'If you don't pay your bill' section of the Code informs customers of the circumstances under which WaterNSW may suspend water access licences when a Customer has not paid its Bill (see 6.8.2(c)), it does not provide any circumstances under which it may restrict the provision of services to customers who do not require a water access licence. e.g. minor customers on a piped supply (required under clause 6.8.2(b)).

We reviewed the two Fish River Water Scheme Customer Supply Agreements for Raw Water and for Filtered Water and observed under clause 20(a) of each agreement, *"WaterNSW may (without prejudice to any accrued right) disconnect the supply if the*

Consumer commits a breach of any of these clauses." The listed grounds for disconnection under clause 20(b), include clause 20(b)(vi) *"non-payment of invoices."* Therefore, WaterNSW does have circumstances under which it may restrict the provision of services to a customer which are not included in the Code of Practice on Payment Difficulties.

As a result, WaterNSW does not comply with the requirements under clause 6.8.2(b) of the licence. We have included a recommendation to address this non-compliance.

This clause is Non-compliant (non-material).

Discussion and notes

WaterNSW has a Debt Management Code of Practice which explains the process it undertakes if customers do not pay their bill. It also outlines how WaterNSW can help if customers are having difficulties paying. WaterNSW defines hardship as *When customers would like to pay their water charges, but really cannot manage to do so.* This definition is included in the Code.

The Code is available to be accessed from the 'Your Account and Paying Bills' section of WaterNSW website.

The Code defines:

- how WaterNSW accepts that a customer is facing affordability difficulties or as per the Operating licence, financial hardship
- how affordability difficulties are outlined on Customer bills
- the procedure for restricting the provision of services or suspension of a water licence
- the process for self-identification, identification by community welfare organisations or by WaterNSW.

WaterNSW's Debt Management Code of Practice and Customer Supply Agreements are reviewed each year as part of WaterNSW's operating licence to ensure that they are relevant and up to date.

We reviewed each of the requirements of clause 6.8.2 against the information included in WaterNSW's Debt Management Code of Practice. Our observations are presented in Table 67.

Table 67. Review of requirements of clause 6.8.2 in WaterNSW's Debt Management Code of Practice

Clause 6.8.2	Requirement	How the requirement is addressed in WaterNSW's Debt Management Code of Practice	Compliance grading
(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	The 'Assistance with paying your water account' section of the Code informs customers of the following methods of help: <ul style="list-style-type: none"> • A payment extension of 3 months or less. • A payment arrangement to pay the account in regular instalments over a period of 3 months • In some circumstances WaterNSW will allow a payment plan of longer than 3 months. This will require you to provide some proof of hardship. You should contact WaterNSW for details of what is required. 	Compliant
(b)	Include procedures for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer (including in respect of CSR Water and Supply water)	Although the 'If you don't pay your bill' section of the Code informs customers of the circumstances under which WaterNSW may suspend water access licences when a Customer has not paid its Bill (see 6.8.2(c)), it does not provide any circumstances under which it may restrict the provision of services to a customer to customers who do not require a water access licence. e.g. minor customers on a piped supply. We reviewed the two Fish River Water Scheme Customer Supply Agreements for Raw Water and for Filtered Water and observed under clause 20(a) of each agreement, "WaterNSW may (without prejudice to any accrued right) disconnect the supply if the Consumer commits a breach of any of these clauses." The listed grounds for disconnection under clause 20(b), include clause 20(b)(vi) "non-payment of invoices." As a result, WaterNSW does not comply with the requirements under clause 6.8.2(b) of the licence.	Non-compliant (non-material)
(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	The 'If you don't pay your bill' section of the Code notifies customers that: <i>If your bill remains unpaid at the end of the reminder process, then we will consider suspending your license. This means that you cannot order, extract or trade water.</i> <i>Before the license suspension is lifted you will be required to pay the overdue amount in full. The lifting of the suspension needs to be lodged with the Land Registry Services (LRS) and could take up to 10 business days to be processed.</i>	Compliant

Clause 6.8.2	Requirement	How the requirement is addressed in WaterNSW's Debt Management Code of Practice	Compliance grading
(d)	include procedures for self-identification, identification by community welfare organisations and identification by WaterNSW of Customers experiencing financial hardship.	<p>The How do Customers Qualify for Hardship? Section of the Code includes:</p> <ul style="list-style-type: none"> • <i>Self-selection – customers can ask WaterNSW for a three-month extension to pay providing justification for the extension.</i> • <i>“WaterNSW customer service staff may identify during the conversation that the customer may need assistance with paying their bills and suggest a three-month payment extension.</i> • <i>Registered welfare organisations and community groups may contact WaterNSW and advise that a customer is suffering hardship and needs assistance in paying their bills. On receipt of this request, the customer will be contacted by the credit supervisor and may be granted a three-month payment extension.</i> • <i>WaterNSW may identify through lack of payments on an account that a customer is facing hardship and offer a three-month payment extension.</i> 	Compliant

We also observed that there are a couple of small differences between the website version of the Debt Management Code of Practice and the document version provided at audit. The document version included the following two additions that were not present on the web version:

- We cannot reduce the amount you pay (in the Assistance with paying your water account section)
- WaterNSW's credit supervisor will assess all requests for hardship. Any extensions to the initial three-month term must be approved by the Credit Supervisor (in the Hardship section).

These differences are minor in nature and are not material but WaterNSW should look to develop a consistent Code when the document is next reviewed and updated.

Recommendation

Recommendation 6.8.2-1: By 30 June 2021, amend the Debt Management Code of Practice to include procedures for identifying the circumstances under which WaterNSW may restrict the provision of services to a customer for the minor/retail customers who are able to be disconnected for non-payment of invoices.

Opportunities for improvement

OFI 6.8.2-1: We observed that there are a couple of small differences between the website version of the Debt Management Code of Practice and the document version provided at audit. The document version included the following two additions that were not present on the web version:

- We cannot reduce the amount you pay (in the Assistance with paying your water account section)

- WaterNSW's credit supervisor will assess all requests for hardship. Any extensions to the initial three-month term must be approved by the Credit Supervisor (in the Hardship section).

These differences are minor in nature and are not material but WaterNSW should look to develop a consistent Code when the document is next reviewed and updated.

Clause 6.8.3

Table 68. Clause 6.8.3 compliance grade

Subclause	Requirement	Compliance grade
6.8.3	<p>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.</p> <p>[Note: This requirement does not apply to any arrangements with Sydney Water under section 25 of the Act.]</p>	Compliant
Risk	Target for full compliance	
Without informing customers and any other persons, they may not understand the circumstances for service restriction or their payment options in times of hardship.	<p>Documentation to show how the relevant details were identified.</p> <p>Clear articulation of those relevant details in a Customer Service Charter and a Customer Supply Agreement.</p>	

Summary of reasons for grade

We reviewed WaterNSW's Customer Service Charter and the Customer Supply Agreements for the minor/retail customers it supplies water to and confirmed that these set out the details of the Code of Practice on Payment Difficulties. We observed that WaterNSW's Customer Supply Agreement Register is not up to date with the requirements for each agreement in respect of the payment difficulty information, although this is not a shortcoming or deficiency as it is not required by the licence clause. Each customer agreement in the register has a comment that this information is being drafted. Therefore, WaterNSW should update this information to be current.

This clause is Compliant.

Discussion and notes

We reviewed WaterNSW's Customer Service Charter and confirmed that the 'Trouble paying your bill' section sets out details of the Code of Practice on Payment Difficulties. Customers are informed of WaterNSW's commitment to provide assistance to customers facing financial hardship, and a link to WaterNSW is provided for customers to find out more information on the assistance that can be offered to help them pay their water charges.

We reviewed WaterNSW's Customer Supply Agreements for its minor/retail customers and confirmed the details of the Code of Practice on Payment Difficulties are included, as follows:

- Fish River Water Supply Agreement (Raw Water) - section 18.2
- Fish River Water Supply Agreement (Filtered Water) - section 18.2
- Upper Canal and Warragamba Pipeline Customer Supply Agreement – section 5.4.

As outlined under clause 6.1.1, WaterNSW has developed a register to record the details of its Customer Supply Agreement that provides a simple overview of the terms and conditions for each agreement, includes payment difficulties information. We observed

in the register that this information is currently not up to date, with a comment included against each customer that this information is being drafted for inclusion. Although this is not a shortcoming or deficiency, as it is not required by the licence clause, WaterNSW should update this information.

Recommendation

There are no recommendations for this clause.

Opportunities for improvement

OFI 6.8.3-1: WaterNSW has developed a register to record the details of its Customer Supply Agreement that provides a simple overview of the terms and conditions for each agreement, including payment difficulties information. However, we observed in the register that this information is currently not up to date, with a comment included against each customer that this information is being drafted for inclusion. Although this is not a shortcoming or deficiency, as it is not required by the licence clause, WaterNSW should update this information.

Clause 6.9 – Internal complaints handling procedure

Clause 6.9.1

Table 69. Clause 6.9.1 compliance grade

Subclause	Requirement	Compliance grade
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 (non-material)
Risk	Target for full compliance	
Not maintaining a procedure for receiving, responding to and resolving complaints means that customers may be disadvantaged and not have their complaints managed appropriately.	Evidence that WaterNSW maintains 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. Evidence to confirm that if another standard is being used, that it has been approved by IPART.	

Summary of reasons for grade

WaterNSW does not have a Complaints Management Policy. Under clause 6.3 of the Australian Standard AS/NZS 10002:2014: Guidelines for complaints management in organizations, it states that *"The organization should establish an explicit complaints management policy setting out its commitment to the effective management of complaints."* As a result, we recommend that WaterNSW establishes a Complaints Management Policy in accordance with the requirements of AS/NZS 10002:2014.

A current procedure is in place based on AS/NZS 10002:2014 (Complaints Handling and Compliments Procedure). We confirmed that no other standard, other than AS/NZS 10002:2014 is used.

WaterNSW's procedure is generally consistent with the requirements of the Standard although a number of deficiencies were observed, including management of complaints sourced from social media (clause 4.6 of the Standard) and the overall responsibilities for the complaints management system are not explicitly defined (clause 6.4 in the Standard). In addition, the responsibilities of complainants (Standard Clause 5.3.1) and complaints involving multiple parties (Standard Clause 5.3.3) are not covered in the procedure. We have included recommendations to address these deficiencies.

As WaterNSW's procedure is generally consistent with the requirements of the Standard, with the omissions not significant, this clause is considered Non-compliant (non-material).

Discussion and notes

WaterNSW does not have a Complaints Management Policy. Under clause 6.3 of the Australian Standard AS/NZS 10002:2014: Guidelines for complaints management in organizations, it states that *"The organization should establish an explicit complaints*

management policy setting out its commitment to the effective management of complaints."

As a result, we recommend that WaterNSW establishes a Complaints Management Policy in accordance with the requirements of AS/NZS 10002:2014.

WaterNSW has an Internal "Complaints and Compliments handling procedure" which is aligned with AS/NZS 10002-2014 Guidelines for complaint management in organisations. WaterNSW does not align to any other standard for its complaints management. The procedure is confirmed as current, with the next review due in March 2021.

We reviewed WaterNSW's Complaints Handling and Compliments Procedure against key components of the Standard and observed the following:

- The definitions set out in the procedure align with the definitions included in Standard Clause 4.
- The source of complaints in Section 2 of WaterNSW's procedure does not specifically include those from social media (Standard Clause 4.6).
- WaterNSW's complaints management process is visible (on the WaterNSW website and transparent (Standard Clause 5.1.3). WaterNSW has a page within the Customer Service section of its website that provides information on customer feedback and complaints.
- Accessibility of WaterNSW's complaints management system is in general accordance with the requirements of the standard (Clause 5.1.4)
- WaterNSW's procedure covers responsiveness, including indicators to measure the performance for resolving complaints, investigation and escalation. The procedure is in accordance with the overall requirements set out in Clause 5.2 of the Standard.
- Privacy of information is included in the procedure and is consistent with clause 5.2.4 of the Standard.
- No information is provided in the procedure or in the complaints section of WaterNSW's website to outline the conduct of parties (clause 5.3.1 of the Standard) to make clear the behaviour expected of both its staff and complainants.
- The procedure does not include any information for how complaints involving multiple parties are managed (clause 5.3.3 of the Standard).
- Although by not having a complaints management policy, WaterNSW does not meet all of the requirements related to commitment under clause 6.2, management commitment has been demonstrated through the provision of adequate resources, including training and support for staff handling complaints. Complaints management training completed by WaterNSW staff during the audit period includes:
 - formal complaints management training with the NSW Ombudsman completed by the Contact Centre Manager and the Customer Experience Service Improvement Specialist, who both manage and periodically review the process. This training, combined with the Ombudsman's resources and

WaterNSW's own copy of the Standard is how it aligns its processes to the Standard.

- training on its Complaints Management Procedure for frontline staff. WaterNSW provided the training register of its staff who had completed the training. WaterNSW is developing an e-module for complaints management training for rollout before the end of 2020.
- The training that has been completed also meets the requirements of other clauses in the Standard, including 6.4.5, 7.4 and 7.6.
- Responsibilities for actions within the procedure are identified, including those within the escalation procedure. The responsibilities are also assigned to the complaints performance indicators and to the specific performance reports that WaterNSW uses to report complaints management up through the organisation. However, we note that the overall responsibilities and authorities for WaterNSW's complaints management system are not explicitly defined as per clause 6.4 in the Standard.
- Generally, WaterNSW's complaints management system operates in accordance with the requirements under clause 8 of the Standard.

WaterNSW records its complaints in its customer request system (ManageEngine). Complaints are reported monthly to the Executive.

WaterNSW provided the register of customer complaints it had received in the 2019-20 financial year. We reviewed the register and made the following observations:

- We confirmed that a total of 73 complaints had been received.
- Of the 73 total, 42 were received via email, 17 were from phone calls, 7 were received through the Customer Advisory Groups/River Operations Stakeholder Consultation Committee, 5 were not assigned, 1 was received in person and 1 was received via the post.
- The complaints are categorised and the most common categories for recording the complaints received during 2019-20 were 'General' (21 complaints) and 'WaterNSW Billing' (18 complaints).
- Of the 73 complaints received, 70 were closed, 2 are on hold and 1 is still open.
- We confirmed that 50 of the 73 complaints were resolved and closed in the system within 10 days. As a result, 23 (31.5%) have taken more than 10 days to resolve. Reasons for delays are provided if the issue is complex. Five of the 23 complaints taking more than 10 days to resolve were related to metering issues which can often take in excess of 10 day to investigate and resolve.

During the course of the audit, we reviewed a number of complaints in detail, including complaints related to water ordering (clauses 4.3.2, 4.3.3 and 4.3.4) and water metering (clause 6.3.1). For this sample, we confirmed the reasons for the complaint, the investigation work that was undertaken, any escalation that was required and the resolution. We also confirmed performance against the complaints performance indicators.

Recommendation

Recommendation 6.9.1-1: By 31 March 2021, establish a Complaints Management Policy in accordance with the requirements of AS/NZS 10002:2014.

Recommendation 6.9.1-2: By 30 June 2021, undertake a review of WaterNSW's Complaints Handling and Compliments Procedure to ensure:

- a) complaints received through social media accounts are managed in accordance with the requirements of AS/NZS 10002-2014 Clause 4.6
- b) the behaviour expected of both its staff and complainants is documented in line with the requirements of AS/NZS 10002:2014 clause 5.3.1
- c) the process for managing complaints involving multiple parties is documented in line with the requirements of AS/NZS 10002:2014 clause 5.3.3.

Opportunities for improvement

No opportunities for improvement have been identified for this clause.

Clause 6.17 – Memorandum of Understanding with Natural Resources Access Regulator

Clause 6.17.1

Table 70. Clause 6.17.1 compliance grade

Subclause	Requirement	Compliance grade
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>[Note: Clause 6.17.1 does not limit the persons with whom Water NSW may enter into a memorandum of understanding.]</p>	Compliant (minor shortcomings)
Risk		Target for full compliance
Not having used best endeavours to establish, maintain and comply with the memorandum of understanding (MoU) and then not having maintained the MoU creates a compliance risk.		<p>A current MoU between WaterNSW and the Natural Resources Access Regulator (NRAR).</p> <p>Evidence to show that the MoU has been complied with.</p>

Summary of reasons for grade

A MoU between WaterNSW and NRAR had been established and formalised, as required, therefore establishment of the MoU was satisfied. The MoU was executed 24 January 2019, has a term of 5 years, and was current for the period of this operational audit, therefore maintenance was established.

Compliance was tested by sampling a number of elements of the MoU. The majority of areas tested showed sound compliance however, there were some areas which were considered to have minor shortcomings including the required frequency of Strategic Group meetings (one held in the audit period, not two as required), minor documentation issues (review cycle not marked on protocols and a small error in one of the dictionary items of the protocol). From the meeting minutes, discussion at interview, and the NRAR Board Chair letter outcomes, it is clear that a sound working relationship is in place between WaterNSW and NRAR and that WaterNSW is applying reasonable endeavours to comply with the MoU.

Sufficient evidence is available for this clause to confirm that the requirements have generally 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.

This clause was found Compliant (minor shortcomings).

Discussion and notes

Establish MoU

A MoU (D2019/34729) has been established (dated 24 January 2019) between the parties. The MoU sets out the following: purpose, term, the exchange of relevant information or records, responsibilities and accountabilities, information technology system access and use, consultation processes, amendment, review or replacement of the MoU, definitions, signatories. The content of the MoU is considered appropriate for the purpose of this clause. The signatories to the MoU are considered of an appropriate level to give the desired gravitas and effect to the MoU. The 'establishment' part of clause 6.17.1 a) is considered met.

Maintain MoU

The MoU was executed 24 January 2019, it is valid for five years from this date. The MoU is current for this operational audit. The 'maintenance' part of clause 6.17.1 a) is considered met.

Comply with MoU

The MoU sets out various items which constitute the MoU. Compliance with clause 6.17.2 b) was therefore tested against a sample of the aspects set out in the MoU and subordinate documents:

- 7. Consultation processes: ToRs to be developed at first Strategic Group meeting.
- Strategic Group consultation process: Provision of a regular forum (6 monthly meetings) for collaboration between relevant WaterNSW and NRAR senior officers (D2020/84981).
- Operation Group consultation process: Provision of a regular forum (at least 4 times per year) for collaboration between relevant WaterNSW and NRAR staff (D2020/84881).
- Agendas and minutes for meetings: Agenda items and relevant papers are to be exchanged between the parties a week prior to meeting dates (D2020/84881 ToR Operation Group).
- Quorum: A quorum requires attendance of two representatives each from WaterNSW and NRAR.
- 5. Responsibilities and accountabilities: WaterNSW and NRAR to develop necessary further guidelines or protocols to facilitate effective exchange of relevant information and records (development of area protocols was reviewed).
- Document history: Document currency and accuracy is an overarching component of demonstrating compliance with the MoU (currency of protocols and ToRs was checked).
- Provision of information in required timeframes.

All tests were met apart from the following identified shortcomings:

- The Strategic Group met only once in the audit period (24 June 2020), not the required twice.

- Document currency and accuracy is an overarching component of demonstrating compliance with the MoU. There was no review cycle associated with the three protocols tested (Areas 1-3; D2020/84906, D2020/84907, D2020/84908) and the Area 2 (D2020/84907) protocol had a term (in square brackets below) missing from the Dictionary section: *"All defined terms in this Protocol have the meaning given to them in the [MoU], as amended from time to time."*

Other Observations

There are no formal Service Level Agreements currently in place between WaterNSW and NRAR, where WaterNSW is providing commercial services. Some areas of opportunity for improvement have been suggested.

The provision of information was generally met in required timeframes. Also some delays were noted (NRAR Stakeholder Letter 17 July 2020 and confirmed at interview), there was no impact on outcomes.

These observations did not materially contribute to the grade.

Overall, this clause is considered to be currently Compliant (minor shortcomings).

Recommendation

Recommendation 6.17.1-1: By 30 June 2021, review, revise and ratify the Terms of Reference for both the Strategic Group and the Operation Group, paying particular attention to areas such as frequency of meetings.

Recommendation 6.17.1-2: By 30 June 2021, update the document history of the Area Protocols with a formalised cycle of review, to ensure establishment of currency and accuracy.

Opportunities for improvement

OFI 6.17.1-1: Consider developing a Service Level Agreement/s between WaterNSW and NRAR to formalise commercial service provision between the parties.

OFI 6.17.1-2: In all meeting minutes, consider noting the roles of each person, and not just the attendee's name, to improve record keeping and demonstration of compliance with the ToRs.

Previous Recommendations

Recommendation 2018-03: Water Quality Management System clause 2.1.1, clause 2.1.3, clause 2.1.4, Water Supply clause 3.2.1

Item	Detail
IPART's recommendation to the Minister	<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"> 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.
Audit findings & status	<p>In the 2019 audit, the auditor found that Water NSW had commenced the review of the procedures and had established a number of new procedures. However, at the time of the audit, Water NSW had not covered all processes and activities from catchment to consumer for each of Water NSW's water systems covered by the licence.</p> <p>Status reported on 31 March 2020: Completed</p>
IPART guidance	<p>Auditor to check for completion, ensuring that the relevant operational procedures are now in place.</p>

Item	Detail
Audit finding	<p>A document (D2019/30924) tabulated the procedures and process for maintaining water quality for both the Declared Catchment and the Fish River Water Supply System. This document contained target dates for review of procedures. This document meets the requirements of Parts a) and b) of this recommendation.</p> <p>The review status of these procedures was sampled and updated procedures were sighted. For the Declared Catchment, all but one had been reviewed and the outstanding procedure was in final review. WaterNSW advised the changes as a result of the review were editorial in nature and therefore training in the updated procedures was not required. The editorial nature of these changes was sighted during the audit interview.</p> <p>WaterNSW provided a Project Plan showing the schedule for the development of the O&M Manuals for the Declared Catchment storages with a projected completion date of 30th July 2021. The final draft O&M Manual for Cordeaux Dam was provided and the dates in the version control were consistent with the project plan.</p> <p>The document (D2019/30924) identified the following operational procedures for the Fish River Water Supply Scheme:</p> <ul style="list-style-type: none"> • Duckmaloi WFP O&M manual • Oberon Dam O&M manual Vols 1&2 • Duckmaloi Gas Chlorine Dosing Plant O&M manual • Oberon Gas Chlorine Dosing Plant O&M manual • Duckmaloi Treated Water Distribution System O&M manual <p>The Duckmaloi WFP O&M manual (D2016/94416) had not been updated according to the plan (and had out of date information). The Duckmaloi Treated Water Distribution System O&M manual had a note to "<i>Compile existing procedures into a manual</i>" with a due date of 30/06/20. This document had not been created.</p> <p>Duckmaloi Water Treatment Plant had undergone a SCADA upgrade during the audit period. A training plan and the training manual (D2020/106554) was provided. The manual was also sighted during the site visit. Training records were provided for the staff.</p>
Recommendation status	<p>This recommendation has been completed for the Declared Catchment. Parts c) and d) of this recommendation have not been completed for the Fish River Water Supply system (see discussion in Clause 2.1.3 regarding the currency of the Operations and Maintenance Manual for the Fish River Water Supply System. Recommendation 2.1.3-1 addresses this deficiency.</p>

Recommendation 2018-04: Water Quality Management System clause 2.1.2

Item	Detail
IPART's recommendation to the Minister	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.
Audit findings & status	<p>In the 2019 audit, the auditor found that Water NSW 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>Status reported on 31 March 2020: Completed</p>
IPART guidance	Auditor to check for completion.
Audit finding	<p>WaterNSW reported that it has met this recommendation on 31 March 2020. Several pieces of evidence were provided to support WaterNSW's position. In 2019, the auditor noted there were opportunities to further refine the risk assessment process for better alignment with Elements 2 and 3 of the Framework. Therefore, to test WaterNSW's reported completion of this recommendation, the following were tested:</p> <ol style="list-style-type: none"> 1. That a process is in place to check that water utility risk assessments meet the requirements of Element 2 and 3 of the Framework and the licence obligation. 2. That the process had been applied and met the observations of the auditor in 2019 i.e.: <ul style="list-style-type: none"> ○ 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.

Test 1

The health check (D2019/8974) includes a checklist based on the requirements of Element 2 and 3 of the Framework for Management of Drinking Water Quality and WaterNSW's licence obligation. The health check meets the requirements of the Framework and licence obligation.

Test 2

The health check was applied (January 2019) to the Oberon system (non-Declared Catchment) and the findings reviewed as part of this audit. Some of the findings were non-compliant, such as the flow diagram not having met all the requirements.

Not having a correct flow diagram means that hazards, events and risks may be missed. The Fish River flow diagram has significant descriptors missing including the possibility of having an additional raw water stream from the Duckmaloi Weir, backwash water source for the membranes, clean in place chemicals and lime addition.

A recommendation from the health check was a requirement to develop a procedure to ensure that the health check aspects were included in subsequent risk assessments. The procedure was provided as evidence of completion (D2019/30124) and information for the Lake Burragorang (Declared Catchment) risk review (D2020/89790 and D2020/89795) provided as evidence of the application of that procedure.

A range of hazardous events for the whole supply system could not be sampled as not all of the water supply system was subject to the process.

Two of the steps of the procedure were sampled and evidence checked for their correct implementation.

Step 2.0 of the process states:

- Circulate current material and identify the main issues to include on the agenda
- Objective and instructions

While no briefing paper was provided prior to the workshop, it is noted that results from a previous workshop (4 March 2020) were relied on and there was prior circulation of the risk assessment spreadsheet. These facts are accepted as fulfilling the requirements of a briefing paper. The rationale for choosing the scenarios was based on subject matter expert opinion and the scenarios having eventuated.

Step 5.0 of the process states:

- Develop/update the schematics for each supply with a requirement to include the following:
 - changes/management actions in catchment
 - upgrades/changes to assets/management processes
 - learnings from incidents
 - issues identified through data trends
 - subject matter expert to verify.

The WQMS also states that schematics require review prior to undertaking a system risk assessment or following any major changes to assets or procedures and under the assurance column, that supply system schematic diagrams are reviewed prior to Catchment to Customer risk reviews or following any significant asset or system changes. A bushfire followed by rain event, of the extent experienced, represents a potential significant

Item	Detail
	<p>system change. There is no indication that the Greater Sydney Water Supply System Schematic (D2016/96321), or any of the relevant schematics, were reviewed prior to the risk assessment 25/06/20. There is no discussion of how system characteristics are kept up to date. At interview, it was confirmed that Step 5.0 had not been followed in practice because subject matter experts were present and it was felt that there was no need. The flow diagram was not used to inform the C2C risk review – subject matter experts were relied on. Given the outcomes of the risk assessment, the calibre of the subject matter experts and the successful water quality risk management outcomes, the identified shortcoming is not material. However, there is an uncertainty over whether the C2C risk procedure (D2019/30124) applies to targeted or scenario risk reviews.</p> <p>While notes have been documented as an output from the risk workshop, there is no sign in sheet for attendees as the workshop was conducted remotely due to COVID protocols.</p>
Recommendation status	<p>Gaps identified in the implementation of the process, coupled with the auditor observations from 2019, were felt accounted for in the assessment of clause 2.1. Therefore, to avoid duplication, this recommendation is considered closed as the initial requirement of the recommendation, 'review of the manner in which WaterNSW conducts all water utility risk assessments', has been met with the implementation requirements accounted for in clause 2.1.</p>

Recommendation 2018-08: Water Supply clause 3.2.1, Customer Supply Agreements 6.1.1 and 6.8.3

Item	Detail
IPART's recommendation to the Minister	<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.
Audit findings & status	<p>The 2019 audit found that Water NSW had undertaken work to review and update its Customer Water Supply Agreement templates.</p> <p>In each case Water NSW addressed the requirements of licence clauses 6.1.3 and 6.8.4. (However, references to two acts of Parliament had not been updated). Water NSW 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, Water NSW had not yet fully planned or implemented training for users of the templates.</p> <p>Status reported on 31 March 2020: Completed</p>
IPART guidance	Auditor to check for completion, ensuring that the relevant operational procedures are now in place.
Audit finding	<p>WaterNSW has a Customer Supply Agreement Procedure (CD2019/112) that sets out the process of for preparing, reviewing and issuing a Customer Supply Agreement to ensure compliance with WaterNSW's Operating Licence. WaterNSW has also developed Customer Supply Agreement Checklist (CD2019/51111).</p> <p>Under section 2 of the procedure, staff involved are directed to first consult the list of agreement templates to determine which is the most appropriate template. Under section 3, the procedure directs staff to check to see that the agreements for Major customers are in the most current format. Minor customer agreements are identified as needing to be updated annually prior to 1 July for the next financial years IPART regulated charges.</p> <p>Under section 8 of the procedure, "<i>Legal Services should be engaged to review and comment on draft documents for any specialised advice to provide a final sign off prior to the Agreement going to the Executive Manager executing the agreement or his delegate for approval to issue to the customer.</i>" This requirement ensures that any relevant and current regulatory instruments are considered in the agreement.</p> <p>We reviewed the most recent Fish River Supply Scheme Water Supply Agreements for raw water and filtered water, based on the two templates</p>

Item	Detail
	<p>that WaterNSW has developed for these agreements, and confirmed that the references to the Plumbing Code of Australia had replaced the erroneous references to the New South Wales Code of Practice, Plumbing and Drainage that were observed in the 2018 audit.</p> <p>Training on the supply agreement has been conducted with Customer & Community Water Operations and Water Catchment and protection.</p> <p>WaterNSW provided its Training Record for the training on the Customer Supply Agreement Procedure (CD2019/112). This includes: names of the attendees, their Business Unit, the date of training and whether the training was for all contracts, major contracts or minor contracts</p> <p>We confirmed that the training on the Customer Supply Agreement Procedure has been provided to staff in the System Operations, Billing, Customer Experience, Legal and Key Account Management Business Units</p>
Recommendation status	Completed

Recommendation 2018-10: Water Supply clause 3.2.1, Customer Supply Agreements 6.1.2 and 6.1.3

Item	Detail
IPART's recommendation to the Minister	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.
Audit findings & status	<p>The 2019 audit found that Water NSW provided a draft Register of Customer Supply Agreements which identified gaps in the provisions of the Water Supply Agreement for some customers. 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.</p> <p>Further, the register did not include minor customers in the Master List.</p> <p>Status reported on 31 March 2020: Completed</p>
IPART guidance	Auditor to check for completion
Audit finding	<p>WaterNSW has developed a register to record the details of its Customer Supply Agreements (D2019/27567) that provides a simple overview of the terms and conditions for each agreement. This includes a risk assessment that identifies the activities required to be completed by WaterNSW which ensures it meets the terms and conditions for each agreement, and gaps that have been identified during the review of each agreement. The risk-based review sets out the reporting and notification requirements that WaterNSW needs to provide to each customer to ensure that it meets the all the terms and conditions of those agreements. We reviewed the Register and confirmed that the reporting and notification protocols listed are in accordance with the requirements of the agreements. The identification of gaps in the supply agreements includes listing where references to legal instruments needed to be updated in the agreements when they are next updated.</p> <p>We also confirmed that the Register of Customer Supply Agreements includes WaterNSW's Minor/Retail customers.</p>
Recommendation status	Completed

Recommendation 2018-11: Water Supply Clause 3.2.1; Customer agreements clause 6.1.2

Item	Detail
IPART's recommendation to the Minister	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).
Audit findings & status	<p>The 2019 audit found that Water NSW had not implemented the outcomes of the review of the Customer Supply Agreement, as required by this recommendation, because it had not completed the review required in Recommendation 2018-10.</p> <p>Status reported on 31 March 2020: Completed</p>
IPART guidance	Auditor to check for completion
Audit finding	<p>As noted under Recommendation 2018-08, WaterNSW has a Customer Supply Agreement Procedure (CD2019/112) that sets out the process for preparing, reviewing and issuing a Customer Supply Agreement to ensure compliance with WaterNSW's Operating Licence. WaterNSW has also developed Customer Supply Agreement Checklist (CD2019/51111) to assist in undertaking the review or the update of a new agreement. This covers items including whether water quality and quantity of water have been defined, whether reporting protocols have been established and whether a legal review has been completed on the template.</p> <p>As noted under Recommendation 2018-10, WaterNSW has developed a register to record the details of its Customer Supply Agreements (D2019/27567) that provides a simple overview of the terms and conditions for each agreement. This includes recording the gaps that have been identified during the review of each agreement. The identification of gaps in the supply agreements includes listing where references to legal instruments needed to be updated in the agreements when they are next updated, the expiry/review date for each agreement and updates and references to work that has been completed as part of the review/update of the agreement.</p>
Recommendation status	Completed

Recommendation 2018-13: Water metering and monitoring clause

6.3.1

Item	Detail
IPART's recommendation to the Minister	By 31 December 2019, Water NSW should assess the accuracy of its water take estimates for the purposes of billing, account management and reporting
Audit findings & status	In the 2019 audit, Water NSW advised that it would take action in response to this recommendation once 2019 Quarter 4 billing was finalised. Status reported on 31 March 2020: Completed
IPART guidance	Auditor to check for completion.
Audit finding	<p>With regard to the requirements of the clause, WaterNSW defines its responsibilities for the accuracy of the volume of water extracted by or supplied to customers as being the accuracy of the water take entered into the accounting system versus what was actually billed. The accuracy of what water take is determined versus what was actually extracted/used is the responsibility of the Natural Resources Access Regulator. As a result, WaterNSW's Field Services are not required to perform any meter accuracy functions at present.</p> <p>WaterNSW's Determining Water Take Procedure describes the different types of water take and the accepted forms of measuring water take. The procedure defines accuracy as +/-5% with respect to the reconciliation that WaterNSW undertakes after the invoices have been issued to check the accuracy of the billing data and the invoiced volumes. The usage data is reconciled from the WAS water ordering system to the CIMS billing system to compare the metered/calculated volume against the invoiced usage. WaterNSW has defined this level of accuracy to meet the definition of 'accurate' included in the Operating Licence requirements for clause 6.3.1.</p>
Recommendation status	Completed

Recommendation 2018-20: Roles and Responsibilities with Department on Industry clause 6.16.1

Item	Detail
IPART's recommendation to the Minister	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.
Audit findings & status	<p>In the 2019 audit Water NSW demonstrated 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).</p> <p>Status reported on 31 March 2020:</p> <p>Water NSW reported that this recommendation remains in progress with an expected date of completion by 30 June 2020. It requires cooperation from DPIE.</p>
IPART guidance	Auditor to check for completion.
Audit finding	WaterNSW presented evidence of repeated communications to DPIE in an effort to move this recommendation forward. Evidence was also provided to show that water reform is being undertaken at a state level, resulting in departmental effort being focussed elsewhere. The Deed of Business Transfer has been extended on 1 July 2020 (and is still in force) although DPIE has not yet signed the extension. At the audit interview, it was discussed that a solution to address the major part of this recommendation, would consist of a matrix of all the conferred functions with a cross-reference to the responsible party or parties. However, the barrier to achieving this outcome is in getting the necessary parties together. Despite WaterNSW's efforts (which the auditor confirmed and was also confirmed by the stakeholder letter (Submission - from DPIE Water o_ and Environment - 3 July 2020.pdf), this recommendation is not yet closed.
Recommendation status	This recommendation remains open and should be checked for completion at the next operational audit.

Recommendation 2019-01: Water Quality Management System clause 2.1.1, 2.1.3 & 2.1.4

Item	Detail
IPART's recommendation to the Minister	<p>By 30 September 2020, Water NSW should 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 frequency and number of <i>E. coli</i> 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).
Audit findings & status	<p>New recommendation in 2019.</p> <p>Status reported on 31 March 2020:</p> <p>Water NSW reported this recommendation as still in progress with an expected completion date by 30 September 2020.</p>
IPART guidance	Auditor to check for completion or progress.
Audit finding	<p>A document (D2020/78702) was provided that considered the sampling program of both Lithgow City Council and WaterNSW as evidence for this recommendation. Table 3.4: Stage 1 drinking water (operational, verification and compliance) in the Water Monitoring Program documents the distribution system monitoring. It is not clear from the table the distinction WaterNSW has made between verification and compliance monitoring.</p> <p>The auditor discussed WaterNSW's current distribution system sampling program with the relevant representative from NSW Health. In undertaking verification monitoring consideration should also be given to <i>The NSW Health Drinking Water Monitoring Program</i> (NSW Health 2011). When considering the program, WaterNSW should consider the complexity of their system (which NSW Health advised would be a complex system). In determining population, only the WaterNSW customers should be considered for the distribution system that WaterNSW operates. Lithgow City Council is responsible for developing and implementing the monitoring program for their distribution system.</p> <p>No evidence was provided that WaterNSW has reviewed the implementation of the monitoring plan. We noted that WaterNSW undertakes weekly routine distribution system monitoring (recorded in D2019/61055) of colour, chlorine residual, turbidity and pH. This monitoring does not align with what is documented in Table 3.4 of the Water Monitoring Program.</p> <p>No evidence was provided that review and reporting processes had been established to confirm and report compliance with the monitoring program. WaterNSW reports the results from the sampling in the monthly Fish River Water Quality Report. These reports did not verify the number of samples taken. Instead compliance was reported as a percentage. Chlorine residual, colour and pH were consistently not reported for Glen Davis despite being required in Table 3.4.</p>

Item	Detail
Recommendation status	While WaterNSW have not completed the requirements of this recommendation, the outstanding aspects have been included in recommendation 2.1.3-3.

Recommendation 2019-02: Water Quality Management System clause 2.1.3

Item	Detail
IPART's recommendation to the Minister	By 30 September 2020, Water NSW 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
Audit findings & status	New recommendation in 2019. Status reported on 31 March 2020: Water NSW reported this recommendation as still in progress with an expected completion date by 30 September 2020.
IPART guidance	Auditor to check for completion or progress
Audit finding	WaterNSW noted that it had decided to use the DPI minimum qualifications coupled with fluoridation training as the minimum training and competencies for personnel operating water treatment processes. This approach is considered sound. Evidence was provided to demonstrate that a role had been created to which the competencies would be attributed. Certificates of training were also provided. WaterNSW noted that it is in the final stages of completing this recommendation by working with its People and Culture Team to incorporate the training into the myLearning system.
Recommendation status	Review completion of this recommendation at the next audit.

Appendix A Evidence sighted

A.1. Clause 2 Water Source protection and conservation

Clause 2.1 Water quality management system

Clause 2.1.1

- CD2013/56[v5] Water Quality Management System.DOCX
- CD2014/5[v5] Water Quality Policy.PDF
- CD2019/129 Fish River DWQuality Management System.PDF
- D2020/115486 ARK Screenshot rev21 WQ Incident Response Protocol Dec 2019.JPG

ADWG Element 1

- CD2014/5[v5] Water Quality Policy.PDF
- D2020/78695 WQ Catchment_Mandatory_Training_Report_2020_07_08.XLSX
- D2020/89947 screenshot - Water Quality Awareness training.JPG
- D2017/139311[v2] Legal and Other Requirements Register.XLSX
- D2015/88093 Water Quality Adviser Position Description.DOCX
- D2020/71509 Water Quality Performance Trend Analysis Report Item 6.1.DOCX
- D2020/78695 WQ_Catchment_Mandatory_Training_Report_2020_07_08.XLSX
- D2020/89947 screenshot - Water Quality Awareness training.JPG
- D2020/91412 Copy of Position Description - Asset Custodian.PDF
- D2020/91414 Copy of Position Description - Maintenance Team Leader.PDF
- D2020/91419 Intranet Screenshot - current position descriptions.JPG
- D2020/91610 RE training module review.MSG
- D2013/94543 WaterNSW Water Quality Contact List.DOCX
- CD2015/281[v3] WaterNSW-Customer-Advisory-Group-Charter.PDF
- D2016/90171 Signed Memorandum of Understan~NSW and NSW Health August 2016.PDF
- D2019/63497 Terms of Reference Public Health SLG JOG - Version 2.PDF
- D2020/48605 Fish River System Customer Forum Minutes 26 May 2020.DOCX
- D2020/79949 Audit history screenshot - WQ contact list.JPG

ADWG Element 2

- D2015/88093 Water Quality Adviser Position Description.DOCX
- D2020/71509 Board Committee Water Quality Performance and Trend Analysis Item 6.1.DOCX
- D2020/91412 Copy of Position Description - Asset Custodian.PDF
- D2020/91414 Copy of Position Description - Maintenance Team Leader.PDF
- D2016/78089 Woronora Water Supply System Schematic.PPTX
- D2016/78247 Prospect Water Supply System Schematic.PPTX
- D2016/96321 Greater Sydney Water Supply System Schematic.PPTX

- D2017/68067 Shoalhaven Water Supply System Schematic.PPTX
- D2017/68141 Blue Mountains Water Supply System Schematic.PPTX
- D2017/71880 Upper Nepean Water Supply System Schematic.PPTX
- D2020/79789 fish river schematic complete.PPTX
- D2020/89790 Notes risk review Lake Burragorang WQ SWC supply options.DOCX
- D2020/89795 Post 23.06.20 mtg Warragamba WQ Risk Assessment Spreadsheet.XLSX
- CD2012/130[v5] Water Quality Data Review and Reporting Procedure.DOCX
- D2020/29723 Annual Water Quality Monitoring report 018 - 19.PDF
- D2020/61629 WNSW Exec mtg - 7-8.07.20 WQ Dashboard Report June 20 - Item 2.2d.DOCX
- D2020/71205 Board Com WQH&CP 19.08.20 Annual WQMS Risk Review - item 7.4.DOCX
- D2019/79751 FRWS Annual review of DWQ Management System 2018 - 2019.DOCX
- D2020/46781 Lake Burragorang Water Quality Report 20 May 2020.PDF
- D2020/49057 Lake Oberon Duckmaloi Weir Water Quality Report - May 2020.PDF
- D2020/60456 Fish River Drinking Water Quality Report - May 2020.PDF
- D2019/30124 C2C Risk Review Process.DOCX
- D2020/89790 Notes risk review Lake Burragorang SWC supply options.DOCX
- D2020/89795 Post 23.06.20 mtg Warragamba WQ Risk Assessment Spreadsheet.XLSX
- D2020/91246 New Issues Register Aug 2020.XLSX
- D2020/71205 Board Com WQH&CP 19.08.20 Annual WQMS Risk Review - item 7.4.DOCX
- D2018/1974 Collated info chemicals stored non mining sites within Special Areas.DOCX
- D2019/45035 Item 5.4 Chemical Risk Assessment.DOCX
- D2020/89860 Risk assessment status for FRDWQuality Management System.MSG
- D2019/142570 Exercise Deep Purple Incident Debrief Report Nov 2019.DOCX
- D2019/30124 C2C Risk Review Process.DOCX
- D2020/19811 Post Fire WQ Monitoring Plan – Lake Burragorang 2020.DOCX
- D2019/84872 Board Com WQH&CP Catchment to Customer ~ Item 7.1.DOCX
- D2020/71205 Board Com WQH&CP 19.08.20 Annual WQMS Risk Review - item 7.4.DOCX
- D2020/90899 Item 4.1 JOG Catchment to Customer Annual Update.DOCX

ADWG Element 3

- CD2019/129 FR Water Supply Water Quality Management System.DOCX
- D2019/103811 C2C 5yr review base sheet.XLSX
- D2020/91246 New Issues Register Aug 2020.XLSX
- D2020/71509 Board Com Water Quality Performance Trend Analysis Item 6.1.DOCX

- CD2019/129 FR Water Supply Water Quality Management System.DOCX
- CD2004/183[v3] Water Quality Incident Response Protocol.DOCX
- CD2019/129 FR Water Supply Water Quality Management System.DOCX

ADWG Element 4

- CD2004/183[v3] Water Quality Incident Response Protocol.DOCX
- CD2019/129 FR Water Supply Water Quality Management System.DOCX
- D2020/89865 screenshot WNSW manuals plans on intranet for staff access.JPG
- D2020/89871 Copy of Duckmaloi O&M manual - Revision A.PDF
- D2020/90439 DRAFT Operations and Maintenance Manual - Cordeaux Dam.DOCX
- D2020/90442 WNSW O and M - Project Plan August 2020 Progress.PDF
- CD2011/179[v6] Water Monitoring Program Manual.DOCX
- CD2011/179[v6] Water Monitoring Program Manual.DOCX
- CD2004/183[v3] Water Quality Incident Response Protocol.DOCX
- D2013/94543 WNSW Water Quality Contact List.DOCX
- D2020/70909 RE NOCTSO Warragamba Outlet Change July 2020 SW Response.MSG
- D2019/145396 Green Wattle Kowmung Ruined Fires Telemetry Status.XLSX
- D2019/147648 Copy EAMS-Condition-Report GS WS for Treatment - for WQMS input.XLSX
- D2019/65995 Water Monitoring Asset Class Standard.DOCX
- D2020/71205 Board Com WQH&CP 190820 Annual WQMS Risk Review - item 7.4.DOCX
- D2020/89883 DWA2 VPS data QC report.TXT
- D2020/89884 DWA2 EXO calibrations.XLSX
- D2020/89885 DWA2 service 010720.DOCX
- D2020/89886 DWA2 schedule FY 20-21.XLSX
- CD2019/36 Materials Chemicals in contact DW Supplies Procedure.DOC
- D2020/89891 Chlorine gas Duckmaloi May 2020.PDF
- D2020/89892 Chlorine gas Rydal Jul 2020.PDF
- CD2016/77[v3] WNSW Procurement Framework.DOCX
- D2020/80368 4.5 Screenshot - Spendwise procurement portal.JPG

ADWG Element 5

- CD2011/179[v6] Water Monitoring Program Manual.DOCX
- CD2007/13[v5] Complaints and Compliments Handling Procedure.DOC
- D2020/60054 Training Acknowledgement Complaints and Compliments Procedure.DOCX
- D2020/89949 Screenshot - ARK notes complaints training acknowledgement.JPG
- D2020/90765 Fish River Operations Forum agenda 1882020.DOCX
- CD2012/130[v5] Water Quality Data Review and Reporting Procedure.DOCX
- D2019/100295 Lake Burrarorang Water Quality Report 17 September 2019.PDF

- D2019/104346 Lake Oberon and Duckmaloi Weir~uality Report - September 2019.PDF
- D2019/104565 Lake Burragorang Water Quality Report 27 September 2019.PDF
- D2019/110122 Lake Burragorang Water Quality Report 14 October 2019.PDF
- D2019/113759 Lake Burragorang Water Quality Report 24 October 2019.PDF
- D2019/117247 Lake Oberon and Duckmaloi Weir~ Quality Report - October 2019.PDF
- D2019/134201 Lake Burragorang Water Quality Report 11 November 2019.PDF
- D2019/140010 Lake Burragorang Water Quality Report 26 November 2019.PDF
- D2019/142684 Lake Oberon and Duckmaloi Weir~Quality Report - November 2019.PDF
- D2019/145726 Lake Burragorang Water Quality Report 4 December 2019.PDF
- D2019/149356 Fish River Drinking Water Quality Report - October 2019.PDF
- D2019/151765 Fish River Drinking Water Quality Report - November 2019.PDF
- D2019/152649 Lake Burragorang Water Quality Report 24 December 2019.PDF
- D2019/152774 Lake Oberon and Duckmaloi Weir~Quality Report - December 2019.PDF
- D2019/152909 Lake Burragorang Water Quality Report 31 December 2019.PDF
- D2020/10890 Lake Burragorang Water Quality Report 4 February 2020.PDF
- D2020/11357 Lake Oberon and Duckmaloi Weir~ Quality Report - January 2020.PDF
- D2020/22628 Lake Burragorang water quality report - 9 March 2020.PDF
- D2020/25274 Lake Burragorang water quality report - 17 March 2020.PDF
- D2020/29116 Lake Burragorang Water Quality Report 27 March 2020.PDF
- D2020/32951 Lake Burragorang Water Quality Report 7 April 2020.PDF
- D2020/33094 Lake Oberon and Duckmaloi Weir~Quality Report - February 2020.PDF
- D2020/33096 Lake Oberon and Duckmaloi Weir~er Quality Report - March 2020.PDF
- D2020/38681 Lake Oberon and Duckmaloi Weir~er Quality Report - April 2020.PDF
- D2020/40348 Lake Burragorang Water Quality Report 23 April 2020.PDF
- D2020/45168 Lake Burragorang Water Quality Report 8 May 2020.PDF
- D2020/45326 Fish River Drinking Water Quality Report - February 2020.PDF
- D2020/45327 Fish River Drinking Water Quality Report - January 2020.PDF
- D2020/45328 Fish River Drinking Water Quality Report - December 2019.PDF
- D2020/45329 Fish River Drinking Water Quality Report - April 2020.PDF
- D2020/45330 Fish River Drinking Water Quality Report - March 2020.PDF
- D2020/46781 Lake Burragorang Water Quality Report 20 May 2020.PDF
- D2020/46781 Lake Burragorang WQ Report 20 May 2020.PDF
- D2020/49057 Lake Oberon and Duckmaloi Weir~ater Quality Report - May 2020.PDF

- D2020/49057 Lake Oberon Duckmaloi Weir WQ Report - May 2020.PDF
- D2020/5463 Lake Burragorang Water Quality Report 16 January 2020.PDF
- D2020/55395 Lake Burragorang Water Quality Report 4 June 2020.PDF
- D2020/60456 Fish River Drinking Water Quality Report - May 2020.PDF
- D2020/60456 FR Drinking Water Quality Report - May 2020.PDF
- D2020/61248 Lake Burragorang Water Quality Report 22 June 2020.PDF
- D2020/66672 Lake Burragorang Water Quality Report 2 July 2020.PDF
- D2020/67213 Lake Oberon and Duckmaloi Weir~ter Quality Report - June 2020.PDF
- D2020/73641 Fish River Drinking Water Quality Report - June 2020.PDF
- D2020/75431 Lake Burragorang Water Quality Report 20 July 2020.PDF
- D2020/76179 Lake Oberon and Duckmaloi Weir~ter Quality Report - July 2020.PDF
- D2020/83958 Lake Burragorang Water Quality Report 3 August 2020.PDF
- D2020/91742 Fish River Drinking Water Quality Report - July 2020.PDF
- D2020/92535 Lake Burragorang Water Quality Report 17 August 2020.PDF
- D2020/95207 Lake Burragorang Water Quality Report 28 August 2020.PDF
- D2020/95871 Lake Oberon & Duckmaloi Weir~r Quality Report - August 2020.PDF
- D2020/99766 Fish River Drinking Water Quality Report - August 2020.PDF
- D2020/84695 NOCTSO - Warragamba Dam Outlet Reconfig 6.08.20.DOCX
- CD2004/183[v3] Water Quality Incident Response Protocol.DOCX

ADWG Element 6

- CD2004/183[v3] Water Quality Incident Response Protocol.DOCX
- D2020/80593 6.1 Copy of Joint Comms Protocols-v1 March 2019.PDF
- CD2004/183[v3] Water Quality Incident Response Protocol.DOCX
- D2020/80593 6.1 Copy of Joint Comms Protocols-v1 March 2019.PDF
- D2019/139983 20191127_Attendance Sheets_Incident Exercise_Deep Purple.PDF
- D2019/142570 Exercise Deep Purple Incident Debrief Report Nov 2019.DOCX
- D2020/89950 Screenshot - WQ Incident response training myLearning.JPG
- D2019/112112 WQ Impacts After Bushfire risk assessment monitoring plan 19.DOCX
- D2019/152034 Bushfire WQ Management Plan - Warragamba.DOCX
- D2020/14953 Item 4.6 Update on bushfire impacts.PPTX
- D2020/79949 Rain Bomb 2020 - Incident Hot Debrief - 25 February 2020.DOCX
- D2020/31746 Efficacy of sediment booms post-fire rainfall event.DOCX
- D2020/79769 Incidents and events 2019-20.DOCX
- D2020/80633 Item 3.3 Review responses Incidents and Exercises May 20.DOCX
- CD2017/63[v2] Business Continuity Management Policy.DOCX
- CD2020/61 Business Continuity Management Procedure.DOCX
- D2016/39701 Contingency Plan Warragamba Rain V6.DOCX

- D2019/85273 Cont Plan Maintain Supply to Orchard Hills during wq incidents.DOCX
- D2019/85273 Plan to Maintain Supply during water quality incidents.DOCX
- D2019/89366 2019 Joint Annual Maintenance ~2 Outage Contingency Plan rev2.PDF
- D2019/89366 2019 Joint Annual Maintenance Outage Contingency Plan.PDF
- D2020/12280 NOCTSO - Transition - 100 Prospect to Orchard Hills Cont.DOCX
- D2020/12280 NOCTSO Transition to 100 Prospect to Orchard Hills Contingency.DOCX
- D2020/13048 Media release - Catchment rain Sydney dam totals - Feb 2020.MSG
- D2020/14600 20200212 - 1406 - MBN - Warragamba Dam_Status_12.02.2020_2pm.MSG
- D2020/35705 Raw water Supply Contingency Plans JAM Program_DRAFT240420.DOCX
- D2020/42729 Board Comm Audit and Risk - 20.05.20 - BCM Policy and Procedure [7.05.20 v2] - Item 3.4.DOCX
- D2020/42732 Board Comm Audit and Risk 20.05.20 BCM Policy and Procedure [IMT observations and ~ Item 3.4 ATT3.DOCX
- D2020/105473 Second Example of notification - FW_ Lake Burragorang Update 20_8_20.pdf
- D2020/105473 Second Example of notification Lake Burragorang Update 20_8_20.PDF
- D2020/105476 Example of notification - FW_ ~ Burragorang Update 17_8_20 PM.PDF
- D2020/105476 Example of notification - FW_ Lake Burragorang Update 17_8_20 PM.pdf
- D2020/106560 Details on RACS incident No.1242.DOCX
- D2020/106678 FINAL August Comms Kit.pptx
- D2020/106679 RACS Incident 1005.DOCX
- D2018/51563 Confirmation that Water Quality Incident Response Protocol April 18 was provided to NSW Health.EML

ADWG Element 12

- D2020/61629 Water Quality Dashboard Report June 2020.DOCX
- D2020/71509 Water Quality Performance and Trend Analysis.DOCX
- D2020/78735 Annual WQMS Report.DOCX
- D2020/78736 17 June 2020 - Annual System Health Check.DOCX
- D2020/78735 Board Committee on WQHCP- 19 August 2020 Annual WQMS Report - item 8.3.DOCX
- D2020/78736 17 June 2020 - Annual System Health Check.DOCX
- D2020/80607 Item 1.1 Water Quality Management System Update 18 May 2020.PPTX
- D2020/68138 WQIP Action Tracking Procedure.DOC

- D2020/89952 Screenshot - Water Quality Imp~ training module in myLearning.JPG
- D2019/53719 Water Quality Improvement Plan.XLSX

Clause 2.1.2

- CD2013/56[v5] Water Quality Management System.DOCX
- D2020/89790 Notes risk review Lake Burragorang WQ - Sydney Water supply options.DOCX

Clause 2.1.3

- CD2013/56[v5] Water Quality Management System.DOCX
- CD2019/129 FR DWQuality Management System.PDF
- D2018/70182 C2T MidTerm Review - Oberon-Lithgow 2018.XLSX
- D2018/70183 C2T risk assesst workshop Wallerwang Office 29 June.EML
- D2019/71253 PHU acknowledge FRWS -DWQ Management System.EML
- D2020/115031 FW Comment of Fluoride dosing Duckmaloi TP.MSG
- D2020/115066 scada screen Duckmaloi chlorination.MSG
- D2020/115235 FW Duckmaloi WTP Fluoridation project timeline.MSG
- D2020/115657 Bench test results 14052020.JPG
- D2020/115669 RE Quote WaterNSW - Oberon - SF00646491.MSG
- D2020/115672 RE CWT analyser.MSG
- D2020/115674 RE New CWT sensor at Duckmaloi.MSG
- D2020/115697 RE Chlorine sensor outage on clear water.MSG
- D2020/115991 Pressure decay test - SCADA.JPG
- D2020/116137 Screenshot Trans-membrane pressure alarmed in SCADA.MSG
- D2020/116139 Screenshot membrane performance in SCADA.MSG
- D2020/116754 Duckmaloi O&M manual review roadmap 201020.PPTX
- D2020/87210 FW FRWS DWQM System report to NSW Health.EML

Clause 2.1.4

- D2019/126165 Item 1.1 Water Quality Management System Update 11 Nov 2019.PPTX
- D2020/11816 2019 Aquality Moderation Report V2.PDF
- D2020/78736 17 June 2020 - Annual System Health Check - ~ Item 6.2.DOCX
- CD2017/8[v2] Charter - Board Committee WQ Health and Catchment Protection.DOCX
- D2018/70182 C2T MidTerm Review - Oberon-Lithgow 2018.XLSX
- D2018/70183 C2T risk assesst workshop Wallerwang Office 29 June.EML
- D2020/115015 FW Water results at Glen Davis.MSG
- D2020/115021 Sample log sheet 20200715124052.PDF
- D2020 /115066 scada screen Duckmaloi chlorination.MSG
- D2020/115107 2020 WQ, Health Catchment Protectn Board Com Work Plan.DOCX
- D2020/115698 Commentary on risk assessment for pathogens.MSG

- D2020/115991 Pressure decay test - SCADA.JPG
- D2020/116088 Screenshot completed work order chlorinator inspection.JPG
- D2020/116137 Screenshot Trans-membrane pressure alarmed in SCADA.MSG
- D2020/116139 Screenshot membrane performance in SCADA.MSG
- D2020/116149 FW alarm limits for Duckmaloi.MSG
- D2020/116156 RE Audit report FRWS - SCADA.MSG
- D2020/116789 Valley Bobcat Purchase Order 191020 FRWS Repairs and Maintenance.PDF
- D2020/43191 June 2020 WQ Performance and Trend Analysis Item 6.1.DOCX

Clause 2.1.5

- D2020/92598 Operational Audit Questionnaire 2019-2020 - WNSW Completed.DOCX
- See also Evidence for 2.1.1, 2.1.2 and 2.1.3

Recommendation 2018-03: Water Quality Management System clause 2.1.1, clause 2.1.3, clause 2.1.4, Water Supply clause 3.2.1

- D2019/30924 Procedures and Processes for managing Water Quality.DOCX
- D2019/83304 Copy of D2019/62480 - Mgt monthly performance report June 2019 Item 2.4a.DOCX
- D2019/83313 Emails progress ~ Procedures and Processes for managing Water Quality.EML
- D2020/90439 DRAFT Operations and Maintenance Manual - Cordeaux Dam.DOCX
- D2020/90442 WaterNSW O and M - Project Plan August 2020 Progress.PDF

Recommendation 2018-04: Water Quality Management System clause 2.1.2

- D2019/8974 Catchment to Customer Risk Assessment (C2C) process system health check (Oberon)-Jan 2019.XLSX
- D2019/30124 C2C Risk Review Process.DOCX
- D2020/89790 Notes on risk review of Lake Burragorang water quality and Sydney Water supply options.DOCX
- D2020/89795 Post 23 June 2020 mtg Warragamba Dam WQ Risk Assessment.XLSX

Recommendation 2019-01: Water Quality Management System clause 2.1.1, 2.1.3 & 2.1.4

- D2020/48605 FR System Customer Forum Minutes 26 May 2020.DOCX
- D2020/78248 Lithgow Council bacteriological sampling program.MSG
- D2020/78702 Monitoring of Duckmaloi supply.DOCX
- D2020/79789 fish river schematic complete.PPTX

Recommendation 2019-02: Water Quality Management System clause 2.1.3

- D2020/91647 Screenshot Chemical dosing system course - myLearning.JPG
- D2020/92207 Chemical Dosing systems – G Embleton certificate.pdf
- D2020/92208 Chemical Dosing systems – G Murray certificate.pdf
- D2020/92209 Fluoridation of Public Water supplies – M Duffy Certificate.PDF
- D2020/92210 Operation of Water ~ment works M Duffy Certificate.PDF
- D2020/92211 Chemical Dosing systems – M Duffy Certificate.PDF
- D2020/92212 Water treatment update M Duffy Certificate.PDF

Clause 2.4 Catchment Infrastructure Works management

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Catchment Infrastructure Works Management Operational Audit - 2020
- CD2015/331[v3] Asset Criticality Assessment Procedure
- CD2015/335[v2] Asset Condition Assessment Guidelines
- CD2015/436[v8] Strategic Asset Management Plan
- CD2017/180[v2] Incident Management Procedure
- D2016/112894[v5] WaterNSW Bushfire Operational Protocol 2019-2020
- D2020/12496 NOCTSO Prep for Deterioration WQ at Warragamba Feb20
- D2020/63325 Bushfire Recovery Steerco report 2020701
- D2020/89796 IPART operating Licence Audit Warragamba Dam Capital Works List
- D2020/18787 Total Storage 80 Cancel WNSW Shoalhaven Transfers_170220
- D2020/22120 MASTER SCHEDULE - 050320 to 2024
- D2019/110475 Water Security Status Report October 2019
- D2019/145753 WNSW SWC Operational Drought Response Plan
- Greater Sydney water storage and supply report, Thurs 6 June 2019
- Greater Sydney water storage and supply report, Thurs 12 December 2019
- Greater Sydney water storage and supply report, Thurs 20 February 2020
- Greater Sydney Operations Report, June 2020
- D2019/79611 WNSW-GEN-PL-001 Asset Class Strategy Development Plan

Clause 2.5 Calculating system yield

Clause 2.5.1

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Calculating System Yield - Operational Audit 2020
- WaterNSW, D2020/67246 Submission-Yield Update July 2020
- WaterNSW, D2020/53357 Review of Sydney water supply system yield 2020

- WaterNSW, D2020/53361 Att1 System Info & Op rules_2020 Yield Update June 2020
- WaterNSW, D2020/53366 Att2 History of changes yield model (WATHNET) - June 2020
- WaterNSW, D2020/67243 Att2 History of changes to yield model (WATHNET) - July 2020
- WaterNSW, D2020/67245 Att1 System Info & Op rules 2020 Yield Update July 2020

Clause 2.5.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Calculating System Yield - Operational Audit 2020
- WaterNSW, D2020/106013 B20 8076 SIGNED Recalculation of GSW supply yield

Clause 2.7 Water conservation

Clause 2.7.3

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Clause 2.7.3 -Water Conservation - Operational Audit - 2020
- WaterNSW, D2019/89269 WaterNSW Request for Extension to 31 March 2020 Approved email, 8 August 2019
- IPART, Letter - Water conservation works program submission extension, 23 August 2019
- WaterNSW, D2020/37484 31 March 2020 - Water Conservation Work Program to IPART email, 31 March 2020
- WaterNSW, 2020/0226 2-3-2 Water Conservation Works Program FINAL, February 2020

Clause 2.8 Research on catchments

- Audit Team Declared Catchment Area site visit 23 September 2020.
- D2019/42274 Macroinvertebrate Monitoring Program revision 2019.DOCX
- D2019/113193 Board Committee on WQ, Health and CP - 20 November 2019 - Annual Science Program Review - Item 6.2 ATT.PPTX
- D2019/113194 Board Committee on WQ, Health and CP - 20 November 2019 - Annual Science Program Review - Item 6.2.DOCX
- D2019/137747 Interim upgrade of swamp monitoring equipment - CEO Approval Form- signed.PDF
- D2020/2209 Stormwater Pollution Investigation Study FARMERS CREEK CATCHMENT – Phase 1 Report.DOCX
- D2020/43880 Board Committee on WQ, Health and CP - 17 June 2020 - Science Prioritisation ~ Item 3.1 ATT PRESENTATION.PPTX

- D2020/46035 Board Committee on WQ, Health and CP - 17 June 2020 - Science Prioritisation Project - Item 3.1.DOCX
- D2020/68378 Science Program Overview - end of 2020 financial year update.DOCX
- D2020/70375 FY20 Annual Catchment Management Report - DRAFT.DOCX
- D2020/91179 Science Program monthly portfolio report - July 2020.DOCX
- D2020/31746 Efficacy of sediment booms in ~e to post-fire rainfall event.DOCX
- D2020/106070 FW Drinking Water Catchment Erosion Data from DPIE.MSG
- D2020/106071 Fire research - ash, soil and ~nt totals and by sub-catchment.MSG
- D2020/106072 history of document scope deve~osion model validation project.PNG
- D2020/106081 FW Bushfires and sediment transport from DPIE.MSG
- D2020/70375 FY20 Annual Catchment Management Report - DRAFT.DOCX
- D2019/65566 Research partnership approval Cost of Cyanobacteria WaterRA.DOCX
- D2020/116027 Water Security CRC- Partner Declaration Form - WaterNSW.PDF
- D2020/116031 Science program project scopes relating to CCPs.MSG
- D2020/116032 Evidence of who we work with Science Program.MSG
- D2020/75712 Project Status Report Economic Impact of HNABs (WaterRA#1125).DOCX

A.2. Clause 3 Bulk Water storage and transmission

Clause 3.1 Construct, maintain and operate Water Management Works

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Clause 3.1.1 Water Management Works Operational Audit – 2020
- Demonstration of Enterprise Asset Management System information for the Chaffey Dam to Chaffey to Dungowan pipeline
- D2020/103675 Peel Drought Relief Works - Project Handover Plan
- D2020/105564 Peel Drought Response Project - Operating Licence Audit_Initial Draft_V2.0
- D2020/105578 Clarification on Chaffey Pipeline
- D2020/107162 Chaffey Pipeline and Pump Station - Design Basis Report
- D2020/7044 Quarterly Planning Meeting - January 2020
- D2020/12496 NOCTSO Prep for WQ deterioration Warragamba Feb 2020
- D2020/18787 Total Storage 80 Cancel WNSW Shoalhaven Transfers_170220
- D2020/22120 MASTER SCHEDULE - 050320 to 2024
- D2020/63325 Bushfire Recovery Steerco report 2020701
- D2020/90011 RE Warragamba DWPS Single Pump Commissioning
- D2020/92316 RACS extract for Incident 882 Prospect RWPS

- D2020/92317 RACS extract Incident 887 Nepean RHS RFGV closed position
- CD2007/2[v3] Raw Water Supply Protocols - SWC WNSW
- CD2017/173 WNSW Lithgow CC OP Protocol FRWS Manual
- CD2017/180 Incident Management Procedure
- D2019/92290 Management Committee Assets Nepean Dam Water Supply Failure
- D2019/105916 RACS882-PMP-RP-001 Prospect RWPS Failure ICAM Report Rev 0
- D2019/109390 SHOALHAVEN TRANSFERS Tallowa -3m 14102019 w Origin pump plan
- D2019/110475 Water Security Status Report October 2019
- D2019/124772 Management Committee on Assets Prospect Pump Station Failure - Item 3.2.1
- D2019/126492 RACS887-VLV-RP-001 Nepean Fail Closed ICAM Report Rev 0
- D2019/145753 WNSW SWC Operational Drought Response Plan
- WaterNSW 20 Year Infrastructure Options Study, June 2018, Summary Report
- NSW Government, 2017 Metropolitan Water Plan
- D2019/92121 WaterNSW Board meeting - 25 Sept 19 Performance Report (Item 6.1)
- D2019/97729 Board Committee on Assets - 25 Sept 19 FY19 Year in Review - Item 6.7
- D2020/11114 Board Committee on Assets - Capability Program - Item 3.1
- D2020/66644 Management Committee on Assets - 3.1 - Asset Dashboard Report
- D2019/110427 Executive Team Monthly - Water Worry Report - Item 9.14
- D2020/110779 Assets Full Project Status Reports - Aug 2020

Clause 3.2 Water Supply

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Clauses 3.2.1 and 4.2.2 - Water Supply and Water Supplied Performance Standards - Operational Audit - 2020
- D2020/60456 Fish River Drinking Water Quality Report - May 2020
- D2020/67559 SWC Monthly Compliance Report - June 2020
- D2020/90121 No Conformance Summary 2019 20
- D2020/11693 SWC Monthly Compliance Report - January 2020
- D2020/28062 Shoalhaven Council Water Quality Report February 2020
- D2020/31424 WingecarribeeGoulburn Mulwarree WQ Report Mar 20
- D2020/45168 Lake Burragorang Water Quality Report 8 May 2020
- D2020/46781 Lake Burragorang Water Quality Report 20 May 2020
- D2020/49057 Lake Oberon and Duckmaloi Weir WQ Report - May 2020
- Notification for Upper Canal Planned Outage, May 2020

A.3. Clause 4 Performance Standards

Clause 4.2 Water supplied performance standards

- See evidence for Clause 2.1.2 and 2.1.3
- D2020/115066 scada screen Duckmaloi chlorination.MSG

Clause 4.3 CSR Water Performance Standard

Clause 4.3.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: CSR Performance Indicators - Operational Audit - 2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- Demonstration of WaterNSW's CAIRO system, used by the System Operations group for water balance calculations and to confirm and approve customer water orders
- Demonstration of WaterNSW's ServiceNow service management system
- WaterNSW, D2020/67928 Jun 2020 Water Order Stats
- WaterNSW, CD2015/312[v2] Water Ordering Procedure
- WaterNSW, DOC10/11867[v2] Customer Service Officer - Water Order Checklist
- WaterNSW, D2020/68308 4_3_2 Non-Complying Water Orders 2019-20

Clause 4.3.3

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: CSR Performance Indicators - Operational Audit -2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- Demonstration of WaterNSW's CAIRO system, used by the System Operations group for water balance calculations and to confirm and approve customer water orders
- Demonstration of WaterNSW's ServiceNow service management system
- WaterNSW, D2020/67928 Jun 2020 Water Order Stats
- WaterNSW, CD2015/312[v2] Water Ordering Procedure

Clause 4.3.4

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: CSR Performance Indicators - Operational Audit -2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- Demonstration of WaterNSW's CAIRO system, used by the System Operations group for water balance calculations and to confirm and approve customer water orders
- Demonstration of WaterNSW's ServiceNow service management system
- WaterNSW, D2020/67928 Jun 2020 Water Order Stats

- WaterNSW, CD2015/312[v2] Water Ordering Procedure
- CD2020/69 Work Instruction - Rescheduled Water Order

Clause 4.3.5

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: CSR Performance Indicators - Operational Audit -2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- WaterNSW, D2019/79545 IPART COAG Targets 2019_ 2020
- WaterNSW, Statement of Compliance Letter to IPART 2020-08-30
- CD2015/314[v3] Water Allocation Assignment Procedure
- CD2020/13[v1] Temporary Allocation Assignment (71T71V) – Application checklist
- Clayton UTZ, Email to WaterNSW: WaterNSW operating licence operational audit, 30 October 2020

Clause 4.3.6

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: CSR Performance Indicators - Operational Audit -2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- D2019/79545 IPART COAG Targets 2019_ 2020
- CD2015/314[v3] Water Allocation Assignment Procedure
- CD2020/13[v1] Temporary Allocation Assignment (71T71V) – Application checklist

Clause 4.3.7

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: CSR Performance Indicators - Operational Audit -2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- D2019/79545 IPART COAG Targets 2019_ 2020
- CD2015/314[v3] Water Allocation Assignment Procedure
- CD2020/13[v1] Temporary Allocation Assignment (71T71V) – Application checklist

A.4. Clause 5 Organisational systems management

Clause 5.1 Asset Management System

Clause 5.1.1

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: 5.1 – Asset Management System Operational Audit – 2020
- CD2015/436[v8] Strategic Asset Management Plan
- CD2015/488[v4] Asset Management Policy
- D2020/88933 2020 08 05 WNSW organisation-chart
- D2020/108187 Screenshots RACS Minor NC ISO 55001 Surveillance Audit (2020)

- D2020/108184 AMS Continuous Improvement Plan Oct 2020 Extract
- D2020/116432 FRWS team Asset Mgt Awareness training record 20.10.29.CSV

Clause 5.1.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: 5.1 – Asset Management System Operational Audit – 2020
- CD2015/488[v4] Asset Management Policy
- CD2015/436[v8] Strategic Asset Management Plan
- CD2019/45[v2] Asset Class Strategy – Land
- D2019/65995 Water Monitoring Asset Class Standard
- D2019/98797 2019 08 QSEA RES and CAV Assessment Report v1_Final Report_see RACS 96.PDF
- D2020/35936 Asset Management System Awareness eLearning module April 2020
- D2020/116432 Fish River Water Supply team Asset Management Awareness training record, 20.10.29
- D2020/54867 AMS field staff presentation 2020
- D2020/92023 Assets Weekly Newsletter - 20200817.
- D2015/335 Asset Condition Assessment Guidelines.
- CD2015/331[v3] Asset Criticality Assessment Procedure.
- CD2015/335[v2] Asset Condition Assessment Guidelines
- D2019/88150 Annual Asset Performance and Health Report FY18-19.
- D2020/52150 WNSW Management of Change Final Report
- D2020/52152 WNSW Safety in Design of Assets Final Report
- CD2016/174 v3 Safety in Design Procedure
- D2020/63325 Bushfire Recovery Steerco report 2020701
- D2020/71509 Board Committee Water Quality Management System Trend Analysis, August 2020
- D2020/59624 Board Com Assets - 23 September 2020 - Annual System Health Check AMS - Item 6.3
- D2019/92121 WaterNSW Board meeting - 25 Sept 19 Performance Report (Item 6.1)
- D2019/97729 Board Committee on Assets - 25 Sept 19 FY19 Year in Review - Item 6.7
- D2020/66644 Management Committee on Assets - 3.1 - Asset Dashboard Report
- Exercise Deep Purple - 27 Nov 2019 - Incident Debrief
- D2020/108184 AMS Continuous Improvement Plan Oct 2020 Extract
- D2020/108187 Screenshots RACS Minor NC ISO 55001 Surveillance Audit (2020)
- D2020/110779 Assets Full Project Status Reports - Aug 2020
- D2020/110778 MCP Performance Report - August 2020 FINAL
- D2020/1114 Board Committee on Assets - Capability Program - Item 3.1

A.5. Clause 6 Customer and stakeholder relations

Clause 6.1 Customer Supply Agreements- Customers other than Sydney Water

Clause 6.1.1

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: 6.1 Customer supply agreements - Operational Audit - 2020
- D2020/85941 Fish River Minor Consumers List - as at 30 06 2020
- DOC13/26706 Application New or change connection - Fish River WS.
- PL2012/21 Upper Canal - WS Connection Schematic for Private Offtakes.
- CD2019/112 Customer Supply Agreement Procedure.
- CD2020/29 Agreement for Supply of Water Major Customer – Bulk Water.
- D2019/27567 Register of Customer Supply Agreements
- D2019/84749 WS Agreement Minor - Warragamba and Pipeline Offtake
- D2020/77932 20-21-Minor Cons Agreement-Supply Filtered Water-FR - DRAFT
- D2020/77933 20-21-Minor Cons Agreement-Supply Raw Water FR - DRAFT
- D2020/80599 WS Agreement - Wingecarribee Shire Council - 2020

Clause 6.1.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: 6.1 Customer supply agreements - Operational Audit – 2020
- D2020/29619 WNSW Board - 29.04.20 WQ Dashboard Report Mar 20 - Item 3.4
- D2020/31424 Wingecarribee Goulburn Mulwarre WQ Report March 2020
- D2020/67559 SWC Monthly Compliance Report - June 2020
- D2019/93802 WNSW SCC 4 monthly meeting Minutes - 3 Sep 2019
- D2020/11693 SWC Monthly Compliance Report - January 2020
- D2020/28062 Shoalhaven Council Water Quality Report February 2020

Clause 6.1.3

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: 6.1 Customer supply agreements - Operational Audit – 2020
- D2020/80599 WS Agreement - Wingecarribee Shire Council - 2020
- PL2012/21 Upper Canal - WS Connection Schematic for Private Offtakes
- CD2020/29 Agreement for Supply of Water Major Customer – Bulk Water
- D2019/27567 Register of Customer Supply Agreements
- D2019/50111 WNSW-CNL-SP-001 UPNE Upper Can Private Offtake Spec A
- D2019/84749 WS Agreement Minor - Warragamba and Pipeline Offtake
- D2020/77932 20-21-Minor Cons Agreement-Supply Filtered Water-FR - DRAFT
- D2020/77933 20-21-Minor Cons Agreement-Supply Raw Water FR - DRAFT

Clause 6.3 Water metering and monitoring

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Water metering & monitoring Operational Audit – 2020
- Demonstration of WaterNSW's Water Accounting System (WAS)
- Demonstration of WaterNSW's CAIRO system, used by the System Operations group for water balance calculations and to confirm and approve customer water orders
- D2020/89193 Complaints 2019-20
- D2020/89328 s91i Requests - 2019-20
- D2020/89585 OL 6_3 Water Take summary
- CD2015/275[v2] S91i Process customer take when meter equip not op
- CD2015/279[v2] Assessments of Water Usage Procedure
- CD2019/80[v2] Determining Water Take Procedure
- Department of Planning, Industry and Environment's ' Non-urban water metering in NSW – what water users need to know, August 2020' fact sheet
- Natural Resources Access Regulator (NRAR) website:
<https://www.industry.nsw.gov.au/natural-resources-access-regulator>

Clause 6.4 Advance notification of changes to flow release patterns

- EWN e-mail notifications
- CD2018/6 EWN Instructions Murrumbidgee River (Bjuck & Blowering).DOC
- D2018/49422 EWN Instructions Hunter (Lostock Glennies Glenbawn).DOC
- D2019/60929 EWN Training - Dam Safety - Aug 2019.PPTX
- D2018/49422 EWN Instructions Hunter (Lostock Glennies Glenbawn).DOC

Clause 6.6 Customer Advisory Group Charter

Clause 6.6.1

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- CD2015/281[v3] WNSW Customer Advisory Groups Charter
- WaterNSW website - Customer Advisory Groups section
- Lachlan Customer Advisory Group Minutes of Meeting, 25 February 2020
- Lachlan Customer Advisory Group Minutes of Meeting, 29 October 2019
- Murrumbidgee Customer Advisory Group Minutes of Meeting, 26 March 2020
- Coastal-Hunter Customer Advisory Group Minutes of Meeting, 5 November 2019
- Murray-Lower Darling Customer Advisory Group Minutes of Meeting, 25 March 2020
- Greater Sydney Customer Advisory Group Minutes of Meeting, 5 March 2020

Clause 6.6.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- CD2015/281[v3] WNSW Customer Advisory Groups Charter
- D2017/69954 Customer Advisory Groups (CAG) Consolidated Actions Register
- Examples of Customer Advisory Group email call for agenda items and emails of agendas for discussions for each group
- CD2015/281v4 WNSW Customer Advisory Groups Charter, with revisions to address non-compliance under 6.6.2(i) Clause 6.7– Customer Service Charter
- D2020/114449 2020 Response to Clause 6.6.2e.DOCX

Clause 6.7 Customer Advisory Group Charter

Clause 6.7.1 Customer Service Charter

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- D2020/52868 Customer Service Charter, August 2019
- WaterNSW website
- Lachlan Customer Advisory Group Minutes of Meeting, 25 February 2020
- Lachlan Customer Advisory Group Minutes of Meeting, 29 October 2019
- Murrumbidgee Customer Advisory Group Minutes of Meeting, 26 March 2020
- Coastal-Hunter Customer Advisory Group Minutes of Meeting, 5 November 2019
- Murray-Lower Darling Customer Advisory Group Minutes of Meeting, 25 March 2020
- Greater Sydney Customer Advisory Group Minutes of Meeting, 5 March 2020

Clause 6.7.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- D2020/52868 Customer Service Charter, August 2019

Clause 6.8 – Code of practice on payment difficulties

Clause 6.8.2

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- D2020/60054 Training Acknowledgement Complaints and Compliments Procedure
- D2020/91640 Payment Plans January to June 2020
- D2020/91641 Training completion notes

- CD2017/70[V4] Debt Management Code of Practice.
- Summary of reasons for grade

Clause 6.8.3

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- D2020/52868 Customer Service Charter, August 2019
- D2019/27567 Register of Customer Supply Agreements

Clause 6.9 – Internal complaints handling procedure

- WaterNSW responses to 2020 Audit Questionnaire
- WaterNSW PowerPoint presentation: Customer Charters - Operational Audit - 2020
- D2020/89193 Complaints 2019-20
- D2020/91641 Training completion notes
- CD2007/13[v5] Complaints and Compliments Handling Procedure
- D2020/60054 Training Acknowledgement Complaints and Compliments Procedure

Clause 6.17.1 Memorandum of Understanding with Natural Resources Access Regulator

- D2019/34729 NRAR and WaterNSW MOU.pdf
- D2020/84876 WNSW NRAR No1 Meeting outcomes Op Group Meeting 19.07.19.PDF
- D2020/84878 Agenda Inaugural WNSW NRAR No1 Op Group Meeting 19.07.19.MSG
- D2020/84879 Agenda WNSW NRAR No 2 Op Group Meeting 18.10.19.DOCX
- D2020/84881 Terms of Reference - WNSW NRAR Operational Group.PDF
- D2020/84884 WNSW NRAR No 2 Meeting Minutes Op Group Meeting 18.10.19.DOCX
- D2020/84888 Agenda WNSW NRAR No 3 Op Group Meeting 20.02.20.DOCX
- D2020/84889 WNSW NRAR Minutes No 3 Op Group Meeting 20.02.20.DOCX
- D2020/84891 Agenda WNSW NRAR No 4 Op Group Meeting 20.05.20.DOCX
- D2020/84892 Minutes of No 4 Operational Group Meeting 20 May 2020.docx
- D2020/84899 Report to the Strategic Group meeting 31.07.19 – No 1.PDF
- D2020/84900 Action Items from Strategic Group Meeting 31.07.2019.PDF
- D2020/84901 Report to the Strategic Operation Group meeting 24.06.20.DOCX
- D2020/84902 Litigation Work Plan as referred to in agenda item 4.MSG
- D2020/84903 Agenda for Strategic Operations Group meeting 24.06.20.DOCX
- D2020/84906 Protocols - Area 1_Final 220219 TG 060319 Operational Audit.DOCX

- D2020/84907 Protocols - Area 2 final 220219 TG 060319 Operational Audit.DOCX
- D2020/84908 Protocols - Area 3 Final 220219 TG 060319 (004) Op Audit.DOCX
- D2020/84948 Action items from Strategic Op Group meeting 24.06.20.DOCX
- D2020/84981 Terms of Reference - WNSW and NRAR Strategic Group.PDF
- D2020/92434 NRAR-WNSW Op Group Agenda - Meeting 5 - 27 August 2020.DOCX
- D2020/92435 Att4 - Key Contact List - 2020-08-12.DOCX
- D2020/92437 Att2 - 10.08.20 Op Group Action Items - 2020-08-05.XLSX
- D2020/92438 Att3 - NRAR WNSW Strategic Group Meeting 2 - Actions.DOCX
- D2020/105689 High level NRAR rship org chart.pptx
- D2020/105691 FW NRAR-WaterNSW Strategic Meeting Group No 2 - draft Action Items - 20191029.pdf
- D2020/105702 FW NRAR-WaterNSW Strategic Meeting Group No 2 - draft Action Items - 20200629.pdf
- D2020/105710 FW NRAR-WaterNSW Strategic Meeting Group No 2 - draft Action Items - 20200709.pdf
- D2020/105713 FW NRAR-WaterNSW Strategic Meeting Group No 2 - draft Action Items - 20200711.pdf
- D2020/105714 FW Strategic Meeting - draft agenda and report - 2020-06-19.pdf
- D2020/105723 NRAR-WNSW Operations Group Agenda - Meeting 5 - Final draft.docx
- D2020/105726 WaterNSW_NRAR Operational Group Meeting - includes the current protocols for review.msg
- D2020/105732 2020-08-27 - Operating Group Meeting - draft minutes for review.docx
- Letter - NRAR Board Chair corr_raig Knowles to - 17 July 2020.pdf

Recommendation 2018-10: Water Supply clause 3.2.1, Customer Supply Agreements 6.1.1 and 6.8.3

- See evidence for Clause 3.2.1, 6.1.1 and 6.8.3

Recommendation 2018-11: Water Supply Clause 3.2.1; Customer agreements clause 6.1.2

- See evidence for Clause 3.2.1 and 6.1.2

Recommendation 2018-13: Water metering and monitoring clause 6.3.1











- See evidence for Clause 3.2.1 and 6.3.1






Recommendation 2018-20: Roles and Responsibilities with Department of Industry

- D2017/120095 SIGNED - Deed of Business Transfer 13.09.16.PDF
- D2020/64501 Deed of Business Transfer Extension (WNSW Counterpart).PDF
- D2020/83128 DPIE Water - Messages from Jim Bentley.PDF
- D2020/83130 Meeting #3 Interface Issues Analysis.PPTX
- D2020/83131 Water Reform Implementation_Staff VC_7 Feb 2020_Final.PPTX
- D2020/83133 WRI update All Water Staff VC_5 Mar 2020)_for DepSec.PPTX
- D2020/83144 FW RE Operating licence and deed reviews.MSG
- D2020/83146 Email 23 FW WaterNSW Op Licence Deliverability Risks.MSG

E IPART's checks for the 2020 operational audit – WaterNSW

Table E.1 Clauses that IPART checked as a part of the 2020 operational audit

Operating licence clause		Compliance grade
1.5.1	WaterNSW must make this Licence available free of charge on its website for downloading by any person.	
2.3.1	<p>WaterNSW 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; c) <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> d) provide data in relation to the Catchment Health Indicators to the Appointed Auditor, in accordance with the Reporting Manual; e) monitor, record and compile data on the Environmental Indicators relevant to Declared Catchment Areas; and f) report on the Environmental Indicators in accordance with the Reporting Manual. 	
2.4.2	WaterNSW 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.	
3.4.5	WaterNSW must make details of the LWU Information Request Procedure available free of charge on its website for downloading by any person.	
6.6.4	Water NSW must make the Customer Advisory Group Charter available free of charge on its website for downloading by any person.	
6.7.3	Water NSW must make the Customer Service Charter available free of charge on its website for downloading by any person.	
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).	
6.14.3	Water NSW must publish on its website, for downloading by any person, the memorandum of understanding maintained with the Environment Protection Authority under clause 6.14.1(a).	
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.	
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.	

Operating licence clause	Compliance grade
<p>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:</p> <ul style="list-style-type: none"> 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. <p><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></p>	
<p>7.3.1 Water NSW must provide IPART or an Auditor with information relating to the performance of any of WaterNSW'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.</p>	
<p>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 WaterNSW receiving a request from IPART for that information.</p>	
<p>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.</p>	
<p>7.3.4 Where this Licence requires Water NSW to provide information to IPART or an Auditor that is information to which:</p> <ul style="list-style-type: none"> 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, <p>Water NSW must, to the maximum extent permitted by the law, provide that information even if it is confidential.</p>	

Note:  = Compliant and  = Non-Compliant (non-material).

F WaterNSW's statement of compliance

28 August 2020

Statement of compliance 2020

For 2019/2020

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 2019-2020 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 Water NSW Act 2014.
3. Schedule A provides information on all obligations with which WaterNSW did not comply during 2019-2020.
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/ Duly authorised Board Member of WaterNSW.

DATE: 28 August 2020

Signed:

A blue ink signature of Andrew George, consisting of several overlapping loops and a horizontal stroke.

Name: Andrew George

Designation: Acting Chief Executive Officer

DATE: 28 August 2020

Signed:

A blue ink signature of Anne McDonald, written in a cursive style.

Name: Anne McDonald

Designation: Chair of the Board

Schedule A: Non Compliances for WaterNSW

List of clauses breached	Description of non compliance
<p>Clause 4.3.5 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>	<p>The period of non compliance covers July 2019- June 2020.</p> <p>The Service Level Agreement (SLA) for complying Temporary Trades within the state historically only referenced trades in the regulated water system. Historically, groundwater trades have been low in volume and therefore the impact on this SLA was minimal. As a result of the drought, where surface water has not been available, customers have been turning to groundwater to meet their water requirements. As a result of this, demand for groundwater trades have increased significantly.</p> <p>All groundwater trades are required to be sent to the Department of Planning, Industry & Environment – Water (DPIE-W) for hydrological assessment given the sensitive nature of the resource. As a result of this, the timeframes for approval have extended beyond the five days.</p> <p>Regulated water trades have a 97.53% compliance to the SLA whilst groundwater trades have a 43.02% to the SLA. Overall for the year there was a 82.07% compliance to the SLA.</p> <p>As the time taken by DPIE-W is out of the control of WaterNSW, WaterNSW has subsequently implemented a revised approach to measuring and reporting compliance against this obligation.</p> <p>Effective 01 July 2020 WaterNSW will also report the time taken to process a groundwater trade by WaterNSW. Therefore, excluding the time taken by DPIE-W to complete their hydrological assessment and until returned to WaterNSW.</p> <p>Based on this process, overall for the year there was a 94% compliance to the SLA.</p>