

Asset Management System Review Report

AMS review

360890

Prepared for
ERAWA

21 December 2021



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Executive Summary

General

Aqwest ('the licensee') is the trading name of the Bunbury Water Corporation and is a public utility. Aqwest provides water services under the provisions of a Water Services Operating Licence ("WSOL") issued by the ERA. Their WSOL commenced on the 17th January 1997 and authorises Aqwest to provide potable water supply services.

Aqwest provides water to 17,000 properties in the City of Bunbury and surrounding areas. The water is pumped from the Yarragadee Aquifer. They extracted over 6.4 gigalitres of water in FY 2019/20.

Aqwest manages assets with a replacement cost of valued at approximately \$115 million (as 2020) as reported in its 2020 annual report. The distribution network includes 393 km of water mains, seven treatment plants, four reservoirs, and seven booster stations.

Outside of the construction of one new WTP, Ngoora Moolinap, during the review period, there have been no substantial changes to the business or to its assets during the review period.

Asset Management Review Objectives

Cardno was commissioned by the ERA to undertake an asset management system review of Aqwest in accordance with the requirements set out in Section 24 of the *Water Services Act 2012 (WA)*.

The asset management system review has been conducted in order to assess the adequacy and effectiveness of Aqwest's asset management system. The asset management system review covers the period 1 October 2017 to 30 September 2021. The review assessed the performance of Aqwest against the 12 asset management processes and 58 effectiveness criteria set out in the ERA Guidelines.

This report outlines the findings of the review of Aqwest to fulfil the above objectives. The review team conducted the review on 17 November, 18 November and 24 November. On these dates key staff members were interviewed and three sites were visited.

The review was carried out in accordance with the *Audit and Review Guidelines: Water Licences*, as published by the ERA in March 2019.

Asset Management System Review

Findings of the Previous Asset Management System Review

The previous asset management system review did not identify any recommendations.

Findings of the Current Asset Management System Review

The review of the Aqwest asset management system identified that all of asset management processes were rated A1

No recommendations and process improvement opportunities were identified.

Reference (no./year)	Asset Management System Component	Issue	Auditor's recommendation
N/A	N/A	N/A	N/A

Assessment of the Effectiveness of the Asset Management System

Based on the outcomes of the Review, Cardno found that the asset management processes and measures have been well implemented and are being followed. It is Cardno's opinion that the asset management system is operating effectively given the provision of the licensee's potable water supply services.

The ratings awarded reflect that Aqwest generally has well developed asset management practices and moving towards alignment with the international standard for a management system approach to asset management, ISO55001:2014.

Asset Management System Review - Overall Effectiveness

A summary of our assessment of the effectiveness of Aqwest's Asset Management System is provided in Section 4.2. All elements were rated "A" for policy and procedures. All elements were rated "1" for performance.

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1 Introduction

1.1 General

The Economic Regulation Authority (ERA) is responsible for regulating the licensing schemes for water services in Western Australia. The primary objective of regulation is to ensure the provision of a competitive and fair environment, particularly where businesses operate as natural monopolies.

Aqwest is the trading name of the Bunbury Water Corporation and is a public utility. It holds a water services operating licence (WL2, Version 10) which permits it to provide potable water supply services and operate any associated works within the relevant operating areas set out in Plan Number OWR-OA-084/4.

The operating licence was granted by the ERA on 17 January 1997 and last renewed on 19 October 2021. The previous revision of Aqwest's operating licence was carried out on 1 May 2020.

1.2 Overview of the Aqwest's assets

Aqwest provides water to 17,000 properties in the City of Bunbury and surrounding areas. The water is pumped from the Yarragadee Aquifer. They extracted over 6.4 gigalitres of water in FY 2019/20.

Aqwest manages assets with a replacement cost of valued at approximately \$115 million (as 2020) as reported in its 2020 annual report. The distribution network includes 393 km of water mains, seven treatment plants, four reservoirs, and seven booster stations. Table 1-1 and Table 1-2 summarise the value of the assets.

Table 1-1 2020 Summary of non-current assets by fair value

Non-current assets (\$)	
Property, plant and equipment	115,255,093
Intangible assets	227,168
Total non-current assets	115,482,261

Table 1-2 2020 Summary of assets by replacement cost and fair value

	Replacement (\$)	Fair Value (\$)
Land	5,523,500	5,523,500
Buildings	4,147,341	3,199,883
Mains	80,606,978	50,375,867
Treatment plants	24,311,077	11,539,368
Reservoirs	39,296,175	23,805,342
Bores and pumps	7,937,702	5,132,267
Services	383,360	314,939
Plant and equipment	1,969,624	315,545
Motor vehicles	743,893	543,757
Office equipment	357,118	153,314
Tools	22,775	1,185
Work in progress	4,623,948	14,350,126
Property, plant and equipment total	169,923,491	115,255,093

1.3 Purpose of this Report

As a condition of its licence, Aqwest is required to undergo an asset management review that assesses the measures taken by the licensee for the proper management of assets used in the provision and operation of services and, where appropriate, the construction or alteration of relevant assets .

Section 24 of the *Water Services Act 2012* obligates the licensee to provide the Authority with a report by an independent expert acceptable to the Authority as to the effectiveness of the asset management system not less than once in every 24 month period (or such longer period as the Authority allows).

The asset management system review assesses performance against each of the 12 asset management process specified in the *ERA Audit and Review Guidelines: Water Licences*, namely:

- > Asset planning
- > Asset creation/acquisition
- > Asset disposal
- > Environmental analysis
- > Asset operations
- > Asset maintenance
- > Asset management information system
- > Risk management
- > Contingency planning
- > Financial planning
- > Capital expenditure planning
- > Review of the asset management system.

2 Scope of work

2.1 Asset management system review objectives

The overall objectives of this asset management system review were to:

1. Provide the Authority with an independent assessment of the adequacy and effectiveness of the licensee's asset management system in respect of the assets that are delivering the services covered by the licence.
2. Provide recommendations to address asset management deficiencies, or opportunities to improve the standard of asset management, if any.

2.2 Scope of work

The scope of work of this review included:

- > Interviews with key staff members from Aqwest to:
 - assess the effectiveness of the actions taken to address the recommendations included in the previous review report
 - assess performance against each asset management process specified in the *ERA Audit and Review Guidelines: Water Licences (March 2019)* (Audit and Review Guidelines).
- > Review of documents, procedures and policy manuals in relation to financial management and planning, service performance standards, asset management, operations and maintenance functions and reporting
- > Testing and assessment to determine whether the procedures and policies are followed and determine their effectiveness
- > Cardno is used a risk-based approach to plan the review. The scrutiny level (as per ASAE 3000) for the review was a limited assurance engagement
- > Preparation of a review report in accordance with the format specified in the Audit and Review Guidelines.

2.2.1 Areas of special focus

There were no areas of special focus advised by the ERA.

2.3 Methodology and approach

The review was undertaken in accordance with ASAE3000. Our approach to the reporting work was to work closely with the licensee so that comments and challenges could be responded to and addressed before the review report was finalised.

The key areas of our approach included:

- > Preparation of a draft review plan. for comment by Aqwest. The review plan will identify the number and location of meetings, the information to be addressed and the auditor responsible. We aim to design an effective program to make best use of our time and Aqwest. The schedule will developed in coordination with Aqwest to develop an agreed to review schedule.
- > A start-up discussion (by telephone) with Aqwest to:
 - Discuss the main issues to be addressed at review
 - Identify any issues from the previous review
 - Identify any new issues arising from changes to the Licence or operating environment requirements
 - Discuss the review plan
- > Submission of the draft review plan to the ERA for approval
- > A start-up meeting at the beginning of our review work
- > Review work comprising:
 - Interviews with business staff responsible for the review area

- Demonstration of key systems
 - Sample testing for outcome compliance (assessing a sample of documents to confirm procedures / policies are followed and implemented)
 - Review breach register and any non-compliances and assess if any corrective action was undertaken and its effectiveness
 - Site visits to view assets.
- > Preliminary review feedback at the audit close-out meeting
 - > Preparation of a draft report and submission to ERA and Aqwest for review
 - > Preparation of a final report for submission to the ERA.

Our methodology for completing this asset management system review assignment was based on:

- > A risk assessment that determined the priority of each review area, using the risk management framework in Appendix A
- > Our understanding of the licensee's business
- > The experience of our review team in undertaking regulatory reviews which has been gained in several jurisdictions in Australia and in the United Kingdom
- > The outcome of the previous review of the licensee, which was undertaken by Paxon Group for the review period of 1 October 2013 to 30 September 2017 and included in its report of 6 March 2018.

Our review methodology, including the key documents required to be reviewed and the supporting systems that we requested to see demonstrated, is detailed in Table 2-1.

Table 2-1 Asset management review methodology

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Asset planning	<ul style="list-style-type: none"> ▪ Asset management plan covers the processes in this table ▪ Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning ▪ Service levels are defined in the asset management plan ▪ Non-asset options (e.g. demand management) are considered ▪ Lifecycle costs of owning and operating assets are assessed ▪ Funding options are evaluated ▪ Costs are justified and cost drivers ▪ Likelihood and consequences of asset failure are predicted ▪ Asset management plan is regularly reviewed and updated 	<ul style="list-style-type: none"> ▪ Review and assess the adequacy of asset planning processes ▪ Review and assess adequacy of asset management plans ▪ Assess if asset management plans are up- to-date ▪ Assess implementation of asset management plans (status) ▪ Assess whether the asset management plan clearly assigns responsibilities and if these have been applied in practice 	<ul style="list-style-type: none"> ▪ GIS ▪ Asset database / information system 	<ul style="list-style-type: none"> ▪ Overview of planning approach ▪ Population projections ▪ Infrastructure Planning Reports ▪ Example planning reports ▪ Review of asset management plans ▪ Service level agreements
Asset creation and acquisition	<ul style="list-style-type: none"> ▪ Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options ▪ Evaluations include all life-cycle costs ▪ Projects reflect sound engineering and business decisions ▪ Commissioning tests are documented and completed ▪ Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood 	<ul style="list-style-type: none"> ▪ Review adequacy of policies and procedures in relation to asset creation and acquisition ▪ Review examples of creations / acquisitions to check if policies and procedures were followed and check costs against estimates 	<ul style="list-style-type: none"> ▪ Asset database / information system 	<ul style="list-style-type: none"> ▪ Policies and procedures for asset creating and acquisition. Accounting and engineering
Asset disposal	<ul style="list-style-type: none"> ▪ Under-utilised and under-performing assets are identified as part of a regular systematic review process ▪ The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken ▪ Disposal alternatives are evaluated ▪ There is a replacement strategy for assets 	<ul style="list-style-type: none"> ▪ Review adequacy of policies and procedures in relation to asset disposal, asset replacement, identification of under-performing assets ▪ Determine if a review on the usefulness of assets are undertaken ▪ Review examples to check that policies and procedures are being followed 	<ul style="list-style-type: none"> ▪ Asset database / information system 	<ul style="list-style-type: none"> ▪ Policies and procedures for asset disposal. Accounting and engineering

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Environmental analysis	<ul style="list-style-type: none"> ▪ Opportunities and threats in the asset management system environment are assessed ▪ Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved ▪ Compliance with statutory and regulatory requirements ▪ Service standard (customer service levels etc) are measured and achieved. 	<ul style="list-style-type: none"> ▪ Review performance and service standards over audit period ▪ Review performance / identify any breaches and non-compliances and corrective action taken ▪ Review adequacy of reporting and monitoring tools 	<ul style="list-style-type: none"> ▪ Risk management system ▪ Asset management system ▪ Standard reports 	<ul style="list-style-type: none"> ▪ Policies and procedures ▪ Planning reports ▪ Customer service ▪ Compliance reports ▪ Strategic plans (if appropriate)
Asset operations	<ul style="list-style-type: none"> ▪ Operational policies and procedures are documented and linked to service levels required ▪ Risk management is applied to prioritise operations tasks ▪ Assets are documented in an asset register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition ▪ Accounting data is documented for assets ▪ Operational costs are measured and monitored ▪ Staff resources are adequate and staff receive training commensurate with their responsibilities 	<ul style="list-style-type: none"> ▪ Review adequacy of policies and procedures in relation to asset operations ▪ Review staff skills / training and resources available ▪ Check that operations procedures are being followed including testing of the asset register, observation of operational procedures and analysis of costs ▪ Identify any operational events and corrective actions 	<ul style="list-style-type: none"> ▪ Asset information system ▪ SCADA (Supervisory control and data acquisition) 	<ul style="list-style-type: none"> ▪ Asset register ▪ Operations procedures ▪ Operational costs ▪ Daily / weekly / monthly check sheets ▪ Staff skills / resourcing structure
Asset maintenance	<ul style="list-style-type: none"> ▪ Maintenance policies and procedures are documented and linked to service levels required ▪ Regular inspections are undertaken of asset performance and condition ▪ Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule ▪ Failures are analysed and operational / maintenance plans adjusted where necessary ▪ Risk management is applied to prioritise maintenance tasks ▪ Maintenance costs are measured and monitored 	<ul style="list-style-type: none"> ▪ Review adequacy of policies and procedures in relation to asset maintenance / maintenance functions ▪ Check that policies and procedures have been followed including testing of maintenance schedules, analysis of costs, ▪ Review maintenance schedules / plans ▪ Identify any maintenance events and corrective actions 	<ul style="list-style-type: none"> ▪ Asset information system 	<ul style="list-style-type: none"> ▪ Maintenance procedures and schedules ▪ Record of maintenance ▪ Maintenance costs

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Asset Management Information System	<ul style="list-style-type: none"> ▪ Adequate system documentation for users and IT operators ▪ Input controls include suitable verification and validation of data entered into the system ▪ Security access controls appear adequate, such as passwords ▪ Physical security access controls appear adequate ▪ Data backup procedures appear adequate and backups are tested ▪ Computations for licensee performance reporting are accurate ▪ Management reports appear adequate for the licensee to monitor licence obligations ▪ Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation 	<ul style="list-style-type: none"> ▪ Review adequacy of asset information system: ▪ Asset coverage ▪ Functionality ▪ Data coverage ▪ Security ▪ User functionality granted is appropriate ▪ Review outputs / reports generated by systems and assess suitability for reporting against performance standards / licence obligations 	<ul style="list-style-type: none"> ▪ Asset Management Information system 	<ul style="list-style-type: none"> ▪ AMIS manual ▪ AMIS data coverage and quality report ▪ Asset reports
Risk management	<ul style="list-style-type: none"> ▪ Risk management policies and procedures exist and are applied to minimise internal and external risks ▪ Risks are documented in a risk register and treatment plans are implemented and monitored ▪ Probability and consequences of asset failure are regularly assessed 	<ul style="list-style-type: none"> ▪ Review and assess whether the risks that most affect the management and performance of the assets have been identified ▪ Review and assess the adequacy of policies and procedures covering risk management ▪ Review sample of risk mitigation to check policies and procedures are followed ▪ Assess staff understanding of risk management and adequacy of risk management training for staff 	<ul style="list-style-type: none"> ▪ Risk management system 	<ul style="list-style-type: none"> ▪ Corporate Risk management framework ▪ Risk assessment
Contingency planning	<ul style="list-style-type: none"> ▪ Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks 	<ul style="list-style-type: none"> ▪ Review adequacy / relevance and currency of contingency plans ▪ Review if plans have been tested ▪ Identify any improvements that have been actioned as a result of testing of the contingency plans 	<ul style="list-style-type: none"> ▪ Asset management system ▪ Risk management system 	<ul style="list-style-type: none"> ▪ Contingency plans

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Financial planning	<ul style="list-style-type: none"> ▪ The financial plan states the financial objectives and identifies strategies and actions to achieve those ▪ The financial plan identifies the source of funds for capital expenditure and recurrent costs ▪ The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) ▪ The financial plan provides firm predictions on income for the next five years and reasonable predictions beyond this period ▪ The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services ▪ Large variances in actual/budget income and expenses are identified and corrective action taken where necessary 	<ul style="list-style-type: none"> ▪ Review adequacy and effectiveness of financial planning and reporting processes ▪ Review current financial plan and assess whether the process is being followed 	<ul style="list-style-type: none"> ▪ Financial systems 	<ul style="list-style-type: none"> ▪ Financial Plan
Capital expenditure planning	<ul style="list-style-type: none"> ▪ There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates ▪ The capital expenditure plan provides reasons for capital expenditure and timing of expenditure ▪ The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan ▪ There is an adequate process to ensure the capital expenditure plan is regularly updated and implemented 	<ul style="list-style-type: none"> ▪ Review adequacy and effectiveness of capital planning processes through examination of application of process and example documents 	<ul style="list-style-type: none"> ▪ Spreadsheets for capital planning and prioritisation 	<ul style="list-style-type: none"> ▪ Capital expenditure planning process outline ▪ Value engineering documents ▪ Risk management applied to investment planning ▪ Program management documents ▪ Review of capex estimate v outturn
Review of AMS	<ul style="list-style-type: none"> ▪ A review process is in place to ensure the asset management plan and the asset management system described in it remain current ▪ Independent reviews (e.g. internal audit) are performed of the asset management system 	<ul style="list-style-type: none"> ▪ Determine when the asset management plan was last updated and assess whether any significant changes have occurred ▪ Determine whether any independent reviews have been performed. If so, review results and action taken ▪ Consider the need to update the AMP based on the results of this review ▪ Determine when AMS was last reviewed. 	<ul style="list-style-type: none"> ▪ Asset management systems 	<ul style="list-style-type: none"> ▪ Asset management plans

2.4 Time period covered by the review

The asset management system review also covers the period from 1 October 2017 to 30 September 2021.

2.5 Time period of the Cardno review process

The review commenced in October 2021 with preparation of the draft Review Plan.

Interviews with Aqwest's staff were carried out between Wednesday 17 November 2021 and Thursday 18 November 2021 via videoconferencing.

Site visits to operational sites were carried out on Wednesday 24 November 2021. The sites visited were the head office, Roberts reservoir, Ngoora Moolinap WTP and Skewes Street WTP.

2.6 Details of the licensee representatives participating in the review

Details of representatives from the Aqwest who participated in the review process are provided in Table 2-2 below.

Table 2-2 Details of licensee representatives

Name	Role
Gary Hallsworth	Chief Executive Officer
Mark Crabtree	GM Water Services
Cristiano Carvalho	Manager Asset Lifecycle
Pascale Ketelaar	Asset Planning Coordinator
Ron Jeakes	Coordinator Works Management
Tyler Levens	Technology Support Officer
Amanda Caunt	Coordinator Risk and Compliance
Natasha Earle	Finance Analyst

2.7 Details of key documents and other information sources

Details of the key documents provided to us by Aqwest and other information sources that were used during the course of this asset management system review are included in Appendix C.

2.8 Details of reviewers participating in the review and hours utilised

The review team comprised three staff members from Cardno.

Details of their roles and hours utilised in the review process are provided in Table 2-3.

Table 2-3 Details of review team members

Name	Organisation	Role	Summary of Task	Hours Utilised
Patrick Lamb	Cardno	Reviewer/ Project Manager	<ul style="list-style-type: none"> ▪ Project Management ▪ Prepare review plan ▪ Undertake review ▪ Prepare review report 	40
Justin Edwards	Cardno	Reviewer	<ul style="list-style-type: none"> ▪ Undertake review ▪ Prepare review report 	60
Mitchell Wansbrough	Cardno	Site review	<ul style="list-style-type: none"> ▪ Conducted site visit and reviewed asset management policies 	8

3 Licensee's response to previous recommendations

3.1 Previous review ineffective components and recommendations

In the previous asset management review no actions were recommended or suggested to address asset management deficiencies or process improvement opportunities. Details of the previous reviews are in Table 3-1, Table 3-2, and Table 3-3.

Table 3-1 Components and recommendations resolved before end of previous review period

A. Resolved before end of previous review period				
Reference (no./year)	(Asset management effectiveness rating / Asset Management System Component & Criteria / details of the issue)	Auditor's recommendation or action undertaken	Date resolved	Further action required (Yes/No/Not applicable) & details of further action required including current recommendation reference if applicable
None	None	Not applicable	Not applicable	Not applicable

Table 3-2 Components and recommendations resolved during current review period

B. Resolved during current review period				
Reference (no./year)	(Asset management effectiveness rating / Asset Management System Component & Criteria / details of the issue)	Auditor's recommendation or action undertaken	Date resolved	Further action required (Yes/No/Not applicable) & details of further action required including current recommendation reference if applicable
None	None	Not applicable	Not applicable	Not applicable

Table 3-3 Components and recommendations unresolved at the end of current review period

C. Unresolved at end of current review period				
Reference (no./year)	(Asset management effectiveness rating / Asset Management System Component & Criteria / details of the issue)	Auditor's recommendation or action undertaken	Date resolved	Further action required (Yes/No/Not applicable) & details of further action required including current recommendation reference if applicable
None	None	Not applicable	Not applicable	Not applicable

4 Performance summary

4.1 Assessment rating scales

In accordance with the Audit and Review Guidelines, the asset management system effectiveness of Aqwest was assessed using the rating scales in Table 4-1 and Table 4-2.

Table 4-1 Asset management process and policy ratings

Rating	Description	Criteria
A	Adequately defined	<ul style="list-style-type: none"> ▪ Processes and policies are documented. ▪ Processes and policies adequately document the required performance of the assets. ▪ Processes and policies are subject to regular reviews, and updated where necessary. ▪ The asset management information system(s) are adequate in relation to the assets being managed.
B	Requires some improvement	<ul style="list-style-type: none"> ▪ Processes and policies require improvement. ▪ Processes and policies do not adequately document the required performance of the assets. ▪ Reviews of processes and policies are not conducted regularly enough. ▪ The asset management information system(s) requires minor improvements (taking into consideration the assets being managed).
C	Requires significant improvement	<ul style="list-style-type: none"> ▪ Processes and policies are incomplete or require substantial improvement. ▪ Processes and policies do not document the required performance of the assets. ▪ Processes and policies are considerably out of date. ▪ The asset management information system(s) requires substantial improvements (taking into consideration the assets being managed).
D	Inadequate	<ul style="list-style-type: none"> ▪ Processes and policies are not documented. ▪ The asset management information system(s) is not fit for purpose (taking into consideration the assets being managed).

Table 4-2 Asset management performance ratings

Rating	Description	Criteria
1	Performing effectively	<ul style="list-style-type: none"> ▪ The performance of the process meets or exceeds the required levels of performance. ▪ Process effectiveness is regularly assessed, and corrective action taken where necessary.
2	Improvement required	<ul style="list-style-type: none"> ▪ The performance of the process requires some improvement to meet the required level. ▪ Process effectiveness reviews are not performed regularly enough. ▪ Process improvement opportunities are not implemented.
3	Corrective action required	<ul style="list-style-type: none"> ▪ The performance of the process requires substantial improvement to meet the required level. ▪ Process effectiveness reviews are performed irregularly, or not at all. ▪ Recommended process improvements are not implemented
4	Serious action required	<ul style="list-style-type: none"> ▪ Process is not performed, or the performance is so poor the process is considered to be ineffective.

4.2 Asset management review adequacy and effectiveness summary

The asset management system review assessed the adequacy and effectiveness of the asset management system in delivering the services as required under the operating licence.

The review was conducted utilising the asset management adequacy and performance ratings as outlined in the Audit Review Guidelines. A summary of the outcomes of the review is provided in Table 4-3.

Based on our asset management system review observations and findings, we consider that the adequacy and performance of the licensee's system meets a level appropriate for the licensee, given the size, asset base and risks associated with the services that it is licenced to provide. The ratings awarded reflect that Aqwest has well developed asset management policies and processes.

Since the 2017 Review, Aqwest has undertaken significant work to build on its existing asset management system and align the system with the requirements of the international standard for a management system for asset management, ISO55001:2014. The effort invested by Aqwest is reflected in that an A1 process and performance ratings has been assigned to all criteria.

Table 4-3 Asset management review effectiveness summary

Asset management process & effectiveness criteria	Process and policy rating	Performance rating
1. Asset planning	A	1
1.1 Asset management plan covers the processes in this table	A	1
1.2 Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning	A	1
1.3 Service levels are defined in the asset management plan	A	1
1.4 Non-asset options (e.g. demand management) are considered	A	1
1.5 Lifecycle costs of owning and operating assets are assessed	A	1
1.6 Funding options are evaluated	A	1
1.7 Costs are justified and cost drivers identified	A	1
1.8 Likelihood and consequences of asset failure are predicted	A	1
1.9 Asset management plan is regularly reviewed and updated	A	1
2. Asset creation/acquisition	A	1
2.1 Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options	A	1
2.2 Evaluations include all life-cycle costs	A	1
2.3 Projects reflect sound engineering and business decisions	A	1
2.4 Commissioning tests are documented and completed	A	1
2.5 Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	A	1
3. Asset disposal	A	1
3.1 Under-utilised and under-performing assets are identified as part of a regular systematic review process	A	1
3.2 The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	A	1
3.3 Disposal alternatives are evaluated	A	1
3.4 There is a replacement strategy for assets	A	1

Asset management process & effectiveness criteria	Process and policy rating	Performance rating
4. Environmental analysis	A	1
4.1 Opportunities and threats in the system environment are assessed	A	1
4.2 Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	A	1
4.3 Compliance with statutory and regulatory requirements	A	1
4.4 Service standard (customer service levels etc) are measured and achieved.	A	1
5. Asset operations	A	1
5.1 Operational policies and procedures are documented and linked to service levels required	A	1
5.2 Risk management is applied to prioritise operations tasks	A	1
5.3 Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition	A	1
5.4 Accounting data is documented for assets	A	1
5.5 Operational costs are measured and monitored	A	1
5.6 Staff resources are adequate and staff receive training commensurate with their responsibilities	A	1
6. Asset maintenance	A	1
6.1 Maintenance policies and procedures are documented and linked to service levels required	A	1
6.2 Regular inspections are undertaken of asset performance and condition	A	1
6.3 Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	A	1
6.4 Failures are analysed and operational / maintenance plans adjusted where necessary	A	1
6.5 Risk management is applied to prioritise maintenance tasks	A	1
6.6 Maintenance costs are measured and monitored	A	1
7. Asset management information system	A	1
7.1 Adequate system documentation for users and IT operators	A	1
7.2 Input controls include appropriate verification and validation of data entered into the system	A	1
7.3 Security access controls appear adequate, such as passwords	A	1
7.4 Physical security access controls appear adequate	A	1
7.5 Data backup procedures appear adequate and backups are tested	A	1
7.6 Computations for licensee performance reporting are accurate	A	1

Asset management process & effectiveness criteria	Process and policy rating	Performance rating
7.7 Management reports appear adequate for the licensee to monitor licence obligations	A	1
7.8 Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	A	1
8. Risk management	A	1
8.1 Risk management policies and procedures exist and are applied to minimise internal and external risks	A	1
8.2 Risks are documented in a risk register and treatment plans are implemented and monitored	A	1
8.3 Probability and consequence of asset failure are regularly assessed	A	1
9. Contingency planning	A	1
9.1 Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	A	1
10. Financial planning	A	1
10.1 The financial plan states the financial objectives and identifies strategies and actions to achieve those	A	1
10.2 The financial plan identifies the source of funds for capital expenditure and recurrent costs	A	1
10.3 The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	A	1
10.4 The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period	A	1
10.5 The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	A	1
10.6 Large variances in actual / budget income and expenses are identified and corrective action taken where necessary	A	1
11. Capital expenditure planning	A	1
11.1 There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates	A	1
11.2 The capital expenditure plan provides reasons for capital expenditure and timing of expenditure	A	1
11.3 The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	A	1
11.4 There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented	A	1
12. Review of AMS	A	1
12.1 A review process is in place to ensure that the asset management plan and the asset management system described in it remain current	A	1
12.2 Independent reviews (e.g., internal audit) are performed of the asset management system	A	1

5 Asset management system review observations and recommendations

Table 5-1 provides detailed commentary based on the findings observed during the audit process.

Table 5-1 Asset management system review observations

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
1	Asset planning Asset planning strategies focuses on meeting customer needs in the most effective and efficient manner (delivering the right service at the right price).				
1.1	Asset management plan covers the processes in this table	4	<ul style="list-style-type: none"> ▪ Based on our review of Aqwest's asset planning framework documentation, we consider that the asset management planning cover the required processes. ▪ The following documents and systems are the backbone of the entire asset management system for Aqwest: ▪ The Greater Bunbury Urban Water Strategy provides the long-term water supply requirements. It is intended to inform Aqwest's Board and DWER on the long-term 50 year horizon for urban water services planning in the Greater Bunbury area, including potable water, non-potable water, and wastewater. Future demand for existing and new areas of development are assessed against the current and future water source options. This analysis is used to develop Aqwest's ten and fifty year directions for existing and new water source, treatment and distribution assets. Ten year projects and programs, with the timing of the directions, are established in the strategy. ▪ Aqwest's develops an Annual Corporate Plan which sets out the Statement of Corporate Intent (SCI) and includes the budget, the Strategic Asset Management Plan, the Strategic Development Plan (SDP) and the ten year Finance Plan. The corporate plan is informed by the urban water strategy. ▪ The SCI provides clear strategic priorities, sets key financial objectives and outlines performance and reporting details. This includes alignment with Government goals as well setting out the business outcomes and associated KPIs. ▪ Aqwest's Asset Management Policy (Dated 17/12/2020) provides the overall guidance for the strategic management of all its infrastructure assets. ▪ Aqwest has developed a SAMP based on the SCI, SDP and the Greater Bunbury Urban Water Supply Strategy. The SAMP outlines the 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<p>business's vision, principles, mission and asset management objectives to meet the requirements of the asset management policy and the objectives set out in the SCI and SDP.</p> <ul style="list-style-type: none"> ▪ The SDP outlines Aqwest's operating environment, including factors impacting on business activities, as well as the Government expectations, business objectives and approach and summaries of financial information ▪ The asset management objectives set out in the SAMP include a series of specific actions and activities with assigned timeframes in which to be completed. ▪ Aqwest's Asset Management Plan (AMP) builds on the higher-level SAMP information to provide more detailed asset portfolio information, including the state of the assets (descriptions, asset age and health, criticality, asset risks and data sources and data quality), a Lifecycle Plan, that considers the operations, maintenance and renewals costs associated with owning the asset in order to develop 10 year O&M and capital works programs. ▪ Asset Class Management Plans have been developed by Aqwest to provide asset-class specific information and attributes and direction on how these assets are to be managed. Each ACMP outlines the plan to implement asset strategies for operation, maintenance, refurbishment and renewal, and major upgrades. The ACMPs also include the budgets required to manage the specific assets class and meet the expected levels of service and performance. ▪ Aqwest uses Civica's Authority as its Asset Management System (AMS). The AMS is unchanged since the previous AMS review in 2016. ▪ Based on our review of Aqwest's asset planning framework documentation, we consider that the asset management plans cover the required asset management processes. 		
1.2	Planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning	4	<ul style="list-style-type: none"> ▪ Aqwest community and external stakeholders are identified in the SCI. The SCI outlines Government expectations and describes the business activities and approach required to achieve each expectation. ▪ Stakeholders and their requirements are identified through a planning process completed by the Board and the Executive. ▪ Aqwest's key stakeholders include the Minister for Water, the ERA, Department of Health (DoH), Department of Water and Environmental Regulation (DWER), safety regulators, local government, and customers. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Aqwest's groundwater abstraction limits are detailed in its licence issued by DEWR. Water quality requirements are detailed in its Memorandum of Understanding (MoU) with the DoH. ▪ Authority is used by Aqwest as its asset register and for scheduling and recording asset inspections and maintenance. ▪ Aqwest's asset planning process include assessments of future demand, asset development and finance, risk analysis of the likelihood and consequences of asset failure, and prevention. The state of the assets (age, condition, remaining life, operating and maintenance costs and renewals costs are key considerations in the planning process. As noted above, Aqwest develops 10 year O&M and capital expenditure plans. It also has expenditure plans which consider another five years out to 15 years, in order to identify any longer –term expenditure requirements that may be on the horizon so that stakeholders can be made aware of these. ▪ The SDP provide a longer-term plan for the Aqwest's planning activities, with the SCI providing a shorter-term plan. The SAMP outlines how the planning activities are to be implemented, providing the overall strategic direction. This is distilled through the business in order to facilitate investment decisions, the development of expenditure programs and budgeting. ▪ Aqwest considers that previously its high-level corporate planning documents were heavily relied on as the basis for its overall asset planning but as result of more Government expectations, e.g. climate change, it is having to adapt and this is impacting on how it manages the assets. These impacts have resulted in changes to the programs and the strategic priorities to meet changing stakeholder expectations. ▪ Aqwest is aiming for better line of sight between the higher-level corporate documents and the SAMP in order to establish specific asset management objectives, actions and timeframes to ensure that the stakeholder needs are integrated with the asset management planning processes. ▪ Based on our interviews with Aqwest and the documentation it has provided as evidence, we consider that planning processes and objectives reflect the needs of all stakeholders and are integrated with business planning. 		
1.3	Service levels are defined in the asset management plan	4	<ul style="list-style-type: none"> ▪ Aqwest's Level of Service (LoS) focus is set by the Asset Management Objectives (AMOs) which are aligned to Corporate Objectives. ▪ There is line of sight on LoS between Aqwest's key asset planning documentation 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Aqwest's service levels for its customers are defined in the AMP. ▪ Outcome and performance indicators related to meeting Aqwest's overall objectives are defined in the SCI. ▪ Asset management objectives, including measures of success are described in the SAMP ▪ LoS are communicated to customers in the 'Commitment to customers' document. This is able to be downloaded from Aqwest's website, with the current version dated September 2019. This includes Aqwets's LoS related to water supply reliability and quality, as well as those related to service installations and customer service activities. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that service levels are defined in the asset management plan. 		
1.4	Non-asset options (e.g. demand management) are considered	4	<ul style="list-style-type: none"> ▪ As part of the development of the long-list of options, non-asset options are considered. Aqwest provided business cases from within the review period for the Glen Iris WTP and the WRRS = Water Resource Recovery Scheme (WRRS) and we confirmed that non-infrastructure options such as demand side management, leakage management, operational solutions have been considered. ▪ Aqwest's business cases are required to include economic and financial analysis of the different options being considered. A 'Do Nothing' Option forms the base case in all of its business cases. We confirmed in the business cases for the Glen Iris WTP and the WRRS that lifecycle costs of owning and operating assets are assessed as part of Aqwest's asset planning processes for all of the options being considered. The main body of each business case provides the summary assessment, with the detailed financial analysis included in the appendices. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that are adequately considered. 	A	1
1.5	Lifecycle costs of owning and operating assets are assessed	4	<ul style="list-style-type: none"> ▪ Labour costs, materials and purchase order information are recorded in Authority to provide a record for each asset or asset group. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that the lifecycle costs of owning and operating assets are assessed as part of Aqwest's asset planning processes. 	A	1
1.6	Funding options are evaluated	4	<ul style="list-style-type: none"> ▪ Aqwest's capital and operating budgets are largely defined by the State government. Treasury review annual budget and forward programming. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Aqwest's operations are generally funded from cash reserves, operating revenue (via retained profits net of the dividend to the Government) and loans from Treasury. ▪ Asset programs and projects need to be viable in order for any loans to be repaid. As such, there is financial scrutiny by Aqwest during asset planning processes and through the development of capital expenditure proposals for new assets. ▪ Financing of projects and programs is considered in the risk assessments for new works. ▪ Project funding is included in Aqwest's business case template. We confirmed that the Glen Iris and WRRS business cases that were provided included evaluations of the source of funding for each project. The analysis in each business case establishes the internal funding that can be provided by the business and the level of external funding that would be required in order to complete the project. ▪ Aqwest has a directive from the DoH related to providing a fluoridated drinking water supply by 2023. As this is a directive and not a business decision, contributions for funding are expected to be received from Treasury. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that funding options are evaluated as part of Aqwest's asset planning processes. 		
1.7	Costs are justified and cost drivers identified	4	<ul style="list-style-type: none"> ▪ Aqwest has a process and a template for preparing business cases. ▪ The business case template requires information to be provided on: <ul style="list-style-type: none"> – Project background – Strategic justification – Investment proposal – Gap analysis – Options development – Economic and financial analysis of the options ▪ Aqwest's business case template requires strategic justification to be provided for each proposed project/program. This is aligned with the longer-term objectives set out in the SDP and the shorter-term actions included in the SCI. The business cases also outline alignment with Aqwest's key service delivery options and the asset management objectives set out in the SAMP. ▪ Cost drivers are also required to be outlined in each business case. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ This information is also included in the Budget Bid – Asset Investment Plan templates that are prepared for each year’s budget. ▪ We confirmed in the business cases for the Glen Iris WTP and the WRRS that proposed expenditure was justified and cost drivers were identified. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that proposed project and program costs are justified and cost drivers identified as part of Aqwest’s asset planning processes. 		
1.8	Likelihood and consequences of asset failure are predicted	4	<ul style="list-style-type: none"> ▪ Aqwest has developed a robust risk and criticality framework based on asset condition and risk of failure. This sets out the business’s likelihood and consequence ratings. Criticality ratings have been established for Aqwest’s water supply facilities, control assets (e.g. SCADA, pressure monitors, Remote terminal unit (RTUs) and programmable logic controller (PLCs) and non-operational assets (e.g. software, fleet, plant, trailers, etc) ▪ As part of the business’s ISO 55000 accreditation preparation, it has developed a Digital Asset Management Plan that has used a forecasting model with current asset condition information for different classes of assets. Probability of failure curves have been developed in the model to predict when assets may need to be replaced or refurbished. ▪ Condition data has been sourced from Authority. Some assumptions have been used in the modelling, e.g dates of buried assets where this is not able to be confirmed. ▪ The model is stored on an Aqwest SharePoint site and the outputs are generated using PowerBI. ▪ The Probability of Failure (PoF) category descriptions are aligned with Aqwest’s corporate risk framework likelihood categories. A summary of the PoF by facility (e.g. each treatment plant, reservoir, pump station, the overall network assets, and the sampling assets), asset item (e.g. vales, filter, pumps, compressor, etc) is set out in the AMP. ▪ Asset inspection programs are also used to identify failing assets and allows them to be developed as a new investment project. ▪ Recently Aqwest picked up more asset condition information for a water tank from the previous inspection five years ago. The inspection was conducted during a planned shutdown for normal winter maintenance work. Aqwest’s tank inspection procedures are aligned to the WSAA Guidelines to allow the best practice appropriate to Aqwest to be carried 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<p>out. Inspection documentation and the options analysis was viewed as part of the review of the asset planning processes</p> <ul style="list-style-type: none"> ▪ Field staff use Aqwest's Asset Capture Data form at each asset inspection and during routine maintenance work in order to provide up-to-date information on asset condition and any other issues. This information is used to update the information stored in the asset register. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that the likelihood and consequences of asset failure are predicted as part of Aqwest's asset planning processes. 		
1.9	Asset management plan is regularly reviewed and updated	4	<ul style="list-style-type: none"> ▪ Aqwest's AMP includes a section on 'AMP Governance, Improvement and Monitoring'. This sets out the document owner, timeframes for minor and major revisions, associated reporting, AMP maturity targets and document-specific performance measures. ▪ A major revision of the AMP is required every 3 years, with minor revisions carried out annually in line with the budget processes or by exception, as considered necessary. ▪ The AMP performance measures that Aqwest has developed are: <ul style="list-style-type: none"> – Planned vs actual percentage complete of the improvement initiatives. – Regular staff feedback on AMP and whether it is achieving its objectives. – Greater than 20% downward variance in any of the LOS performance measures. – Actual vs Planned Renewal expenditure variation +/- 20%. – Actual vs Preventative Maintenance expenditure variation +/- 20%. – Degree to which the investment forecasts are incorporated into budget forecasts. ▪ The current version of the AMP is dated October 2021 ▪ The SCI and SDP are reviewed and updated annually ▪ The SAMP is currently at draft stage, with the most recent version dated August 2021. Although Aqwest had the elements and components for a SAMP, progress towards ISO 55000 accreditation identified that this information should be brought into a single SAMP document. ▪ Based on our interview with Aqwest and the documentation provided as evidence, we consider that the asset management plan and other key asset planning documentation is regularly reviewed and updated. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
2	Asset creation and acquisition Asset creation/acquisition is the provision or improvement of assets.				
2.1	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset options	4	<ul style="list-style-type: none"> ▪ As described in 1.7 Aqwest have a detailed business case development framework ▪ The business case template is informed by the Western Australia Treasury template ▪ While this is mandatory for projects above \$1 million, they do justify most of their projects ▪ Business cases consider multiple options and estimate lifecycle costs using an NPC (net present cost) ▪ Other nonfinancial criteria is considered ▪ As described above, Non--asset options are considered especially in the Strategically Management Plan ▪ Aqwest provided several business cases there were reviewed that confirm this approach ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they meet the required processes. 	A	1
2.2	Evaluations include all life-cycle costs	4	<ul style="list-style-type: none"> ▪ As noted above business cases consider project, operation and maintenance costs over a period of time for which a NPC is calculated for each option ▪ In the documents evaluated detailed modeling was done over a 10 year horizon and total lifecycle costs were compared over expected life of the assets (30 years for one business case and 80 years for another) ▪ Based on our interviews with Aqwest and the documentation provided as evidence,, we consider that they adequately consider lifecycle costs. 	A	1
2.3	Projects reflect sound engineering and business decisions	4	<ul style="list-style-type: none"> ▪ Aqwest has several procedures in place for ensuring appropriate engineering approvals ▪ There are procedures in place to ensure sound engineering input throughout project initiation, design, procurement, construction and handover ▪ Asset acquisition is supported by business cases ▪ The number of competitive quotes required is clearly documented depending on the scope of the works to be undertaken ▪ Whole of life cost are considered when evaluating asset acquisitions ▪ Aqwest has a documented procurement policy 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> Aqwest considers the whole of water delivery when developing their 30 year capital works program Based on our interviews with Aqwest and the documentation provided as evidence, projects reflect sound engineering and business decisions. 		
2.4	Commissioning tests are documented and completed	4	<ul style="list-style-type: none"> Aqwest requires commissioning and testing to occur before project handover Aqwest has procedures in place for describing what commissioning and testing may be required and how it will be monitored Two commissioning plans were witnessed during the review which outlay the required works for specific projects Commissioning results are documented. We witnessed the commissioning logs for the newly built Ngoora Moolinbab water treatment plant Based on our interviews with Aqwest and the documentation provided as evidence, commissioning tests are documented and completed. 	A	1
2.5	Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	4	<ul style="list-style-type: none"> Legal, environmental and safety obligations are maintained in RiskWizard RiskWizard maintains the register of the individual(s) responsible for each obligation with associated dates and actions required where appropriate Business cases contains a risk assessment section which considers these obligations. During the review we witnessed both the RiskWizard and risk assessment section of business cases. Based on our interviews with Aqwest and the documentation provided as evidence, we consider that legal/environmental/safety obligations are understood and assigned. 	A	1
3	Asset disposal Asset disposal is the consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets.				
3.1	Under-utilised and under-performing assets are identified as part of a regular systematic review process	4	<ul style="list-style-type: none"> Aqwest is continually reviewing its asset base. This includes considerations of decommissioning and disposal Aqwest has policies and procedures for decommissioning and disposal Aqwest has a robust understanding of water production at it each of its WTP. This data is being used to inform the viability of each facility. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Aqwest is currently reviewing the viability of several of its WTP mostly as salt water incursion threatens some of the bores and increases water production costs ▪ Hastie WTP has been identified as likely to be decommissioned. It is costly to run and water sourced from there is likely be subject to customer complaints (as a result of salinity). ▪ Recently it has been on standby and not being used ▪ The new Ngoora Moolinap WTP has increased production capacity and will allow Aqwest to evaluate the viability of some additional WTPs. Additionally, water sourced from the new WTP is more cost efficient to produce than the other WTP's. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately they identify under-utilised and under-performing assets as part of a regular systematic review process. 		
3.2	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	4	<ul style="list-style-type: none"> ▪ As noted above Aqwest has a robust understanding of the operation performance of its assets ▪ Decommissioning is considered when an asset becomes too costly to operate or is unlikely to deliver water that meets its water delivery standards such as water quality ▪ The WTP decommissioning strategy which was witnessed during the review, is an example of critical examination ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately examine under-utilised and under-performing assets and corrective actions or disposals are undertaken. 	A	1
3.3	Disposal alternatives are evaluated	4	<ul style="list-style-type: none"> ▪ As noted in 3.1, Aqwest has policies and procedures for decommissioning and disposal of assets where disposal alternatives are considered ▪ An example of this policy being implemented is during their mains replacement project they considered removing a pipe or leaving the pipe in place and rerouting piping around the abandoned pipe. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately consider disposal alternatives. 	A	1
3.4	There is a replacement strategy for assets	4	<ul style="list-style-type: none"> ▪ Aqwest has asset class management plans ▪ We witnessed the mains and valves asset class management plan 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> The asset class management plan describes the strategy for replacing assets Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they have adequate replacement strategies for assets. 		
4	Environmental analysis Environmental analysis examines the asset management system environment and assesses all external factors affecting the asset management system.				
4.1	Opportunities and threats in the system environment are assessed	4	<ul style="list-style-type: none"> Each year the Board conducts an environmental scan analysis which identifies the major risks to the organisation, ensuring that the strategic objectives and directions are effective in managing these key corporate risk. The significant issues impacting on Aqwest are detailed in the SDP Risks are also maintained in RiskWizard A SWOT analysis, which outlays the process in which the risk analysis was undertaken, was witnessed during the review Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately assess opportunities and threats in the system environment 	A	1
4.2	Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	4	<ul style="list-style-type: none"> Performance standards are documented in the "Commitment to Customers" and published in the corporate plan Aqwest produces a monthly report documenting performance against the performance standards Aqwest produces quarterly water quality reports Consulting hydro-geologists prepare annual reports on groundwater extraction aquifer drawdown and water quality - particularly salinity. Data is obtained for each production bore and the cumulative field totals Performance standards are reported to the Board (monthly) and the ERA (annually). Aqwest completes the annual Urban National Performance Review (although not obligated) which is a benchmarking exercise that documents how the licensee has performed against industry performance standards Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their performance standards (availability of service, capacity, continuity, emergency response, etc.) are adequately measured and achieved 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
4.3	Compliance with statutory and regulatory requirements	4	<ul style="list-style-type: none"> ▪ Statutory and regulatory requirements are maintained in RiskWizard. ▪ An internal audit of RiskWizard was undertaken to ensure that all the statutory and regulatory obligations were documented within Risk Wizard. ▪ The findings of the audit were documented in the Strategic Internal Audit Report which was witnessed during the review ▪ Responsibility and timing of obligation submittals are assigned in Risk Wizard ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately comply with statutory and regulatory requirements. 	A	1
4.4	Service standard (customer service levels etc) are measured and achieved.	4	<ul style="list-style-type: none"> ▪ Service standards are documented in the “Commitment to Customers” ▪ Performance against the service standards are documented in the KPI Performance report which is submitted to the Board ▪ The performance report includes 24 KPIs with details of performance over several months and and a clear indication for which KPIs are on target and which ones are not being met. ▪ Service standards are reported to the Board (monthly) and the ERA (annually). ▪ Aqwest completes the annual Urban National Performance Review (although not obligated) which is a benchmarking exercise that documents how the licensee has performed industry service standards. ▪ During the review multiple performance reports were witnessed and the processes for developing the reports were examined. ▪ The data that is used to populate the reports is mostly collected automatically with some data points requiring manual entry. For example: <ul style="list-style-type: none"> – Aqwest has water quality database that is used to report on water quality KPIs ▪ Customer complaints are documented and when required generate a work order in Authority. The total response times are then documented and maintained in Authority. Monthly reporting then captures complaints and any complaints not resolved within 15 business days. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately measure and achieve service standards. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
5	Asset operations Asset operations is the day-to-day running of assets (where the asset is used for its intended purpose).				
5.1	Operational policies and procedures are documented and linked to service levels required	4	<ul style="list-style-type: none"> ▪ Operation policies and procedures are documented in Promapp and Authority (the policies management program and CMMS) ▪ The procedures are linked to service level requirements <ul style="list-style-type: none"> – We witnessed several procedures. These procedures pertain to maintaining water quality, water security and safety ▪ The operation manuals are primarily organised around the individual treatment plants. ▪ There are also higher level operation policies pertaining to safety and overall network operation ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that operational policies and procedures are adequately documented and linked to service levels required. 	A	1
5.2	Risk management is applied to prioritise operations tasks	4	<ul style="list-style-type: none"> ▪ Operational tasks are managed using Authority where operational tasks are assigned a risk rating ▪ Treatment and compliance tasks are the main priority followed by other cyclical work e.g inspections. ▪ Higher priority tasks are scheduled for the beginning of the week Mon/Tues with the rest of week with cyclical tasks ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that risk management is adequately applied to prioritise operational tasks. 	A	1
5.3	Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition	4	<ul style="list-style-type: none"> ▪ Aqwest's asset register is maintained in Authority with the structure described in the asset management plan ▪ The asset register includes asset ID, asset description, condition, links to workorders, location and other relevant details. ▪ During the review the assets of Robertson WTP were sampled. The asset attributes included: <ul style="list-style-type: none"> – asset details, – date commissioned, – manufacture, – model, – sizes etc, – design life, 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> – costs, – risk and criticality – date of assessment, – condition, – safety and compliance requirements <ul style="list-style-type: none"> ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that assets are documented properly in the asset register. 		
5.4	Accounting data is documented for assets	4	<ul style="list-style-type: none"> ▪ Each asset in the asset register has an assigned cost ▪ During the review costs for WTPs and booster pump stations were witnessed ▪ Aqwest also maintains a valuation of all of their assets for accounting purposes ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider accounting data is adequately documented. 	A	1
5.5	Operational costs are measured and monitored	4	<ul style="list-style-type: none"> ▪ Aqwest has a robust understanding of its operating and production costs ▪ These production costs are used to strategically manage their WTPs ▪ WTPs are typically operated when electricity prices are at their lowest. ▪ Every week a forecasting tool is use to predict anticipated water usage and how the WTP can be used to minimize delivery costs while maintaining water security ▪ Aqwest reports on their operating expenditures monthly and annually ▪ During the review we witnessed the forecasting tool and the monthly and annual operation expenditure reports ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that operational costs are adequately measured and monitored. 	A	1
5.6	Staff resources are adequate and staff receive training commensurate with their responsibilities	4	<ul style="list-style-type: none"> ▪ Aqwest has stated that their staffing is adequate and training has been sufficient ▪ Aqwest has a staffing forecast tool that using the tasks outlined in Authority ▪ Regular reviews of outstanding work orders are undertaken to ensure they are being managed in a reasonable manner ▪ Staffing shortages can also be augmented by outsourcing maintenance task to local plumbing and electrical contractors 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> All operators have Cert 3 and going to Cert 2. Aqwest provides ongoing safety and operational training to its staff During the review we witnessed the training register Based on our review of Aqwest, we consider that staff resources are properly trained and adequate. 		
6	Asset maintenance Asset maintenance is the upkeep of assets.				
6.1	Maintenance policies and procedures are documented and linked to service levels required	4	<ul style="list-style-type: none"> Maintenance policies and procedures are documented in Promapp and Authority (the policies management program and CMMS) The procedures are linked to service level requirements <ul style="list-style-type: none"> We witnessed several procedures. These procedures pertain to maintaining water quality, water security and safety The manuals are primarily organised around the individual treatment plants. There are also higher level policies pertaining to safety and overall network operation Based on our interviews with Aqwest and the documentation provided as evidence, we consider that maintenance policies and procedures are adequately documented and linked to service levels required. 	A	1
6.2	Regular inspections are undertaken of asset performance and condition	4	<ul style="list-style-type: none"> Regular inspections are scheduled in Authority Asset conditions are also monitored and documented when work orders are undertaken During the review several work orders were witness which identified asset conditions Detailed condition assessments are also undertaken periodically outside of the work order system. Based on our interviews with Aqwest and the documentation provided as evidence, we consider that they adequately undertake regular inspections of asset performance and condition 	A	1
6.3	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	4	<ul style="list-style-type: none"> Maintenance plans are maintained in authority Preventative maintenance is scheduled in authority whereas corrective and emergency maintenance is inputted when needed All work orders are signed off by the supervisor when completed to ensure maintenance schedules are maintained 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> Based on our interviews with Aqwest and the documentation provided as evidence, we consider that maintenance plans are adequately documented in completed on schedule. 		
6.4	Failures are analysed and operational / maintenance plans adjusted where necessary	4	<ul style="list-style-type: none"> An asset deficiency register is used to identify systemic issues and corrective issues that may need specific projects or changes to the inspection schedules or more/different maintenance tasks Some assets run to fail as there is redundancy built into the system Documentation from their mains replacement program was witnessed during the review. The mains replacement program involves testing pipes to consider the type of failure and using the results to scope future works to mitigate likely failure locations. Based on our interviews with Aqwest and the documentation provided as evidence, failures are analysed and operational/maintenance plans are adjusted accordingly. 	A	1
6.5	Risk management is applied to prioritise maintenance tasks	4	<ul style="list-style-type: none"> Maintenance tasks are managed using Authority where tasks are assigned a risk rating Treatment and compliance tasks are the main priority followed by other cyclical work e.g inspections, planned maintenance. Higher priority tasks scheduled for the beginning of the week Mon/Tues with the rest of week with cyclical tasks Based on our interviews with Aqwest and the documentation provided as evidence, we consider that risk management is appropriately applied to prioritise maintenance tasks. 	A	1
6.6	Maintenance costs are measured and monitored	4	<ul style="list-style-type: none"> Maintenance costs are recorded. Maintenance task are managed internally and externally Costs associated with external maintenance are supported by work breakdowns that indicate materials and hours required to complete task We witnessed external maintenance provider's plumbers Distribution Works report <ul style="list-style-type: none"> task undertaken are described hours required to do the work documented quantity and costs of materials is documented Annual spending of maintenance activities (for different asset types) is documented in the corporate plan Aqwest assets are either passive or fully automated so labour costs associated with operations are minimal 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Labour costs are primarily associated with maintenance <ul style="list-style-type: none"> – preventative maintenance – inspections – corrective maintenance ▪ Water distribution operations quarterly report discusses budgets of major projects ▪ In ongoing budget development, there is an analysis of maintenance in previous years used to develop the next year's budget ▪ Based on our interviews with Aqwest and the documentation provided as evidence, maintenance costs are measured and monitored adequately. 		
7	Asset management information system An asset management information system is a combination of processes, data and software supporting the asset management functions.				
7.1	Adequate system documentation for users and IT operators	4	<ul style="list-style-type: none"> ▪ IT systems are used to manage <ul style="list-style-type: none"> – computerized management maintenance system (CMMS) – accounts receivable – SCADA – GIS – Document management – Billing – Works management scheduling – Water quality platform for results – Risk management and compliance obligations – Policies and Procedures – Hydraulic model ▪ The procedures and policies around the management of IT systems are documented in the policy and procedures management software (Promapp) ▪ During the review the CMMS procedures were witnessed ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider their IT systems have adequate documentation for users and operators. 	A	1
7.2	Input controls include appropriate verification and validation of data entered into the system	4	<ul style="list-style-type: none"> ▪ Authority levels for IT access are documented ▪ IT access requires passwords 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> Based on our interviews with Aqwest and the documentation provided as evidence, we consider they have adequate input controls for verification and validation of data. 		
7.3	Security access controls appear adequate, such as passwords	4	<ul style="list-style-type: none"> Accessing software requires passwords Most software allows single sign in however some platforms required separate signing in and this was witnessed during audit Security measures were verified during site visit and the review Based on our interviews with Aqwest and the documentation provided as evidence, we consider they have adequate security access controls. 	A	1
7.4	Physical security access controls appear adequate	4	<ul style="list-style-type: none"> IT hardware is secured with limited access IT and high-level management have access Access is controlled using a combination of swipe access (i.e. fob) and physical keys Sites are secured and require keys to enter Security measures were verified during site visit and the review Based on our review of Aqwest's premises and policies, they have adequate physical security. 	A	1
7.5	Data backup procedures appear adequate and backups are tested	4	<ul style="list-style-type: none"> Data is backed up on a daily basis. The data is backed up on a server tape and taken off site each day. Aqwest is moving from physical tapes to a cloud-based back-up The procedure/flowchart for data back-up was provided Based on our interviews with Aqwest and the documentation provided as evidence, their data backup procedures are adequate. 	A	1
7.6	Computations for licensee performance reporting are accurate	4	<ul style="list-style-type: none"> RiskWizard manages obligations and responsibilities for reporting on obligations Compliance obligations are included in the Monthly report and Monthly reporting of dashboard KPIs to the Board Coordinator Risk and Compliance is responsible for auditing the data During the review the coordinator for risk and compliance described the indicators and the quality checks undertaken. This includes tasks such as verifying time-based KPIs to deliver service. Based on our review of Aqwest systems, there computations for licensee performance are reported accurately. 	A	1
7.7	Management reports appear adequate for the licensee to monitor licence obligations	4	<ul style="list-style-type: none"> Aqwest produces several management reports that document performance against budget, delivery KPIs and water quality 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ The reports include a monthly KPI report, monthly report to the board, annual reporting in the corporate plan and quarterly water quality reports ▪ The reports are robust and well understood by the staff ▪ Several reports were witnessed during the review ▪ Based on our interviews with Aqwest and the documentation provided as evidence, management reports appear adequate for the licensee to monitor license obligations. 		
7.8	Adequate measures to protect asset management data from unauthorised access or theft by persons outside the organisation	4	<ul style="list-style-type: none"> ▪ As noted above several layers of security exist both physical and digital which restrict access to IT systems and data ▪ These measures align with industry standards and appear sufficient to prevent theft and unauthorized access ▪ Based on our review of Aqwest's security measures, we consider that they are adequate to protect asset management data from unauthorised access or theft by persons outside the organisation. 	A	1
8	Risk management Risk management involves the identification of risks and their management within an acceptable level of risk.				
8.1	Risk management policies and procedures exist and are applied to minimise internal and external risks	2	<ul style="list-style-type: none"> ▪ Aqwest has a comprehensive Risk Management Framework Plan. This determines how risk management is integrated into the overall management system and includes: <ul style="list-style-type: none"> – The mandate and commitment for Risk Management – Design and implementation of the framework and process – Monitoring, review and continuous improvement of the framework. ▪ For risks associated with its assets, Aqwest has developed an Asset Risk and Criticality Framework, which is aligned to its overall Risk Management Framework. ▪ The Asset Risk and Criticality Framework has been prepared to allow Aqwest to take a consistent approach to assessing the consequences of asset failure (criticality) to enable the risk of failure to be determined. Assigning a risk rating to all its assets allows Aqwest to rationally prioritise its renewals maintenance. ▪ Aqwest has a Risk Management Policy that has an overall objective to "Maintain an effective risk management system". The policy was last reviewed and updated in November 2020. ▪ The Risk Management Policy contains: <ul style="list-style-type: none"> – Risk Management Objectives – Links between the SDP and the Risk Management Policy 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> - Accountabilities and responsibilities for managing risk - The way in which conflicting interests are dealt with - Commitment to make the necessary resources available to assist those accountable and responsible for risk. - The way in which risk management will be measured and reported. - Commitment to review and improve the risk management policy and framework periodically and in response to an event or change in circumstances. ▪ The Risk Management Policy is managed and updated by the Board. It is reviewed by the Board annually. ▪ Aqwest's key risk management procedures are listed in the Risk Management Framework Plan, as: <ul style="list-style-type: none"> - Communicate and Consult Risk Procedure - Establish Risk Context Procedure - Identify Risk Procedure - Analyse Risk Procedure - Evaluate Risk Procedure - Treat Risk Procedure - Monitor and Evaluate Risk Procedure ▪ The Asset Risk and Criticality Framework outlines the procedures for calculating the consequence of failure (criticality) for Aqwest's different asset types. This includes: <ul style="list-style-type: none"> ▪ Water supply facilities: <ul style="list-style-type: none"> - Reservoirs - Pump stations - Treatment Plants - Bores - Mains - Water main fittings and associated assets - Service connections - Service fittings ▪ Control Assets <ul style="list-style-type: none"> - RTU (Remote Terminal Unit) - PLC (Programmable Logic Controller) 		

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> - SCADA - Pressure monitors ▪ Non-operational assets <ul style="list-style-type: none"> - Printing and Imaging - Presentation Equipment - Network Software - Network Hardware - End User Software - Communication - Voice and Data - Fleet (standard) - Fleet (emergency response vehicles) - Plant - Trailers - Small plant ▪ Risk assessments are also carried out as part of the preparation of Business Plans, with the template set up to include the risk information that needs to be provided in the document. ▪ Risk assessments are also completed for renewals planning and are considered in the development of Aqwest's maintenance schedules ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that risk management policies and procedures exist and are applied to minimise internal and external risks. ▪ We note that the Risk Management Framework and the Risk management Policy both specify that they are based on AS/NZS 31000:2009. This version of the Australian Standard has been superseded by ISO 31000:2018. ▪ We note that based on current priorities, Aqwest has made a decision to continue with AS/NZS 3100:2009 ▪ Aqwest will update documents once they make a change to AS/NZS/ISO 31000:2018 		
8.2	Risks are documented in a risk register and treatment plans are implemented and monitored	2	<ul style="list-style-type: none"> ▪ Aqwest uses RiskWizard for its risk register. ▪ Specific risks can be created in the system by anyone within Aqwest. Any new risks or controls that are entered are reviewed by the Co-ordinator Risk, Compliance & Strategy as valid and to ensure that they are not already in the system. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ The Co-ordinator Risk, Compliance & Strategy also meets with business champions regularly on a one-on-one basis to review what work has been assigned to monitor and update risks when new risks have been identified and created in the system. ▪ The Risk Register output report as viewed during the review. We also viewed examples of recorded risks and they appear in the RiskWizard ▪ The Risk Register Report provides a summary for each risk, including the risk title the source of the risk and the impacted areas, the overall risk owner, the absolute and managed risk scores and the residual risk rating, the list of controls and the effectiveness score for the controls. ▪ Each individual risk is assigned an owner who has overall responsibility for managing the controls. Individual control items can be assigned to specific staff within the business to manage. The frequency of the each risk control, the performance measure for assessing the effectiveness of the control and the effectiveness score are also recorded in the register. ▪ RiskWizard is used to monitor actions associated with managing and reporting Aqwest's risks. ▪ Specific processes and procedures related to controls to manage Aqwest's risks are stored in the ProMapps system. We reviewed a sample of these treatment plan processes and procedures and confirmed that they include a process to record the associated process outputs/reports back into RiskWizard to close the loop and allow the effectiveness of the controls to be monitored, assessed and updated, as required. ▪ Based on our interviews with Aqwest and the evidence views and provided, we consider that Aqwest's risks are documented in a risk register and treatment plans are implemented and monitored 		
8.3	Probability and consequence of asset failure are regularly assessed	2	<ul style="list-style-type: none"> ▪ As noted previously, Aqwest has a Risk and Criticality Framework that it uses to provide a consistent approach for assessing the consequence of failure and to determine the risk of failure. ▪ Condition data has been sourced from Authority. Some assumptions have been used in the modelling, e.g. dates of buried assets where this is not able to be confirmed. ▪ Asset risks have been captured at the Unit (asset component) level and rolled up and averaged through the location hierarchy. ▪ Criticality ratings have been established for Aqwest's water supply facilities, control assets (e.g. SCADA, pressure monitors, Remote terminal unit (RTUs) and programmable logic controller (PLCs) and non-operational assets (e.g. software, fleet, plant, trailers, etc) 	A	1

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			<ul style="list-style-type: none"> ▪ Probability of failure curves have been developed in a forecasting model to predict when assets may need to be replaced or refurbished. ▪ The Probability of Failure (PoF) category descriptions are aligned with Aqwest's corporate risk framework likelihood categories. A summary of the PoF by facility (e.g. each treatment plant, reservoir, pump station, the overall network assets, and the sampling assets), asset item (e.g. vales, filter, pumps, compressor, etc) is set out in the AMP. ▪ Asset inspection programs are also used to identify failing assets and allows them to be developed as a new investment project. ▪ Field staff use Aqwest's Asset Capture Data form at each asset inspection and during routine maintenance work in order to provide up-to-date information on asset condition and any other issues. This information is used to update the information stored in the asset register. ▪ A monthly Risk Management and Performance Report is submitted to the Board. ▪ This includes providing updates on: <ul style="list-style-type: none"> – Key threats that may prevent Aqwest from achieving its goals, the current status of the risk and the actions/controls in place to treat the risk. This includes reporting on the status of risks currently threatening objectives and the status of risk areas with low tolerance for failure. – Risks outside tolerance levels, with performance against the target and status comment reported for each measure. – Supplementary details of risks with extreme ratings, critical and highly important obligation with no risk assessments and incidents with an impact of moderate or higher in the past 12 months are also attached to the monthly Risk Management and Performance Reports. ▪ Examples of these monthly reports were provided as evidence for this review and we confirmed that these show that risk management is reported up to the Board on a monthly basis. ▪ A Strategic Risk Management Workshop is also conducted by the Executive Management team to assess the risks to the Board annually. An environmental scan is completed to assess the current operating environment, any new risks that have been identified and what controls and mitigation need to be developed. This is provide to the Board to decide the strategies to be applied. ▪ The Strategic Risk Management Workshop presentation was observed during the review. We confirmed that this included details on the SWOT analysis, the strategic planning process, risk reviews completed, 		

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			<p>outcomes from the risk evaluations, what is required from the Board to address the risks and areas of weakness/threats.</p> <ul style="list-style-type: none"> Aqwest's Audit & Risk Committee has responsibility for ensuring the risk management system is effective and for communicating the Committee's resolutions to the Board for consideration and approval as applicable. Based on our interviews with Aqwest and the documentation provided as evidence, we consider that the probability and consequence of asset failure are regularly assessed. 		
9	Contingency planning Contingency plans document the steps to deal with the unexpected failure of an asset.				
9.1	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	4	<ul style="list-style-type: none"> Aqwest's Risk Management Policy states that "As part of the Risk Management Framework, Aqwest will maintain a comprehensive Business Continuity Plan." Aqwest has developed a comprehensive set of forms, templates, tools and contingency plans to deal with the unexpected failure of an asset. SCADA is able to be used to operate Aqwest's water supply system remotely. Standby diesel generators are set-up and ready to be used at two of Aqwest's sites to manage the impacts of a power outage and continue to supply water. <p>Business continuity processes</p> <ul style="list-style-type: none"> Aqwest's overall process for business continuity is set out on ProMapps. The process is: <ul style="list-style-type: none"> Customise AS 22301:2020 Business continuity management systems to Aqwest Assess disruption risks Determine business impact of incident Manage a Business Continuity Incident Manage a Business Continuity Incident Recovery There is a detailed process and procedure for Managing a Business Continuity Incident. The responsibility for each stage of the process is assigned to specific staff or roles within the Business's Incident Management Team. 	A	1

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			<ul style="list-style-type: none"> ▪ ProMapps includes links to all the forms and templates, strategies and plans and tools used to manage an incident. This includes documents such as: <ul style="list-style-type: none"> – Incident Criticality Assessment Form – Incident Management Team Meeting Agenda Template – Aqwest’s business continuity plans – Staff and Board Emergency Contact Guide – External Contact Details for Emergencies Guide – Emergency Communication Channels Guide. – Emergency Media Statements and Letters Guide ▪ Aqwest also has a detailed process and procedure to Manage a Business Continuity Incident Recovery. In addition to assigning general business function roles, it also assigns the responsibility to review and close the incident to the General Manager Water Services. ▪ The process for the review and closing of an incident includes: <ul style="list-style-type: none"> – Ensuring all meeting minutes and other documents are stored in the incident file in HPRM. – Ensuring all actions are recorded and updated in Riskwizard. – Debriefing the Incident Managers and completing the Incident Review Form – Providing an incident debrief overview to the relevant committees and Board as required. – Updating and closing out the incident in RiskWizard. <p>Contingency Plans</p> <ul style="list-style-type: none"> ▪ Aqwest has developed a series of contingency plans to manage different business continuity issues that may impact on the normal operations of the business. These are: <ul style="list-style-type: none"> – Water Services Centre Emergency Plan – Information Systems Disaster Recovery Plan – Cyber Incident Response Plan – Pandemic Influenza Plan – Records Management Disaster Plan – Chlorine Emergency Management Plan – Operation Security Management Plan 		

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Each Plan sets out in detail the management responsibilities, response procedures, advice to relevant authorities, stakeholders and customers, and the subsequent repair and recovery actions <p>Testing of Contingency Plans</p> <ul style="list-style-type: none"> ▪ Aqwest activated its Pandemic Influenza Plan in 2020 due to the threat of COVID-19. The Plan was used to test the business’s work from home and communications protocols so that when a lockdown was announced, the business was ready to operate as normal without any issue acting on its everyday business functions. ▪ Aqwest also has a general business continuity procedure that is referred to as Plan Zero. This is initiated regularly in order to prepare for incidents such as winter storms. If storms warnings are received, the Plan Zero Plan is instigated. This is used to ensure that the business is still able to operate and includes actions such as making sure mobile phones are charged, vehicles have fuel, stores have spares in stock, and staff are prepared to be available if required. ▪ Examples of the Plan Zero preparatory emails to staff during 2020 were observed during the review. In addition, the Plan’s process and tables of actions, response times, responsibilities, and notes to confirm that actions had been completed were viewed. ▪ Under the requirements of its MoU with the Department of Health, Aqwest has to complete a water supply incident mock exercise annually. ▪ The most recent water quality exercise was carried out in April 2021. Aqwest provided the exercise scenario presentation and a copy of the report summarizing the findings from the scenario. ▪ Aqwest conducted a two day desktop ICT incident exercise in August 2021. This was planned and run by an external provider. The presentation, with the aims, objectives, agendas and different test scenarios was viewed during the review. ▪ The exercise report was provided and we confirmed that it included details of the attendees, a timeline of the events, key insights and a sign-off to conclude the exercise. The timeline of events for the ICT incident exercise reported the date/time for each action and comments on the processes that would be carried out to address each issue/required action. ▪ We confirmed that following tests /exercise scenarios were undertaken during the review period: <ul style="list-style-type: none"> – Water Quality – 2021, 2019, 2017 		

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> – Business Continuity – 2018, 2017 – ICT – 2021 ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their contingency plans are documented, understood and tested appropriately. 		
10	Financial planning				
	Financial brings together the financial elements of the service delivery to ensure its financial viability over the long term.				
10.1	The financial plan states the financial objectives and identifies strategies and actions to achieve those	4	<ul style="list-style-type: none"> ▪ Aqwest's approach to financial planning is largely unchanged since the 2016 review. Financial planning is subject to numerous regulatory requirements, including the <i>Corporation Act 2001</i>, <i>AASB Australian Accounting Standards</i> and the <i>Water Corporations Act 1995</i>. ▪ The Strategic Development Plan (SDP), the Statement of Corporate Intent (SCI) and the Strategic Asset Plan are Aqwest's key documents related to its financial planning. ▪ The SDP provides a five year outlook and includes information on key emerging issues, financial objectives and operational targets, and an overview of how the Aqwest will achieve the objectives and targets. ▪ We reviewed Aqwest's, five and ten year financial plans and confirmed that they: <ul style="list-style-type: none"> – State the financial objectives and identifies strategies and actions to achieve those – Identifies the source of funds for capital expenditure and recurrent costs – Provide projections of operating statements (profit and loss) and statement of financial position (balance sheets) – Provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period – Provide for the operations and maintenance, administration and capital expenditure requirements of the services. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their financial plan adequately states the financial objectives and identifies strategies and actions to achieve those. 	A	1
10.2	The financial plan identifies the source of funds for capital expenditure and recurrent costs	4	<ul style="list-style-type: none"> ▪ Aqwest is part of the State Budget process. The Government approves the Business's capital program, fees and charges, and operations and strategic asset plans rating subsidies. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Aqwest inputs its entire budget (including both operating and capital forecasts) into the Department of Treasury budget system. ▪ The one year SCI includes projected financial forecasts for the current year. The Asset Investment Program for proposed capital expenditure is also summarised for the next four year period by asset category. Required borrowings and payments to and from the Government are summarised. A more detailed breakdown of the annual budget is also included which provides the income statement, balance sheet, and cashflow. statement. The Income Statement is reported under each General Ledger code for the different activities carried out by Aqwest. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their financial plan adequately identifies the source of funds for capital expenditure and recurrent costs. 		
10.3	The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets)	4	<ul style="list-style-type: none"> ▪ Aqwest's Financial Management Manual includes a section related to Financial Reporting. This sets out the reports are required to be prepared and submitted to different stakeholders. ▪ A number of different financial reports are provided to the Board. These include: <ul style="list-style-type: none"> – Monthly financial statements to be ratified at the monthly Board meeting. – Quarterly budget reviews reviewed by the Audit Committee and ratified by the Board. – Monthly Operational Performance Indicators (including financial performance indicators) noted by the Board. – Other ad hoc reports as requested. ▪ Quarterly reports on financial performance are also submitted to the Minister in accordance with the <i>Water Corporations Act 1995</i>. ▪ The Annual Financial Report is coordinated and delivered by Aqwest's Management Accountant in accordance with the requirements of the <i>Water Corporations Act 1995</i>. Relevant sections in the Act are listed in the Financial Management Manual. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their financial plan adequately provides projections of operating statements and statement of financial position. 	A	1
10.4	The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period	4	<ul style="list-style-type: none"> ▪ As noted above, the SAP, SDP and SCI provide 10 year, five year and one year financial forecasts. ▪ As noted above, the SDP provides a five year financial plan. The Plan includes the key financial assumptions over the period (e.g. tariff 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<p>increases, forecast growth and demand, CPI, borrowing rates, tax rates, dividend rates, wage and superannuation escalators).</p> <ul style="list-style-type: none"> ▪ The SDP includes a five year summary of the capital investment program, projected income statement, projected statement of financial position, and the projected cash flow statement for the five year period. ▪ Aqwest combines the SCI, SDP, SAP and a ten year financial plan to form its annual Corporate Plan. ▪ The ten year Finance Plan includes an Income Statement, Statement of Financial Position, and a detailed Income Statement for the forecast costs under each General Ledger group and individual cost centre for the revenue and cost estimates. The ten year Asset Investment Plan is also included in the Plan. ▪ Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their financial plan adequately provides firm projections of income for the next five years and reasonable indicative predictions beyond this. 		
10.5	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services	4	<ul style="list-style-type: none"> ▪ Aqwest has an annual budgeting process that starts every year in August/September and is coordinated by the Management Accountant. ▪ The budgeting process provides alignment between the objectives and day-to-day financial management. ▪ Each team within Aqwest has its own separate General Ledger that the team leaders use to prepare their budget bids against. Team leaders identify the costs that are needed and have to provide expenditure justification and any reasons for year-to-year variances. ▪ The operating and capital expenditure budgets are prepared using the same processes ▪ Workshops are held with all stakeholders to discuss forecasts, capital projects, escalation factors, demand and all other relevant issues. ▪ The budget goes through a number of review and approval processes before being presented to the Board for endorsement and then being incorporated into the Strategic Development Plan for submission to the Government. ▪ The review and approval processes include assessing the revenue requirements and proposed changes in tariffs and charges can be taken into account. ▪ The Aqwest Board approves the final budget. The Minister also approves the budget through the Government budget process. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> Additionally, Aqwest's Board approves both the SCI and SDP before submission to the Minister. The SCI and SDP are also sent to the Department of Treasury as part of the budget process and require Treasury approval. Aqwest is also required to send a Board and Minister approved SAP to the Department of Treasury as part of its annual budget process. The SAP lists the highest priority capital expenditure projects and programs, with indicative costs and estimated timeframes. The Investment Plan included in the SAP also forecasts out to 15 years. Although this is not required by Treasury, this provides a view of the longer term for any large investments outside the 10 year timeframe in order to show that they are on the horizon. Based on our interviews with Aqwest and the documentation provided as evidence, we consider that their financial plan adequately provides for operation and maintenance, administration and capital expenditure requirements. 		
10.6	Large variances in actual / budget income and expenses are identified and corrective action taken where necessary	4	<ul style="list-style-type: none"> Variances in operating and capital expenditure are identified and reported in the monthly budget reviews submitted to the Board. The detailed data is recorded in a live document that links to the budget data included in the SCI. Forecasts until the end of the current Financial Year are included, with notes to explain any large variations against budget. Examples of variance tracking and analysis included in the monthly reports were observed during our review. Based on our interviews with Aqwest and the documentation evidenced, we consider that large variances in actual / budget income and expenses are adequately identified and corrective action taken where necessary 	A	1
11	Capital expenditure planning The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure for these works over the next five or more years. Since capital investments tend to be large and lumpy, projections would normally be expected to cover at least 10 years, preferably longer. Projections over the next five years would usually be based on firm estimates.				
11.1	There is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates	4	<ul style="list-style-type: none"> Aqwest combines the SCI, SDP, SAP and a ten year financial plan to form its annual Corporate Plan. The Strategic Asset Plan (SAP) forecasts the capital expenditure plan out to a 15 year horizon. The SCI sets out the asset investment program for the year The SDP includes a five year summary of the capital investment program 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ The SAP lists the highest priority capital expenditure projects and programs, with indicative costs and estimated timeframes. As noted previously, the Investment Plan included in the SAP also forecasts out to 15 years. ▪ The ten year Finance Plan included in the annual Corporate Plan also includes a ten year Asset Investment Plan. ▪ The budget bid process (described in 11.2) notes responsibilities and dates for works to be undertaken. ▪ We reviewed Aqwest's financial plans and confirmed that there is a capital expenditure plan covering works to be undertaken, actions proposed, responsibilities and dates 		
11.2	The capital expenditure plan provides reasons for capital expenditure and timing of expenditure	4	<ul style="list-style-type: none"> ▪ Aqwest has a long-term strategic planning process that considers asset management planning, growth and renewals, taking into account the condition and performance of assets to develop renewals planning programs. ▪ Aqwest's has a Govern Asset Investment process and procedure. This includes steps for: <ul style="list-style-type: none"> – Identifying investment drivers – Setting up the process (e.g. schedules, templates and record keeping) and engaging with stakeholders – Preparing the Draft Budget Bid for a project or program that has been identified – Reviewing all Budget Bids – Finalising Budget Bids and prioritisation – Approval of Budget Bids – Final issue of approved Budget Bids to Finance for processing ▪ Aqwest uses its Budget Bids process for proposed capital expenditure planning, as well as for operating costs forecasts. This process is described in more detail in the Financial Planning section of this table. ▪ The Budget Bids template was observed during the review and we confirmed that it includes: <ul style="list-style-type: none"> – A new General Ledger account number to allow the proposal to be tracked – Previous year budgets for multi-year programs or projects across more than one year – Nature of investment 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> – Options analysis – Shortlisted and recommended options – Overall risk rating – Risks associated with the project/program not proceeding – Project drivers – Stakeholder analysis – Responsibilities – Sustainability analysis – Risk and criticality assessment – Definition of the preliminary scope of works – Procurement method – Cost estimate with accuracy estimated – Strategic drivers of the investment – Control sheet of previous years for revision history over different years ▪ Capital expenditure projects and programs are also developed in accordance with Aqwest's Asset Risk and Criticality Framework. ▪ Where required Aqwest engages external consultant to provide planning reports and asset assessments to support the proposed expenditure. ▪ Aqwest uses its Business Case process for proposed projects with estimated costs over \$1M to assess project options. Details of the planning process are described more fully under the Asset Planning element of this table. ▪ In addition, the Asset Creation and Acquisition section of this table sets out Aqwest's procedure for identifying and evaluating capital expenditure projects. ▪ We reviewed Aqwest's financial plans and confirmed that the capital expenditure plan provides reasons for capital expenditure and timing of expenditure 		
11.3	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan	4	<ul style="list-style-type: none"> ▪ The Budget Bids are prepared with strategic and project driver information in order to provide justification for the expenditure. This includes when an asset is in poor condition or because the asset is at the end of its useful life and needs to be replaced. ▪ Recent examples of Budget Bids for capital expenditure projects were provided and we confirmed that business decisions are being made 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<p>based on asset condition and performance, as well as taking into account the risk of failure and the asset criticality rating.</p> <ul style="list-style-type: none"> We reviewed Aqwest's financial plans and confirmed that the capital expenditure plan is consistent with the asset life and condition identified in the asset management plan. 		
11.4	There is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented	4	<ul style="list-style-type: none"> The <i>Water Corporations Act 1995</i> requires Aqwest to prepare a Strategic Development Plan (SDP) each year. The Plan is required to set out economic and financial objectives and operational targets and how those objectives and targets will be achieved. The Act also requires that the SDP is to include capital expenditure and cover a five year period. The SDP also identifies issues to be addressed in the form of drivers for expenditure and organisational risks. Therefore, the capital expenditure forecast included in the SDP each year ensures that there is a capital expenditure plan for a rolling five year period. The Asset Investment Program is approved by the Board each year and progress against the program is reported monthly. A budget review is completed every quarter and reported to the Board to show variance on capex projects and updated project estimates We reviewed Aqwest's financial plans and confirmed that there is an adequate process to ensure that the capital expenditure plan is regularly updated and implemented. 	A	1
12	Review of AMS				
	The asset management system is regularly reviewed and updated.				
12.1	A review process is in place to ensure that the asset management plan and the asset management system described in it remain current	4	<ul style="list-style-type: none"> Aqwest's AMP includes a section on 'AMP Governance, Improvement and Monitoring'. This sets out the document owner, timeframes for minor and major revisions, associated reporting, AMP maturity targets and document-specific performance measures. A major revision of the AMP is required every 3 years, with minor revisions carried out annually in line with the budget processes or by exception, as considered necessary. The requirement to review the AMP and other key documents is set up in RiskWizard. Aqwest has set-up RiskWizard to include all of the ERA's individual asset management review adequacy and effectiveness criteria, including those related to the review of the AMS. Each obligation in RiskWizard is created to be assigned to the responsible staff, with due dates, and actions to be completed. Actions can be allocated to other staff by the obligation owner 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ The AMP performance measures that Aqwest has developed are: <ul style="list-style-type: none"> – Planned vs actual percentage complete of the improvement initiatives. – Regular staff feedback on AMP and whether it is achieving its objectives. – Greater than 20% downward variance in any of the LOS performance measures. – Actual vs Planned Renewal expenditure variation +/- 20%. – Actual vs Preventative Maintenance expenditure variation +/- 20%. – Degree to which the investment forecasts are incorporated into budget forecasts. ▪ The current version of the AMP is dated October 2021. The review process for the AMP was deferred from the original due date in order to be able to take into account any information that came out of the work Aqwest has been carrying out in progressing towards ISO 55000 accreditation. ▪ The SCI and SDP are reviewed and updated annually, with the capital expenditure and financial plans prepared annually for budget purposes. ▪ The SAMP is currently at draft stage, with the most recent version dated August 2021. Although Aqwest had the elements and components for a SAMP, progress towards ISO 55000 accreditation identified that this information should be brought into a single SAMP document. ▪ We consider that Aqwest's review process meets the requirement that a review process is in place to keep the asset management plan and the asset management system current. There is sufficient evidence to conclude that Aqwest has reviewed and updated its asset management plans during the review period. 		
12.2	Independent reviews (e.g., internal audit) are performed of the asset management system	4	<ul style="list-style-type: none"> ▪ During the review period, Aqwest has had independent reviews of its AMS performed as part of its work towards looking to be ISO 55000 accreditation. ▪ Aqwest conducted a self-assessment maturity and gap assessment of its AMS in January 2020. ▪ SAI Global were engaged to carry out an assessment for Stage 1 of the accreditation in December 2020. As there were a number of areas that required more work, SAI Global recommended that Aqwest should delay the Stage 2 certification. As a result, Aqwest developed its Asset Management Improvement Plan, with an aim to progress to Stage 2 certification in September 2022. 	A	1

Ref No.	Asset management process or effectiveness criterion	Review priority	Observations & Recommendations	Process and policy rating	Performance rating
			<ul style="list-style-type: none"> ▪ Aqwest's current Asset Management Improvement Plan maps specific projects included in its asset management framework documentation to the IAM subjects and provides descriptions for each project, the required project outcomes, driver, work stream, alignment to maturity ratings and a prioritisation score. A schedule has also been developed that takes into account other projects that are key dependents on a particular project. The current schedule goes out to the end of FY23. ▪ As part of its ERA operating licence obligations, an operating licence audit was completed by Paxon earlier in 2021. ▪ Based on our interviews with Aqwest staff and the supporting evidence provided, we consider that independent reviews are performed of the asset management system. 		

6 Recommendations

The recommendations arising from this asset management system adequacy and effectiveness review are detailed in Table 6-1.

Table 6-1 Table of current review asset system deficiencies/recommendations

A. Resolved during current audit period			
Reference / Recommendation reference from previous review (if applicable)	Process and policy deficiency / Performance deficiency (Rating / Asset management process & effectiveness criterion / Details of deficiency)	Date resolved & action taken by the licensee	Auditor's Comments
Not applicable	Not applicable	Not applicable	Not applicable

B. Unresolved at end of current Audit period			
Recommendation reference (no./year)	Process and policy deficiency / Performance deficiency (Rating / Reference number, Asset management process & effectiveness criterion / Details of deficiency)	Auditor's recommendation	Action taken by the licensee by end of review period
Not applicable	Not applicable	Not applicable	Not applicable

7 Confirmation of the asset management system review

I confirm that the review carried out for Aqwest between 17 November 2021 and 24 November 2021 and recorded in this report is an accurate presentation of our findings and opinions.

J Edwards

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20 December 2021

APPENDIX

A

RISK MANAGEMENT FRAMEWORK

Overview

The ERA's risk-based approach to the audits and reviews is set out in the *Audit and Review Guidelines – Water Licences* (March 2019).

The first stage of an audit or review is to conduct a preliminary assessment of the risk the licensee has not complied with one or more licence obligations or has not managed its assets effectively (preliminary risk assessment). The purpose of the assessment is to identify higher risk areas and focus the audit or review accordingly.

Our initial risk assessment has been documented in the audit/review plan that was prepared at the start of the project. The audit/review plan was approved by the ERA. During the fieldwork phase of the audit or review, the initial risk assessment has been reviewed and, if needed, amended to reflect the audit or review findings.

Identifying the risks

For asset management review, we identified the risks that may affect the effectiveness of the licensee's asset management processes.

We identified the risks based on our knowledge and understanding of the licensee's business and the relevant regulatory framework.

Risk analysis

We have analysed the compliance risks using the following two-stage process, as set out in the ERA's *Audit and Review Guidelines – Water Licences* (March 2019):

1. Identify the consequences and likelihood of the inherent risks to give an overall inherent risk rating.
2. Identify and assess the strength of the existing internal controls mitigating the inherent risks.

An 'inherent risk' is the risk of an event occurring if there were no controls in place.

To calculate the 'inherent risk' for a licence obligation, we have identified the likelihood and consequences of the risk occurring using the classifications set out in the ERA's *Audit and Review Guidelines – Water Licences* (March 2019) for licence obligations included in the ERA's *Water Compliance Reporting Manual* (October 2021) for the obligations relevant to the licensee.

The likelihood and consequence ratings are outlined in the following sections.

Likelihood Ratings

The likelihood rating scale is described below.

	Level	Description
A	Likely	Non-compliance is expected to occur at least once or twice a year
B	Probable	Non-compliance is expected to occur once every three years
C	Unlikely	Non-compliance is expected to occur once every 10 years or longer

Inherent Risk Assessment Rating and Description

The inherent risk rating is based on the combined consequence and likelihood rating. The inherent risk assessment rating scale and descriptions are outlined below.

Likelihood	Consequence		
	Minor	Moderate	Major
Likely	Medium	High	High
Probable	Low	Medium	High
Unlikely	Low	Medium	High

Level	Description
High	Likely to cause major damage, disruption or breach of licence obligations
Medium	Unlikely to cause major damage but may threaten the efficiency and effectiveness of service
Low	Unlikely to occur and consequences are relatively minor

Adequacy Ratings for Existing Controls

Following the identification and classification of the inherent risks, we have assessed the strength of the existing internal controls mitigating each inherent risk.

The internal control components that have been considered to assess the licensee's ability to manage its risks include:

- > Control environment – corporate culture, corporate governance, organisation structure, assignment of authority and responsibility, documentation of policies and procedures, human resource practices, records management.
- > Licensee's risk assessment process
- > Information systems – including management and regulatory reporting and the business processes relevant to the licence conditions.
- > Control activities – authorisation, segregation of duties, physical controls and security, IT controls.
- > Monitoring of controls – management review, internal audit, other audits, veracity of management information.

The adequacy of existing internal controls is also assessed based on a 3-point scale as indicated below.

Level	Description
Strong	Controls that mitigate the identified risks to a suitable level
Moderate	Controls that only cover material risks; improvement required
Weak	Controls are weak or non-existent and do little to mitigate the risks

Assessment of Audit Priority

The assessment of audit priority has been used to determine the audit objectives, the nature of audit testing and the extent of audit testing required. It combines the inherent risk and risk control adequacy rating to determine the priority level for each licence obligation.

Inherent Risk	Adequacy of Existing Controls		
	Weak	Medium	Strong
High	Audit Priority 1	Audit Priority 2	
Medium	Audit Priority 3		Audit Priority 4
Low	Audit Priority 5		

APPENDIX

B

ASSET MANAGEMENT PERFORMANCE
RATING DEFINITIONS

Asset Management Review Rating Scales

The asset management review utilises a combination of asset management adequacy ratings and asset management performance ratings, which are outlined below. These are based on the ERA's *Audit Guidelines – Water Licenses* (March 2019).

Asset Management Adequacy Ratings

Rating	Description	Criteria
A	Adequately defined	<ul style="list-style-type: none"> ▪ Processes and policies are documented. ▪ Processes and policies adequately document the required performance of the assets. ▪ Processes and policies are subject to regular reviews, and updated where necessary. ▪ The asset management information system(s) are adequate in relation to the assets that are being managed.
B	Requires some improvement	<ul style="list-style-type: none"> ▪ Processes and policies require improvement. ▪ Processes and policies do not adequately document the required performance of the assets. ▪ Reviews of processes and policies are not conducted regularly enough. ▪ The asset management information system(s) require minor improvements (taking into consideration the assets that are being managed).
C	Requires significant improvement	<ul style="list-style-type: none"> ▪ Process and policy documentation is incomplete or requires substantial improvement. ▪ Processes and policies do not document the required performance of the assets. ▪ Processes and policies are considerably out of date. ▪ The asset management information system(s) require substantial improvements (taking into consideration the assets that are being managed).
D	Inadequate	<ul style="list-style-type: none"> ▪ Processes and policies are not documented. ▪ The asset management information system(s) is not fit for purpose (taking into consideration the assets that are being managed).

Asset Management Performance Ratings

Rating	Description	Criteria
1	Performing effectively	<ul style="list-style-type: none"> ▪ The performance of the process meets or exceeds the required levels of performance. ▪ Process effectiveness is regularly assessed, and corrective action taken where necessary.
2	Improvement required	<ul style="list-style-type: none"> ▪ The performance of the process requires some improvement to meet the required level. ▪ Process effectiveness reviews are not performed regularly enough. ▪ Process improvement opportunities are not implemented.
3	Corrective action required	<ul style="list-style-type: none"> ▪ The performance of the process requires substantial improvement to meet the required level. ▪ Process effectiveness reviews are performed irregularly, or not at all. ▪ Process improvement opportunities are not implemented.
4	Serious action required	<ul style="list-style-type: none"> ▪ Process is not performed, or the performance is so poor that the process is considered to be ineffective.

APPENDIX

C

KEY DOCUMENTS AND INFORMATION
SOURCES

Asset Planning

AQWEST ASSET MANAGEMENT PLAN 2022-2031

ASSET PLANNING

BUDGET BID - AIP 2022-23 - MANGLES RESERVOIR - SLOPE STABILITY AND ACCESS TRACK - GL 3806

BUDGET BID TEMPLATE - ASSET INVESTMENT PLAN

BUDGET BID TEMPLATE - OPERATING EXPENSES

BUNBURY WATERFRONT STAGE 2 HYDRAULIC MODELLING

BUSINESS CASE GLEN IRIS

BWRRS BUSINESS CASE

CONDUCT TANK INSPECTIONS

CORPORATE PLAN 2021-22

EXPENDITURE NATURE RATIONALE TOOL

GREATER BUNBURY URBAN WATER STRATEGY 2020-2070

ASSET RISK & CRITICALITY FRAMEWORK-JUNE 2017-FINAL

MAINS AND VALVES ASSET CLASS MANAGEMENT PLAN-DRAFT-REV B-JUNE 2020

NETWORK MODELLING AND ANALYSIS REPORT

RESERVOIRS-ASSET CLASS MANAGEMENT PLAN-DRAFT-JULY 2020

WATER LOSS MANAGEMENT PLAN - WLMP FINAL - DETECTION SERVICES

Asset Creation/Acquisition

386919 ASSET HANDOVER PLAN - SCADA UPGRADE

APPROVE ENGINEERING CONSULTANTS DESIGN SUBMISSIONS

ASSET ACQUISITION PROCESS

CLOSEOUT MAINS & VALVE REPLACEMENT

DELIVERY OF MAINS & VALVE REPLACEMENT

ENGINEERING APPROVALS FRAMEWORK - WORKBOOK

ENGINEERING APPROVALS FRAMEWORK GUIDE

HANDOVER PROCESS

PROCUREMENT POLICY

SECURITY MANAGEMENT - 2 TREATMENT - COMMISSIONING STANDARD

WTP ANNUAL MAINTENANCE PROCESS

Asset Disposal

ASSET DECOMMISSIONING AND DISPOSAL

DISPOSAL TENDER 2021 FINAL

DISPOSE OF AN ASSET PROCEDURE

Environmental Analysis

ANNUAL COMPLIANCE REPORT 202021 - SCHEDULE A PREPARATION REPORT

AQWEST SAMP STRATEGIC ASSET MANAGEMENT PLAN DRAFT VERSION 1

COMMITMENT TO CUSTOMERS

DEVELOP STRATEGIC RISK PROFILE

ENVIRONMENT - ENVIRONMENTAL SUSTAINABILITY STRATEGIC PLAN 2019 20 - 2023 24

ENVIRONMENTAL SUSTAINABILITY (2)

FILE NOTE AQWEST GREATER BUNBURY URBAN WATER STRATEGY 2020 - 2070 (1)

FILE NOTE AQWEST OPERATIONAL AUDIT AND ASSET MANAGEMENT SYSTEM EFFECTIVENESS REVIEW 2018

FILE NOTE COMPLIANCE REPORT 1 JULY 2018 TO 30 JUNE 2019

IDENTIFYING ENVIRONMENTAL ASPECTS AND IMPACTS

INTEGRATED WATER MANAGEMENT STRATEGY STAGE #2 (IWMS)

INTEGRATED WATER MANAGEMENT STRATEGY STAGE 2 - ADDENDUM - BORR CONSTRUCTION (IWMS)

OPERATING LICENCE ASSET MANAGEMENT REVIEW REPORT 2010

ORGANISATION STRUCTURE

PERFORMANCE INDICATOR (BOARD) REPORT 30 JUNE 2021

REPLY BUNBURY WATER CORPORATION COMPLIANCE REPORT 01 07 2017 TO 30 06 2018

REPORT - AQWEST 2013 AUDIT AND ASSET MANAGEMENT REVIEW

STRATEGIC ENVIRONMENT RISK ASSESSMENT 2019 - ADVANCED SWOT

STRATEGIC ENVIRONMENT RISK ASSESSMENT 2020 - ADVANCED SWOT

STRATEGIC ENVIRONMENT RISK ASSESSMENT 2021

STRATEGIC ENVIRONMENT SCAN & ANALYSIS - WORKFORCE PLANNING

Asset Operations

AQWEST SCADA STRATEGY REV A DRAFT

ASSET REGISTER-AUTHORITY EXTRACT

CALIBRATE ONLINE HACH PH PROBE ONSITE

CYCLICAL MAINTENANCE - TEMPLATE WORK ORDERS

MINUTES OPERATIONS HSEQ MEETING 14 OCTOBER 2021

TECH WTP PLANT STARTUP

WATER TREATMENT PLANT STRATEGY 25 OCTOBER 2021

WATER TREATMENT PRODUCTION STRATEGY 25 OCTOBER 2021

WEEKLY SAFETY SHOWER INSPECTION CHECKLIST

WORKS MANAGEMENT

Asset Maintenance

ALL CYCLICAL WOS FY 20-21

CEO PERFORMANCE REVIEW DEVELOPMENT AND TRAINING

DISTRIBUTION WORK REPORTS

EXECUTIVE STAFF (NON CEO) PERFORMANCE REVIEW DEVELOPMENT AND TRAINING

TECH WTP WEEKLY AERATOR MAINTENANCE

WORKS MANAGEMENT

Asset Management Information System

ASSET INFORMATION STRATEGY KEY DECISION PRIORISATION

ASSET DATA BACKUP FLOWCHART

ASSET MANAGEMENT - PLANS AND STRATEGIES - ASSET INFORMATION STRATEGY

ASSET MANAGEMENT PROCESS GROUP

ASSET REGISTER-AUTHORITY EXTRACT
ICT POLICY
MANAGE A BUSINESS CONTINUITY INDICENT
MANAGE AUTHORITY SYSTEM
MANAGE CYBER INCIDENT
MANAGING SCADA
MANAGING WAN
PERFORM ICT SYSTEMS MAINTENANCE
RISK REGISTER REPORT RISK 92 LOSS OF AVAILABILITY (ICT AND RECORDS)
UPDATE BASE CADASTRE LAYER IN AUTOCAD MAP3D
UPDATE INTRAMAPS FROM AUTOCAD MAP3D (BASE)

Risk Management

CONDUCT INCIDENT INVESTIGATION
CUSTOMER REQUEST COMPENSATION
RISK MANAGEMENT FRAMEWORK PLAN
RISK REGISTER REPORT

Contingency Planning

Business Continuity Plan Severe Weather 4-5 May
Incident Register Export All
MINUTES OPERATIONS HSEQ MEETING 14 OCTOBER 2021

Financial Planning

Corporate Plan 2021-22
Financial Management Manual
FMM 2-CASH MANAGEMENT PROCEDURE
FMM 3-BUDGETING PROCEDURE
FMM 8-ASSET CAPITALISATION PROCEDURE

Capital Expenditure Planning

BUSINESS CASE GLEN IRIS
CORPORATE PLAN 2021-22
EXPENDITURE NATURE RATIONALE TOOL
ASSET RISK & CRITICALITY FRAMEWORK - JUNE 2017 - FINAL
GOVERN ASSET INVESTMENT
RESOLUTION 2.18 ASSET INVESTMENT PROGRAM UPDATE - BOARD MEETING 21 10 2021
SKEWES CHLORINE FENCE INVESTMENT PLANNING REPORT

Review of the Asset Management System

AMIP ASSET MANAGEMENT IMPROVEMENT PLAN
AQWEST ASSET MANAGEMENT PLAN 2022-2031
AQWEST OPERATIONAL AUDIT AND ASSET MANAGEMENT SYSTEM EFFECTIVENESS REVIEW 2018
AQWEST SAMP STRATEGIC ASSET MANAGEMENT PLAN DRAFT VERSION 1 (1)
DRAFT AMIP COMPLIANCE AND STANDARDS FOCUSED
CONTEXT OF THE ORGANISATION - STEP 6

ISO 55001 MATURITY ASSESSMENT REPORT - FEBRUARY 2021

MANAGEMENT SYSTEM SELF EVALUATION CHECK LIST ISO 55001 - AUDITORS FINDINGS STAGE 1
- DECEMBER 2020

General

109774 WATER LICENCE WL2 - VERSION 9, 1 JULY 2016

167727 Operating Licence Asset Management Review Report 2010

205707 OPERATING LICENCE AND ASSET MANAGEMENT REVIEW 2013

206439 REPORT - AQWEST 2013 AUDIT AND ASSET MANAGEMENT REVIEW

299124 PERFORMANCE INDICATOR BOARD REPORT JULY 2018 BOARD MEETING

303061 ERA COMPLIANCE REPORT - 1 JULY 2017 TO 30 JUNE 2018

322962 AQWEST OPERATIONAL AUDIT AND ASSET MANAGEMENT SYSTEM EFFECTIVENESS
REVIEW 2018

325173 PERFORMANCE INDICATOR BOARD REPORT (CRS) JULY 2019 BOARD MEETING

329915 ERA COMPLIANCE REPORT 1 JULY 2018 - 30 JUNE 2019

353187 BOARD PERFORMANCE REPORT (CRS) MEETING JULY 2020

354910 ERA COMPLIANCE REPORTING - 1 JULY 2019 TO 30 JUNE 2020

384527 LICENCE TO TAKE WATER - 26-07-2021 TO 11-12-2028

390715 Water Services Licence 2 version 11, 19 October 2021 (WL2)

COMMITMENT TO CUSTOMERS