

Review Report

Shire of Morawa Asset Management System Review

3605-81

Prepared for
Economic Regulation Authority of Western
Australia

24 March 2017



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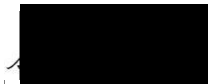
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Executive Summary

General

The Shire of Morawa holds a water services operating licence (WL24) which permits it to provide sewerage services and non-potable water supply services and undertake, maintain and operate any water service works to the Shire of Morawa. The operating licence was granted by the Economic Regulation Authority (ERA) on 29 April 1996 and has been most recently amended on 1 July 2016.

The Shire provides sewerage and non-potable water Supply services through a 6.2km gravity reticulation system and 1.1km pressure main (one pump station and rising main), a treatment plant and an effluent re-use scheme serving 296 residential and non-residential properties. The two primary and secondary treatment ponds have a storage capacity of 5,800m³ and the effluent re-use storage pond has a capacity of 7,500m³. The scheme collects and treats approximately 75,000 kL annually of residential and commercial liquid wastes and re-uses approximately 65,000 kL annually on spray irrigation of the town's ovals.

There have been no changes to the Shire of Morawa's assets since the last review.

During the period of time covered by the review there were two versions of the water services operating licence in force, with version 3 in place for the period 18 November 2013 to 30 June 2016 and version 4 covering the period from 1 July 2016 onwards.

Audit and Review Objectives

Cardno was commissioned by the ERA to undertake an asset management system review of the Shire of Morawa in accordance with the requirements set out in Section 24 of the *Water Services Act 2012 (WA)* and Clause 4.1 its current operating licence.

This review has been conducted in order to assess the effectiveness of the Shire of Morawa's asset management system. The asset management system review covers the period 1 December 2014 to 30 November 2016.

This report presents the finding of the review of the Shire of Morawa to fulfil the required objectives, conducted on 30 and 31 January 2017.

The review was carried out in accordance with the Audit and Review Guidelines: Water Licences, as published by the ERA in July 2014.

Findings of the previous Asset Management System Review

The asset management system review assessed the performance of the Shire of Morawa against the key asset management processes and effectiveness criteria set out in the ERA Guidelines.

The previous asset management system review identified the following recommendations:

1. Asset Disposal: As asset replacement planning is based only on asset age, the Shire should undertake a condition assessment of its assets (all facility assets and a sample only of sewer mains) to inform its renewals planning and to identify any possible health and safety hazards.

Partly resolved. Refer to recommendation R9/2017

2. Environmental Analysis: There is limited evidence that the outcomes of the risk assessment inform how the Shire's assets are managed. The Shire should review the risk assessment to identify whether other mitigation measures, management strategies or contingency plans are appropriate.

Resolved, some further action identified as being required. Refer to recommendation R2/2017

3. Environmental Analysis: The operational audit found that the Shire has not complied with all of its regulatory requirements. The Shire should prepare a compliance register based on the Authority's Compliance Report Manual to assist in keeping track of its statutory and regulatory obligations.

Resolved

4. Asset Operations: Although the Shire's operational procedures are set out in the 'Procedures, Rules and Maintenance' document, this needs to be reviewed, and updated where appropriate, as it has not been reviewed since 2009.

Resolved
5. Asset Operations: The Shire has an asset register documenting asset type, location, material and financial information but asset condition is not documented. There is a separate condition and performance spreadsheet with some condition information, however this is out of date. As a result, the Shire should undertake a condition assessment of its assets (all facility assets and a sample only of sewer mains) to inform its renewals planning and to identify any possible health and safety hazards.

Resolved
6. Asset Maintenance: Although the Shire's operational procedures are set out in the 'Procedures, Rules and Maintenance' document, this needs to be reviewed, and updated where appropriate, as it has not been reviewed since 2009.

Resolved
7. Asset Maintenance: We noted at our site inspection that a number of assets at the pumping station appear to be close to the end of their useful life or possibly a health and safety hazard. The Shire undertake a condition assessment of its assets (all facility assets and a sample only of sewer mains) to inform its renewals planning and to identify any possible health and safety hazards.

Partly resolved. Refer to recommendation R9/2017
8. Risk Management: The Shire's risk register does not inform management of the assets, e.g. through treatment plans or contingency plans. Therefore, the Shire should update its risk assessment to account for its new operating licence, extend the risk assessment to the effluent reuse scheme, identify the mode of failure on which the risk assessment is based and identify appropriate risk management strategies and treatment plans for high risks.

Partly resolved. Refer to recommendation R11/2017
9. Contingency Planning: No evidence of formal contingency plans was provided at the asset management review. Therefore, the Shire should prepare and test contingency plans for its higher risks.

Partly resolved. Refer to recommendation R13/2017
10. Financial Planning: The financial plan does not identify sources of funds for capital expenditure and recurrent costs. Therefore, the Shire should update the financial plan to identify the sources of funds for capital expenditure and recurrent costs.

Resolved
11. Financial Planning: The financial plan does not include forecasts of revenue and, therefore, profit/loss. It also does not include forecasts or actual movements in the sewerage reserve. The Shire should revise the financial plan to include projections for revenue, profit/loss and financial position.

Resolved
12. Financial Planning: Variances to the sewerage service budget are detailed for the Community Amenities cost centre. The Shire should track actual expenditure for the sewerage scheme against budget in a spreadsheet.

Resolved
13. Capital Expenditure Planning: Based on observations made from reviewing the Shire's asset register and renewals forecasting, it is recommended that the Shire should update its asset register and renewals forecast with up to date replacement costs, condition data, replacement dates based on condition and appropriate inflation/discount rates.

Resolved

Findings from the current Asset Management System Review

The review of the Shire of Moora's asset management system identified the following recommendations during the current audit:

Table 1-1 Summary of Recommendations

Reference (no./year)	Asset Management System Component	Issue	Reviewer's recommendation
R1/2017	<i>B2 Asset Planning – Asset management plan covers key requirements</i>	Although the asset management system package provided by the ERA that the Shire uses includes a Financial Budget spreadsheet, the Shire does not utilise this spreadsheet.	We recommend that the Shire uses the Financial Budget spreadsheet to consolidate all of the financial information related to the income/revenue and expenditure related to providing the sewerage service.
R2/2017	<i>B2 Asset Planning – Likelihood and consequences of asset failure are predicted</i>	The mitigation and management strategies for the highest risks are included in the Asset Management Plan. However, the Shire has recognised that the main risk event impacting on the sewerage service is power outages and this is not included in the risk assessment.	The Shire has recently developed a Contingency Plan and this includes mitigation actions related to power outages. We recommend that this risk event is included in the next review of the risk register.
R3/2017	<i>B2 Asset Planning – Plans are regularly reviewed and updated</i>	Although the Shire reviews the Asset Management Plan annually, the document states in Section 7.2 that the asset register will be reviewed annually in the improvement plan in Section 7.2 but that it will be reviewed every five years in Section 7.3.	We recommend that the Shire revises the information provided in Section 7.3 to state that the Asset Management Plan should be reviewed, and updated where necessary, annually. This review process provides the opportunity to refine and keep this information up-to-date and relevant. Therefore, the next review of the AMP would be expected to be completed in August 2017.
R4/2017	<i>B2 Asset Creation - Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood</i>	Although the AMP includes information on the recycled water scheme assets, the legal, environmental and safety obligations related to the reuse scheme are not specified in the AMP (e.g. the <i>Health Act 1911</i> , the <i>Metropolitan Water Supply and Sewerage Act 1909</i> and <i>Environmental Protection Act 1986</i>).	We recommend that the legislative requirements associated with the licensee's reuse scheme are included in the next update of the AMP.
R5/2017	<i>B2 Environmental Analysis - Compliance with statutory and regulatory requirements</i>	The Shire has identified statutory and regulatory requirements in its Section 2.2 of the AMP. However, it makes reference to the <i>Water Services Licensing Act 1995</i> which has been superseded by the <i>Water Services Act 2012</i> .	We recommend that the AMP be updated to reflect the new legislative framework at the next review of the document.
R6/2017	<i>B2 Environmental Analysis - Compliance with statutory and regulatory requirements</i>	There was also a requirement for the Shire to develop a Recycled Water Quality Management Plan by the end of 2016 that has not yet been completed.	We recommend that the Shire completes the overdue Recycled Water Quality Management Plan that it is required to complete by the Department of Health once the proposed disinfection system has been installed.

Reference (no./year)	Asset Management System Component	Issue	Reviewer's recommendation
		<p>The Shire is waiting for the disinfection system installation to be completed prior to the Recycled Water Quality Management Plan being prepared.</p> <p>As such, the Plan is expected to be completed within the next few months.</p>	
R7/2017	<p><i>B2</i></p> <p><i>Asset Operations – Risk management is applied to prioritise operations tasks</i></p>	<p>Risk management related to the treated effluent reuse supply are included in the AMS. However, we observed that although the Risk Register has been updated to include the effluent reuse assets, it does not include any risk related to the water quality of the effluent.</p>	<p>We recommend that the risk event of reused effluent being of unsuitable quality for irrigation of the sports oval be included in the next review of the Register.</p>
R8/2017	<p><i>B2</i></p> <p><i>Asset Operations - Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data</i></p>	<p>We note that the asset register does not record the pipe diameters or materials. The Asset Management Plan does provide information on pipe sizes and diameters.</p> <p>In addition, that the asset register does not provide any information on asset sizes/dimensions (e.g. pump and motor sizes/capacities, treatment plant pond sizes, storage tanks) or materials (e.g. storage tanks).</p> <p>We also note that the rising main from the pump station to the treatment plant is not recorded as a rising main pipe.</p>	<p>We recommend that the Shire revises its asset register to include this information at the next update of the AMS.</p>
R9/2017	<p><i>B2</i></p> <p><i>Asset Maintenance – Regular inspections are undertaken of asset performance and condition</i></p>	<p>The Shire has not completed a recommendation from the last asset management review to engage a Health & Safety consultant to carry out a survey of the below ground overflow structure at the Shire's pumping station.</p> <p>This recommended work should assess the pumping station overflow structure to confirm, or otherwise, whether the open tank needs a cover/cage and whether the ladder into the tank is required and, if it is, whether it meets the current Australian Standards for ladders.</p>	<p>We recommend that the Shire completes this recommendation that was included in the 2015 asset management system review.</p>
R10/2017	<p><i>B2</i></p> <p><i>Risk Management – Risks are documented in a risk register and treatment plans are actioned and monitored</i></p>	<p>The risk consequences related to customers and community are assessed and used to derive an overall consequence score based on the maximum individual score. The licensee's risk assessment does not include risk consequences associated with the water licence, financial impact, the</p>	<p>We recommend that the Shire's risk assessment be updated to include these risks when the register is next reviewed.</p>

Reference (no./year)	Asset Management System Component	Issue	Reviewer's recommendation
		environment and workplace health and safety.	
R11/2017	<i>B2 Risk Management – Risks are documented in a risk register and treatment plans are actioned and monitored</i>	Although the Shire has developed a Contingency Plan that includes the mitigation/management strategies for the key asset risk events, and these are also included in the Asset Management Plan, the Risk Register does not include any Mitigation & Management Strategies for any of the significant risks included in the Water Services Operating Licence Risks.	Therefore, we recommend that the Shire review the non-asset risks and identifies Mitigation & Management Strategies for these non-asset risks.
R12/2017	<i>D4 Contingency Planning - Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks</i>	The Shire has developed the Contingency Plan that was included in the previous asset management review's recommendations after the end of the review period but prior to the completion of this report.	As the Contingency Plan was not completed until after the review period, we are required to recommend that the Shire develops a Contingency Plan. The Shire can refer to the actions that have been completed to address this recommendation in its Post-Review Implementation Plan.
R13/2017	<i>D4 Contingency Planning - Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks</i>	The Shire has only recently prepared its Contingency Plan for its sewerage system. No testing of the Plan has been completed.	In our review of the recommendations from the last asset management system review, we have recommended that the Shire conducts a desktop test of its Contingency Plan during 2017 (recurring annually) using a mock scenario to test and confirm that its mitigation strategies and the listed actions under each strategy are appropriate.
R14/2017	<i>B1 Financial Planning – The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services</i>	With the exception of the renewals program, the Asset Management Plan does not include any financial forecast data related to the operations and maintenance of the sewerage and reuse systems.	We recommend that the Shire includes a five year financial plan that includes the breakdown of the revenue/income and different components of the expenditure (e.g. electricity, materials, labour, licensing costs, contractor expenditure, overheads, insurance etc.) and the forecast money to be put into the sewerage reserve fund, in order to provide the financial adjustments in each year and the overall annual financial situation over the period. The Shire has this information included in its financial plan as well as the actual costs incurred in the year recorded in Synergy so providing this financial overview and forecast in the Asset Management Plan should be a reasonably straightforward process.

Assessment of the Effectiveness of the Asset Management System

The Shire has in place the elements of a robust asset management system. The system has been updated together with an update of the Shire's Asset Management Plan in August 2016. There is significant redundancy in the system due to its capacity, flexibility in system operation and the availability of resources such as skilled labour and parts.

The review has identified a number of improvement opportunities and also identified that some additional work is required to complete the recommendations that were identified at the last asset management system review in 2015.

With regard to the recommendation from the previous review relating to the asset condition assessment being used to identify any possible health and safety hazards, we have recommended that the Shire engages a health and safety contractor to assess the current standards related to the overflow well at the pumping station, in particular whether the open well requires a covering or a cage system over the top of the structure and to assess whether the current ladder structure meets the current Australian standards.

The Shire has developed the Contingency Plan that was included in the previous asset management review's recommendations after the end of the review period but prior to the completion of this report. As such, no testing of the Contingency Plan has yet been carried out and we have recommended that the Shire conducts a desktop test of its Contingency Plan during 2017 (and annually after that) using a mock scenario to test and confirm that its mitigation strategies and the listed actions under each strategy are appropriate.

There was also a requirement for the Shire to develop a Recycled Water Quality Management Plan by the end of 2016 that has not yet been completed. The Shire is waiting for the disinfection system installation to be completed prior to the Recycled Water Quality Management Plan being prepared. As a result, the Shire expected that the Plan should be completed within the next few months. The preparation of this document is expected to resolve a number of items that were identified during the asset management review, including risk assessments associated with the supply of treated effluent and the development of related mitigation strategies.

Based on the outcomes of the review, the Auditors found that the asset management processes and measures have generally been satisfactorily implemented and are being followed. It is the Auditor's opinion that the asset management system is operating satisfactorily given the provision of the licensee's sewerage and non-potable water services.

Asset Management System Review - Overall Effectiveness

A summary of our assessment of the effectiveness of the Shire of Morawa's Asset Management System is provided in Section 4.2. All but one component has been rated "B2" or better for policy/procedures and for performance. The one exception is the Contingency Planning component, which has been rated as "D4" as the Shire did not have a Contingency Plan in place for the review period. The Shire has rectified this issue now and can refer to the actions that have been completed to address this issue in its Post-Review Implementation Plan. As the Shire has not completed any asset acquisition or asset disposal activities during the review period, these components have been rated as Not Applicable.

Although we have identified a number of improvement opportunities, we consider that there has been an overall improvement in the effectiveness of the Shire's asset management system since the last review was completed in 2015, when a number of the asset management components were rated as C3.

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1 Introduction

1.1 Background

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.

The Shire of Morawa holds a water services operating licence (WL24) which permits it to provide sewerage services and non-potable water supply services and undertake, maintain and operate any water service works within the designated operating area set out in Plan No. OWR-OA-059. The operating licence was granted by the Economic Regulation Authority (ERA) on 29 April 1996 and has been most recently amended on 1 July 2016.

The Shire provides sewerage and non-potable water Supply services through a 6.2km gravity reticulation system and 1.1km pressure main (one pump station and rising main), a treatment plant and an effluent re-use scheme serving 296 residential and non-residential properties. The two primary and secondary treatment ponds have a storage capacity of 5,800m³ and the effluent re-use storage pond has a capacity of 7,500m³. The scheme collects and treats approximately 75,000 kL annually of residential and commercial liquid wastes and re-uses approximately 65,000 kL annually on spray irrigation of the town's ovals.

There have been no changes to the Shire of Morawa's assets since the last review.

1.2 Purpose of this Report

As a condition of its licence, the Shire of Morawa is required to conduct 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* requires the licensee to provide the ERA with a report by an independent expert acceptable to the ERA 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 covers:

- > 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 Works

2.1 Asset Management System Review Objectives

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

1. Provide the ERA with an independent assessment of the 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 Works

The scope of works of this review included:

- > Interviews with key staff members from the Shire of Morawa 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 (July 2014)
- > Reviews 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
- > Preparation of a review report in accordance with the format specified in the Audit and Review Guidelines.

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:

- > A start-up discussion (by telephone) with the Shire of Morawa to discuss the scope of works for the review, identify any new issues arising from changes to the Licence or operating environment requirements and review timing and logistics
- > Preparation of a draft review plan which identified the number and location of reviews, the information to be addressed and the reviewers responsible
- > Submission of the draft review plan to the ERA for approval
- > A start-up meeting on-site at the beginning of our review work
- > On-site review work comprising:
 - Face to face 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 water service assets.
- > Preliminary feedback at the review close-out meeting
- > Submission of a draft report for the ERA

- > Submission of a final report 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.

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 key requirements ▪ Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning ▪ Service levels are defined ▪ 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 identified ▪ Likelihood and consequences of asset failure are predicted ▪ Plans are 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 solutions ▪ 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 system environment are assessed ▪ Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved ▪ Compliance with statutory and regulatory requirements ▪ Achievement of customer service levels 	<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"> ▪ 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, an assessment of assets' physical/structural condition and accounting data ▪ 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 	<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
Asset Management	<ul style="list-style-type: none"> ▪ Adequate system documentation for users and IT operators 	<ul style="list-style-type: none"> ▪ Review adequacy of asset information system: 	<ul style="list-style-type: none"> ▪ Asset Management Information system 	<ul style="list-style-type: none"> ▪ AMIS manual

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
Information System	<ul style="list-style-type: none"> ▪ Input controls include appropriate verification and validation of data entered into the system ▪ Logical security access controls appear adequate, such as passwords ▪ Physical security access controls appear adequate ▪ Data backup procedures appear adequate and backups are tested ▪ Key computations related to licensee performance reporting are materially accurate ▪ Management reports appear adequate for the licensee to monitor licence obligations 	<ul style="list-style-type: none"> ▪ 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"> ▪ AMIS data coverage and quality report ▪ Asset reports
Risk management	<ul style="list-style-type: none"> ▪ Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system ▪ Risks are documented in a risk register and treatment plans are actioned and monitored ▪ The probability and consequence of risk failure are regularly assessed 	<ul style="list-style-type: none"> ▪ Review risk assessment coverage ▪ 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"> ▪ 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 and report on findings ▪ Identify any improvements that have been actioned as a result of testing of the contingency plans 		<ul style="list-style-type: none"> ▪ Contingency plans
Financial planning	<ul style="list-style-type: none"> ▪ The financial plan states the financial objectives and strategies and actions to achieve the objectives ▪ 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 provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period 	<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 Plan

Audit Area	Effectiveness Criteria	Approach	Systems	Key Documents
	<ul style="list-style-type: none"> ▪ The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services ▪ Significant variances in actual / budget income and expenses are identified and corrective action taken where necessary 			
Capital expenditure planning	<ul style="list-style-type: none"> ▪ There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates ▪ The 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 that the capital expenditure plan is regularly updated and actioned 	<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 that the asset management plan and the asset management system described therein are kept 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 asset management plan based on the results of this review ▪ Determine when the AMS was last reviewed. 		<ul style="list-style-type: none"> ▪ Asset management plans

2.4 Time Period Covered by the Review

The asset management system review covers the period from 1 December 2014 to 30 November 2016.

The previous review of the effectiveness of the Shire of Morawa's asset management system was undertaken by Cardno in 2015 and covered the period 1 December 2011 to 30 November 2014.

During the period of time covered by the review there were two versions of the Shire of Morawa's water services operating licence in force, with version 3 in place for the period 18 November 2013 to 30 June 2016 and version 4 covering the period from 1 July 2016 onwards.

2.5 Time Period of the Review Process

The review commenced in November 2016 with the preparation of the draft Audit Plan. Interviews with the Shire of Morawa's staff were carried out on 30 and 31 January 2017 at the Shire Office in Winfield Street, Morawa, Western Australia.

2.6 Details of the Licensee Representatives Participating in the Audit/Review

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

Table 2-2 Details of Licensee Representatives

Name	Position
Sam Appleton	Executive Manager Development & Administration
Paul Buist	Principal Works Supervisor

2.7 Details of Key Documents and Other Information Sources

Details of the key documents provided to us by the Shire of Morawa and other information sources that were used during the course of this asset management system review were:

- > Shire of Morawa Water Services Operating Licence – WL24, Version 3, 18 November 2013
- > Shire of Morawa Water Services Operating Licence – WL24, Version 4, 1 July 2016
- > Cardno, Shire of Morawa Operational Audit and Asset Management System Review, Final Report, June 2015
- > Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016
- > Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017
- > Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance
- > Asset Register spreadsheet
- > Asset Renewal Programming spreadsheet
- > Condition and Performance Monitoring spreadsheet
- > Maintenance Management spreadsheet
- > Risk Assessment spreadsheet
- > Shire of Morawa Budget for 2016/17
- > Drawings for Shire of Morawa Sewerage Scheme (multiple PDFs and hard copies viewed at Shire Office)
- > Shire of Morawa Corporate Business Plan, 20 June 2013
- > Shire of Morawa Policy Manual, February 2016
- > Shire of Morawa Infrastructure Sewerage FV Valuation as at 30 June 2015 (prepared by Griffin)

- > Western Australia Tomorrow, Population Report No. 7, 2006 to 2026, Forecast Profile Morawa (S) Local Government Area, February 2012
- > Shire of Morawa Section B Excerpt from AACR for DER 2015 report
- > Shire of Morawa Sewerage Connection Application Form
- > Shire of Morawa Complaints Procedure Wastewater
- > Shire of Morawa post-audit and post-review implementation plan actions completed, Oct 2016
- > Shire of Morawa WWTP Compliance Calendars 2016/2017/2018
- > Shire of Morawa Strategic Community Plan 2012 - Version 9
- > Shire of Morawa 2014-2015 ERA Reporting Datasheets
- > Shire of Morawa Water, Sewerage and Irrigation Licence Performance Reporting Datasheets 2016
- > Shire of Morawa Annual Audit Compliance Report & AER 2015
- > Shire of Morawa DER 2015 Annual Report
- > Shire of Morawa ERA Compliance Report 2015
- > Shire of Morawa ERA Compliance Report 2016
- > Shire of Morawa Contingency Plans
- > Shire of Morawa Customer Service Charter, September 2016
- > Shire of Morawa Complaints Registers 2015, 2016
- > Multiple spreadsheets with sewage treatment plant sampling results
- > Annual Report from Shire of Morawa to Department of Environment and Conservation for 2014
- > Department of Environment and Conservation annual audits for 2012, 2013 and 2014

2.8 Details of Reviewers Participating in the Review and Hours Utilised

The review team comprised two staff members from Cardno.

Details of their roles and hours utilised in the review process are provided in the table below.

Table 2-3 Details of Review Team Members

Name	Organisation	Role	Summary of Task	Hours Utilised
Justin Edwards	Cardno	Auditor	<ul style="list-style-type: none"> ▪ Prepare audit plan ▪ Undertake audit ▪ Prepare audit report 	60
Stephen Walker	Cardno	Reviewer	<ul style="list-style-type: none"> ▪ Review audit plan ▪ Review audit report 	8

3 Licensee's Response to Previous Recommendations

In the previous asset management review, a series of actions were recommended or suggested to address asset management deficiencies or process improvement opportunities.

3.1 Previous Review Ineffective Components and Recommendations

Details of the actions completed by the Shire of Morawa against each of the previous asset management system review recommendations are presented in Table 3-1 below.

Table 3-1 Previous Review Ineffective Components and Recommendations

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
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
19/2015	<p>B3</p> <p>Asset disposal -There is a replacement strategy for assets</p> <p>Asset replacement is planned for on the basis of asset age only</p>	<p><i>We recommend that the Shire undertake a condition assessment of its assets (all facility assets and a sample only of sewer mains) to inform its renewals planning and to identify any possible health and safety hazards.</i></p> <p>A desktop review of asset condition was completed as part of the preparation of the Shire's latest revision of its asset management plan. The information used in this review was</p>	Partly resolved	<p>Further action required. Refer to R9/2017.</p> <p>However, the Shire has not completed a detailed asset condition assessment of individual assets and has acknowledged that this work still needs to be completed.</p> <p>With regard to the recommendation from the</p>

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
		taken from the 2015 valuation of the sewerage assets. This forms a high level assessment of the asset condition. In addition, the Shire completes a program of CCTV of its sewer network every three years. This inspection program assesses the condition of the below ground assets and identifies any areas within the pipe network in poor condition that need to be addressed. The CCTV inspection of the Shire's sewers was last completed in 2015 and is due to be repeated in 2018.		previous review relating to the asset condition assessment being used to identify any possible health and safety hazards, we recommend that the Shire engages a health and safety contractor to assess the current standards related to the overflow well at the pumping station, in particular whether the open well requires a covering or a cage system over the top of the structure and to assess whether the current ladder structure meets the current Australian standards.
21/2015	<p>B2 Environmental Analysis - Compliance with statutory and regulatory requirements</p> <p>The operational audit has found that the Shire has not complied with all of its regulatory requirements.</p>	<p><i>We recommend that the Shire prepare a compliance register based on the Authority's Compliance Report Manual to assist in keeping track of its statutory and regulatory obligations.</i></p> <p>We confirmed that the Shire has prepared a series of annual Compliance Registers that currently go out to 2018. The register lists all of the compliance and legislative reporting requirements for each month in the year.</p>	January 2016	No further action required.
22/2015	<p>B2 Asset operations – Operational policies and procedures are documented and linked to service levels required.</p> <p>Operational procedures are set out in the 'Procedures, rules and maintenance' document. This document adequately describes operations and maintenance activities for the sewerage scheme.</p>	<p><i>This document was last revised in 2009 and should be reviewed.</i></p> <p>We confirmed that the 'Procedures, rules and maintenance' document has been reviewed and updated in accordance with the recommendation made in the previous asset management system review report.</p>	April 2016	No further action required.

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
23/2015	<p>B3</p> <p>Asset operations - Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data.</p> <p>The Shire has an asset register documenting asset type, location, material and financial information.</p> <p>However, asset condition is not documented. There is a separate condition and performance spreadsheet with some condition information but this is out of date.</p>	<p><i>As for 19/2015:</i></p> <p><i>We recommend that the Shire undertake a condition assessment of its assets (all facility assets and a sample of sewer mains) to inform its renewals planning and identify any possible health and safety hazards.</i></p> <p>Refer to comments in R19/2015</p>	Partly resolved	Refer to comments in R19/2015
24/2015	<p>B2</p> <p>Asset maintenance – Maintenance policies and procedures are documented and linked to service levels required.</p> <p>Maintenance procedures are set out in the 'Procedures, rules and maintenance' document. This document adequately describes operations and maintenance activities for the sewerage scheme.</p>	<p><i>As for 22/2015 - This document was last revised in 2009 and should be reviewed.</i></p> <p>Refer to 22/2015</p>	April 2016	No further action required.
25/2015	<p>C3</p> <p>Asset maintenance – Regular inspections are undertaken of asset performance and condition</p> <p>We noted at our site inspection that a number of assets at the pumping station appear to be close to the end of their useful life or possibly a health and safety hazard and recommend that the Shire has these assets inspected by an experienced engineer.</p>	<p><i>We recommend that the Shire undertake a condition assessment of its assets (all facility assets and a sample of sewer mains) to inform its renewals planning and identify any possible health and safety hazards.</i></p> <p>Refer to 19/2015</p>	Partly resolved	Refer to 19/2015

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
26/2015	<p>B3</p> <p>Risk management - Risks are documented in a risk register and treatment plans are actioned and monitored.</p> <p>It appears that the risk register does not inform management of the assets, e.g. through treatment plans or contingency plans.</p>	<p><i>We recommend that the Shire updates its risk assessment to:</i></p> <ul style="list-style-type: none"> ▪ <i>Account for its new operating licence</i> ▪ <i>Extend the risk assessment to the effluent reuse scheme</i> ▪ <i>Identify the mode of failure on which the risk assessment is based</i> ▪ <i>Identify appropriate risk management strategies and treatment plans for high risks</i> <p>The Shire's risk register was updated as part of the 2016 update of its Asset Management Plan. We reviewed the updated register and confirmed that it has taken into account the recommendations that were made in the previous asset management system review report.</p>	Partly resolved	<p>Refer to R11/2017</p> <p>We observed that although the risk register has been updated to include the effluent reuse assets, it does not include any risk related to effluent water quality.</p> <p>We recommend that the risk event of reused effluent being of unsuitable quality for irrigation of the sports oval be included in the next review of the Register.</p> <p>Additionally, although the Shire has developed a Contingency Plan that includes the mitigation/management strategies for the key asset risk events, and these are also included in the Asset Management Plan, the Risk Register does not include any Mitigation & Management Strategies for any of the significant risks included in the Water Services Operating Licence Risks.</p> <p>Therefore, we recommend that the Shire review the non-asset risks and identifies Mitigation & Management Strategies for these non-asset risks.</p>
27/2015	<p>B3</p> <p>Risk management - The probability and consequence of risk failure are regularly assessed</p> <p>The asset risks have been determined for each individual asset (e.g. section of pipe). No failure</p>	<p><i>As for recommendation 26/2015</i></p> <p>The Shire's risk register includes a separate assessment for the overflow/blockages (with regard to the risks associated with the operating licence) as well as separate assessments for the assets. The risk</p>	January 2016	No further action required.

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
	<p>mode has been identified. A failure mode should be identified as different failure modes will likely have different risks associated with them.</p> <p>Also, different failure modes will likely suggest different risk management strategies.</p> <p>The risk assessment has not been extended to the effluent reuse scheme.</p>	<p>assessment of the assets has been carried out for each individual asset, including each specific section of pipe between different manholes. Based on the Shire's assessment, a number of these pipes have been identified as being higher risks than other pipes due to their criticality within the overall network.</p> <p>Although the risk assessment has not been carried out with different failure modes, we consider that the assessment is sufficient and appropriate to the Shire's sewer network. The critical sewers have been identified and the Shire has developed mitigation strategies for sewer blockage/overflow events as well as sewer/manhole collapse.</p>		
29/2015	<p>B3</p> <p>Financial planning - The financial plan identifies the source of funds for capital expenditure and recurrent costs.</p> <p>The financial plan does not identify sources of funds for capital expenditure and recurrent costs</p>	<p><i>The financial plan should be updated to identify the sources of funds for capital expenditure and recurrent costs.</i></p> <p>The Shire's sewerage activities have their own sub-program in the budget which was not in place at the time of the last asset management system review. The Shire has a Long-Term Financial Plan for the ten year period 2012-2022. Forecast sewerage capital works projects are included in this plan, with the details including the proposed funding source, the estimated project cost and the expected timing for the project.</p> <p>The Shire's sewerage scheme is self-funded, with a sewerage reserve used to fund replacements and upgrades.</p> <p>The financial program is also included in the Asset Management System (and in the Asset Management Plan) that captures the capital</p>	January 2016	No further action required

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
		replacement and ongoing recurrent costs associated with maintaining the assets.		
30/2015	<p>B3 Financial planning - The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets).</p> <p>The financial plan includes long term projections for both operating and capital expenditure. However, the financial plan does not include forecasts of revenue and, therefore, profit/loss. It also does not include forecasts or actual movements in the sewerage reserve.</p>	<p><i>The financial plan should be revised to include projections for revenue, profit/loss and financial position.</i></p> <p>The Shire's Long-Term Financial Plan and Annual Budgets include revenue projections, capital expenditure forecasts and recurrent costs associated with operating and maintaining the sewerage service. This information is used to forecast actual and forecast profit/loss and statements of financial position.</p>	January 2016	No further action required
31/2015	<p>B3 Financial planning - The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period.</p> <p>Income and expenses for the sewerage scheme are accounted for under the Community Amenities cost centre. This cost centre includes other services such as waste collection. Therefore, it is not possible to separately identify income and profit/loss for the sewerage scheme. The sewerage scheme reserve fund is separately accounted for.</p>	<p><i>As for 30/2015</i></p> <p>As noted above, the Shire has developed a separate sub-program for the sewerage service since the last asset management system review. This allows the Shire to identify income and expenses for the sewerage service as standalone financial data.</p>	January 2016	No further action required
32/2015	<p>B3 Financial planning - Significant variances in actual / budget income and expenses are identified and corrective action taken where necessary.</p>	<p><i>We recommend that the Shire track actual expenditure for the sewerage scheme against budget in a spreadsheet</i></p> <p>As noted above, the Shire has developed a separate sub-program for the sewerage service since the last asset management</p>	July 2015	No further action required

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
	Variances to budget are detailed for the Community Amenities cost centre.	system review. This allows variances to budget for the sewerage service to be specifically identified. Monthly finances are reported to Council and variances over 5% or more than \$10,000 are reported as exceptions.		
33/2015	<p>C3 Capital expenditure planning – The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.</p> <p>We note the following regarding the calculated renewals annuity:</p> <ul style="list-style-type: none"> ▪ Costs are based on a 1999 valuation and have been indexed to current values. ▪ The currency of the replacement/renewal costs should be reviewed ▪ Replacement is based on asset age only, not condition. ▪ Condition assessment should be used to inform the renewals forecast to provide a more accurate forecast. ▪ 3.5% is used to inflate current costs to arrive at future costs. <p>A lower inflation rate is likely to be appropriate (in conjunction with an appropriate discount rate).</p>	<p><i>We recommend that the Shire update its asset register and renewals forecast with: up to date replacement costs, condition data, replacement dates based on condition and appropriate inflation/discount rates.</i></p> <p>The Shire's asset register was updated as part of the work to update its Asset Management Plan in August 2016.</p> <p>We confirmed at the review that the replacement costs have been taken from the most recent valuation of the sewerage assets in 2015. High level asset condition from the valuation work has also been included in the register to inform the renewals forecast.</p> <p>The Shire's annual capital investment budget was updated as part of the AMP update in August 2016, with a revised escalation index of 2.4% applied. A discount rate of 6.5% has also been used in the Net Present Value calculation.</p>	August 2016	No further action required.

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
20/2015	<p>B3 Environmental analysis - Opportunities and threats in the system environment are assessed</p> <p>There is limited evidence that the outcomes of the risk assessment inform how the Shire's assets are managed. For example, the only mitigation and management strategy noted is to inspect for blockages regularly.</p>	<p><i>We consider that the Shire should review the risk assessment to identify whether other mitigation measures, management strategies or contingency plans are appropriate.</i></p> <p>The Shire has developed a Contingency Plan after the end of the review period but prior to the completion of the asset management review work and the completion of this report.</p> <p>The Shire recognised that with the power outages that affect the pumping station, it only has approximately 24 hours of capacity at the pumping station before this would overflow. The strategies for mitigating this major risk have been addressed in the Contingency Plan.</p> <p>In addition to power outages, the Contingency Plan also addresses contingency for fire, earthquake, wet well pump failure, unexpected demand, illegal load, and pipe/manhole collapse. The Contingency Plan lists the key actions to be completed for each event and provides a list of key contacts. Incident classification and notification processes are also covered.</p>	January 2017	<p>Refer to R2/2017</p> <p>The risk assessment included in the Shire's Asset Management Plan does not include power outages as a potential risk event, although the Shire consider it to be the largest risk impacting on the sewerage service.</p> <p>We recommend that based on the information included in the Shire's Contingency Plan that it includes power outages as a risk event in the Mitigation and Management Strategies included in Section 4.5 of the Asset Management Plan in the next update of the document.</p>
28/2015	<p>C3 Contingency planning- Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.</p> <p>No evidence of formal contingency plans was provided at our review</p>	<p><i>The Shire should prepare and test contingency plans for its higher risks</i></p> <p>As noted above, the Shire has developed a Contingency Plan after the end of the review period but prior to the completion of the asset management review work and the completion of this report.</p> <p>The Shire recognised that with the power outages that affect the pumping station, it only has approximately 24 hours of capacity at the</p>	January 2017	<p>Refer to R13/2017</p> <p>We would recommend that the Shire conducts a desktop test of its Contingency Plan during 2017 (furthermore annually) using a mock scenario to test and confirm that its mitigation strategies and the listed actions under each strategy are appropriate.</p>

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
		<p>pumping station before this would overflow. The strategies for mitigating this major risk have been addressed in the Contingency Plan.</p> <p>In addition to power outages, the Contingency Plan also addresses contingency for fire, earthquake, wet well pump failure, unexpected demand, illegal load, and pipe/manhole collapse. The Contingency Plan lists the key actions to be completed for each event and provides a list of key contacts. Incident classification and notification processes are also covered.</p>		

4 Performance Summary

4.1 Assessment Rating Scales

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

Table 4-1 Asset Management Process and Policy Definition Adequacy Rating

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"> ▪ Process and policy documentation requires 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 significant improvement. ▪ Processes and policies do not document the required performance of the assets. ▪ Processes and policies are significantly out of date. ▪ The asset management information system(s) require significant 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).

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	Opportunity for improvement	<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 actioned.
3	Corrective action required	<ul style="list-style-type: none"> ▪ The performance of the process requires significant improvement to meet the required level. ▪ Process effectiveness reviews are performed irregularly, or not at all. ▪ Process improvement opportunities are not actioned.
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.

4.2 Asset Management Review Effectiveness Summary

The asset management system review assessed the 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 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 gradings awarded reflect that the Shire of Morawa generally has well developed asset management practices, although there is scope for improvements.

Table 4-3 Asset Management Review Effectiveness Summary

Asset Management System Component	Asset management process and policy definition adequacy rating	Asset management performance rating
Asset planning	B	2
▪ Asset management plan covers key requirements	B	2
▪ Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning	A	1
▪ Service levels are defined	A	1
▪ Non-asset options (e.g. demand management) are considered	B	1
▪ Lifecycle costs of owning and operating assets are assessed	B	1
▪ Funding options are evaluated	A	1
▪ Costs are justified and cost drivers identified	B	1
▪ Likelihood and consequences of asset failure are predicted	B	2
▪ Plans are regularly reviewed and updated	B	2
Asset creation/acquisition	NA	NA
▪ Full project evaluations are undertaken for new assets	NA	NA
▪ Evaluations include all life-cycle costs	NA	NA
▪ Projects reflect sound engineering and business decisions	B	NA
▪ Commissioning tests are documented and completed	NA	NA
▪ Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood	B	2
Asset disposal	NA	NA
▪ Under-utilised and under-performing assets are identified as part of a regular systematic review process	B	2
▪ The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken	NA	NA
▪ Disposal alternatives are evaluated	NA	NA
▪ There is a replacement strategy for assets	B	1
Environmental analysis	B	2
▪ Opportunities and threats in the system environment are assessed	B	1
▪ Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved	A	1
▪ Compliance with statutory and regulatory requirements	B	2

Asset Management System Component	Asset management process and policy definition adequacy rating	Asset management performance rating
▪ Achievement of customer service levels	B	1
Asset operations	B	2
▪ Operational policies and procedures are documented and linked to service levels required	B	1
▪ Risk management is applied to prioritise operations tasks	B	2
▪ Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data	B	2
▪ Operational costs are measured and monitored	A	1
▪ Staff resources are adequate and staff receive training commensurate with their responsibilities	A	1
Asset maintenance	B	1
▪ Maintenance policies and procedures are documented and linked to service levels required	B	1
▪ Regular inspections are undertaken of asset performance and condition	B	2
▪ Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule	B	1
▪ Failures are analysed and operational / maintenance plans adjusted where necessary	B	1
▪ Risk management is applied to prioritise maintenance tasks	B	2
▪ Maintenance costs are measured and monitored	A	1
Asset management information system	B	1
▪ Adequate system documentation for users and IT operators	A	1
▪ Input controls include appropriate verification and validation of data entered into the system	A	1
▪ Logical security access controls appear adequate, such as passwords	A	1
▪ Physical security access controls appear adequate	A	1
▪ Data backup procedures appear adequate and backups are tested	A	1
▪ Key computations related to licensee performance reporting are materially accurate	A	1
▪ Management reports appear adequate for the licensee to monitor licence obligations	B	1
Risk management	B	2
▪ Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system	B	2
▪ Risks are documented in a risk register and treatment plans are actioned and monitored	B	2
▪ The probability and consequence of risk failure are regularly assessed	B	1
Contingency planning	D	4
▪ Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks	D	4
Financial planning	B	1

Asset Management System Component	Asset management process and policy definition adequacy rating	Asset management performance rating
<ul style="list-style-type: none"> The financial plan states the financial objectives and strategies and actions to achieve the objectives 	B	1
<ul style="list-style-type: none"> The financial plan identifies the source of funds for capital expenditure and recurrent costs 	B	1
<ul style="list-style-type: none"> The financial plan provides projections of operating statements (profit and loss) and statement of financial position (balance sheets) 	B	1
<ul style="list-style-type: none"> The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period 	B	1
<ul style="list-style-type: none"> The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services 	B	1
<ul style="list-style-type: none"> Significant variances in actual / budget income and expenses are identified and corrective action taken where necessary 	A	1
Capital expenditure planning	B	1
<ul style="list-style-type: none"> There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates 	B	1
<ul style="list-style-type: none"> The plan provides reasons for capital expenditure and timing of expenditure 	B	1
<ul style="list-style-type: none"> The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan 	B	1
<ul style="list-style-type: none"> There is an adequate process to ensure that the capital expenditure plan is regularly updated and actioned 	B	1
Review of AMS	B	1
<ul style="list-style-type: none"> A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current 	B	1
<ul style="list-style-type: none"> Independent reviews (e.g., internal audit) are performed of the asset management system 	B	1

5 Asset Management System Review Observations and Recommendations

The following tables provide detailed commentary based on the findings observed during the audit process.

Table 5-1 Asset Management System Review Observations for Asset Planning

Effectiveness Criteria	Observations	Evidence reviewed
<p>Asset planning</p> <ul style="list-style-type: none"> ▪ Asset management plan covers key requirements ▪ Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning ▪ Service levels are defined ▪ 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 identified ▪ Likelihood and consequences of asset failure are predicted ▪ Plans are regularly reviewed and updated 	<p>Overview</p> <ul style="list-style-type: none"> ▪ The Shire’s sewerage system was originally constructed during 1979 and expanded in 1999. A further upgrade was carried out in 2012 to reactivate the existing oxidation pond to improve capacity and treatment of effluent. ▪ The scheme includes a gravity reticulation system, a pump station and rising main, a treatment plant and an effluent re-use scheme. ▪ The system assets are generally considered to be in good to fair condition. Our asset inspections of the above ground assets, which included the pumping station, the treatment plant, and the reuse water assets confirmed the condition of the assets. ▪ A number of assets require some maintenance and/or replacement, including the reuse water concrete tanks, which require some patching around the top of the tanks to repair cracks and spalling, and the pumping station ladder, which has missing rungs and does not meet required safety standards. ▪ Based on the incomplete recommendations from the last asset management system review, we have recommended that the Shire engages a Health and Safety consultant to assess the pumping station overflow structure to review whether the open tank needs a cover/cage and whether the ladder into the tank is required and, if it is, whether it meets the current Australian Standards for ladders. ▪ There are no capacity issues related to the reticulation system or the treatment plant. ▪ Population forecasts predict no real growth in the Shire into the near future. Population has decreased in the town with the downturn in mining and it is considered that any growth would only return the town’s population back to previous levels. Therefore, new connections are not expected to have an impact on the current system. ▪ There have been no new connections since the last asset management review. Currently there are 214 connections and 163 individual customers. <p>Asset Management Plans</p> <ul style="list-style-type: none"> ▪ The Shire has an Asset Management Plan (AMP) for its Sewerage Scheme. The current version of the AMP was reviewed and updated in August 2016. The Asset Management Plan is well structured, covers the performance areas that are the subject of this review and includes up to date data. The update of the AMP has also completed a number of recommendations from the last asset management system review. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Drawings for Shire of Morawa Sewerage Scheme (multiple PDFs and hard copies viewed at Shire Office)

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ The AMP includes an outline of the operating environment, Levels of Service, a description of the asset system and legislative requirements. ▪ Service levels are defined with respect to Customer service standards, legislative obligations and the Shire's strategic objectives. ▪ The AMP also documents a lifecycle management plan that sets out the asset register, asset condition, maintenance requirements and renewals programming. ▪ The AMP includes an assessment of future demand and notes that augmentation of the system is unlikely to be required within the next five years ▪ The AMP outlines the performance measurement procedures for the different asset types and also outlines the activities/frequency of inspections and maintenance. ▪ A financial model has been developed which includes long term capital and operating expenditure forecasts. The Asset Management Plan includes up to date financial data from this model in the Appendices. ▪ The Shire does not have a separate AMP for the assets related to the provision of its non-potable water service, and this information related to the recycled water scheme is included in the AMP. ▪ The Asset Management Plan states that the asset register will be reviewed annually in the improvement plan in Section 7.2 but that it will be reviewed every five years in Section 7.3. We recommend that the Shire revises the information provided in Section 7.3 to state that the Asset Management Plan should be reviewed annually and updated where necessary. This review process provides the opportunity to refine and keep this information up-to-date and relevant. <p>Standard Operating Procedures</p> <ul style="list-style-type: none"> ▪ The licensee has Operating Rules, Operating Procedures and Mechanical & Electrical Maintenance Procedures included in the AMP Appendices. This includes operating procedures for the pump station and maintenance procedures for inspecting, servicing and overhauling the submersible pumps and the electrical components of the pump station. <p>Asset Management System</p> <ul style="list-style-type: none"> ▪ The Shire has an Asset Management System that uses a series of linked Excel spreadsheets. The system is simplistic and was provided to the licensee by the ERA as a system that could be used by small service providers. ▪ The asset management system consists of: <ul style="list-style-type: none"> – An Asset Register – Condition & Performance Monitoring – Risk Assessment – Maintenance Management 	<ul style="list-style-type: none"> ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Shire of Morawa Infrastructure Sewerage FV Valuation as at 30 June 2015 (prepared by Griffin) ▪ Western Australia Tomorrow, Population Report No. 7, 2006 to 2026, Forecast Profile Morawa (S) Local Government Area, February 2012 ▪ Shire of Morawa Sewerage Connection Application Form ▪ Cardno, Shire of Morawa Operational Audit and Asset Management System Review, Final Report, June 2015 ▪ Shire of Morawa post-audit and post-review implementation plan actions completed, Oct 2016 ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ Shire of Morawa Customer Service Charter, September 2016

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ The AMS is used as the key tool for future asset predictions that are included into the licensee's asset planning. ▪ Although the package provided by the ERA includes a Financial Budget spreadsheet, the Shire does not utilise this spreadsheet. We recommend that the Shire uses the Financial Budget spreadsheet to consolidate all of the financial information related to the income/revenue and expenditure related to the providing the sewerage service. <p>Asset Management Planning</p> <ul style="list-style-type: none"> ▪ The CEO has the overarching responsibility for overall planning for the Shire, with the Executive Manager Development and Administration responsible for identifying what infrastructure and facilities are required and developing the Shire's Planning Scheme document. ▪ The Shire has a corporate budgeting process to review and approve any new works that have been identified. These are included in the Shire's Long-Term Financial Plan, Corporate Plan and Strategic Plan. ▪ The new version of the Shire's Planning Scheme has recently been submitted to the State Government. There are no major changes associated with the sewerage service from the last Planning Scheme. ▪ Population growth forecasts (Forecast Profile for the Morawa (S) Local Government Area, Western Australian Planning Commission) have shown uncertainty regarding growth between 2006 and 2026. The average annual growth rate has been forecast at 0.4%, compared with a low of -1.5% and a high of 1.8% over the 20 years. However, as noted previously the Shire considers that population growth will be minimal. ▪ The Risk Assessment included in the licensee's AMS has been completed but generally asset renewals are prioritised based on condition and performance. The Shire maintains spare pumps and looks to replace them before failure. It uses an annual inspection and service process to change the pumps over. The sewerage system works predominantly through gravity, which limits the mechanical and electrical assets that could fail. ▪ The mitigation and management strategies for the highest risks are included in the Asset Management Plan. Further details on the Shire's Risk Management are included in the Risk Management section of this table. ▪ The AMS forecasts a capex and maintenance program projected to 80 years based on the asset lives assigned to each type of asset and this is also included in the AMP Appendices. This forecast currently runs out to 2096 in the AMS. This is based on the lifecycle costs for assets that have been populated in the AMS. These are based on renewals of assets as they reach the end of their asset life. However, the expenditure graph extends 50 years, which is more appropriate given that some of the assets will need to be replaced at least twice in an 80 year period based on their asset life. The Investment Program included in the AMS notes "As the model calculated one replacement cycle within the 50 year forecast, short term life assets may need to be manually calculated or insert additional rows for each replacement 	

Effectiveness Criteria	Observations	Evidence reviewed
	<p>cycle". No new works for growth, levels of service or legislation have been identified in the current planning projections.</p> <ul style="list-style-type: none"> ▪ The long-term forecast shows a small predicted capital expenditure will be required in 2019 for replacement fencing at the treatment plan based on the 20 year asset life that has been assigned for the fencing. A larger expenditure of \$230,000, has been forecasted in 2029 for the replacement of assets at the pump station and effluent reuse infrastructure. As the replacements are based on assigned asset lives, it would be expected that this expenditure would be spread over a number of years. ▪ Under the Local Government Act, the licensee is required to break out their planned expenditure budget to show the estimates for capex, renewals and maintenance so that there is a clear report of the predicted costs. ▪ The Annual Operations and Maintenance module of the AMS breaks down the forecast maintenance budgets into Routine & Breakdown, Restorative and Preventative forecasts. This is completed by the licensee at asset type level rather than for each individual asset. ▪ Funding options are included in Section 5 of the AMP. The only options available to the licensee to fund its sewerage service are income from rates and reserves. The licensee does not have any loans for its sewerage or reuse services. ▪ The licensee has had a sewerage reserve that can only be used for the purpose of replacing or upgrading the Morawa sewerage system since 2008. The Shire expects to add \$70,000 to the reserve this year. At the time of review the Shire's sewerage reserve was over \$200,000, which will be used to fund the asset replacements forecasts. ▪ The licensee has to prepare business cases under Section 3.59 of the Local Government Act for new assets that are identified but not for renewal of current assets. At the present time all of the asset planning work identified by the licensee has been for renewals and this is not expected to change in the short-term. 	
<p>Asset creation/acquisition</p> <ul style="list-style-type: none"> ▪ Full project evaluations are undertaken for new assets ▪ 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"> ▪ Asset creation and acquisition is undertaken in accordance with the Shire's procurement policies and budgeting process. ▪ An overview of how assets should be acquired is included in the Section 2.3 – New Assets Creation Plan in the Asset Management Plan. ▪ This specifies that new assets will be procured through the Government Supply system, where available, or through select and public tendering on an as needs basis. ▪ When required, full project evaluations would be completed as part of the Shire's business case process required for new assets and include all life-cycle costs. This would include assessment of non-asset solutions where applicable. The Shire use a consultant to complete detailed project evaluations when required. ▪ Depending on the size of the project, business cases for new works are submitted through the Shire's budgeting process for review and approval by the Council Board. ▪ New projects are initiated when the need for them has been established. However, no new assets have been created or acquired during the review period. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ Lifecycle costs are included in the Shire's financial forecasts in order to maintain the assets through their assigned asset life. ▪ The need / requirement for new sewer assets are identified from the five year capital works program and the longer-term 80 year expenditure forecast. However, at the present time all of the identified works are for renewal of assets as they reach the end of their asset lives. ▪ No new works have been completed during the review period and no new projects have been forecast in the Shire's capital program, with the only expenditure being related to asset replacement. ▪ The Shire does not have specific testing and commissioning procedures for its active assets but would expect to include these in the conditions of contract if tendering any major work. ▪ Legal, environmental and safety obligations are documented in Section 2.2 of the Asset Management Plan. ▪ Although the AMP includes information on the recycled water scheme assets, the legal, environmental and safety obligations related to the reuse scheme are not specified in the AMP (e.g. the <i>Health Act 1911</i>, the <i>Metropolitan Water Supply and Sewerage Act 1909</i> and <i>Environmental Protection Act 1986</i>). We recommend that the legislative requirements associated with the licensee's reuse scheme are included in the next update of the AMP. 	<ul style="list-style-type: none"> ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Western Australia Tomorrow, Population Report No. 7, 2006 to 2026, Forecast Profile Morawa (S) Local Government Area, February 2012 ▪ Shire of Morawa Sewerage Connection Application Form ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ CCTV Survey Report, 2014
<p>Asset disposal</p> <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"> ▪ An overview of how assets should be disposed of is included in the Section 3.3 – Assets Disposal Plan in the Asset Management Plan. ▪ This states that the 'Assets at the end of their life will be replaced with an asset of similar capacity. The old asset will be dumped or recycled for scrap as appropriate. Assets being renewed will be disposed of as required.' ▪ The Shire regularly inspects its facility assets, typically daily inspections are conducted at the treatment plant. Any asset deficiencies of condition and performance are noted. ▪ The Shire undertakes assessment of the condition and performance of other assets, including CCTV for sewers and monitoring operational data such as pump run times or the electricity used by the pump station. ▪ The water service system (both sewer and non-potable water service works) are considered relatively basic in concept and nature. Demand is within capacity and population forecasts indicate low growth for the Shire, although the Shire expects no real growth, with any population increase returning the population of the town to previous levels. As such the need for disposing of assets surplus to requirements is unlikely in the foreseeable future with limited surplus availability within the asset base. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ The <i>Local Government Act 1995</i> sets the policy framework for asset disposal and the licensee disposes of its sewerage assets in accordance with Section 3.58 of the Act. The licensee follows the <i>Australian Accounting Standards</i> to register asset disposal in its financial accounts. ▪ The Shire has a renewal/ replacement program developed for the asset base based on asset age and condition (for sewerage water service works). A like-for-like replacement (or repair of the sewer main) is typically the most appropriate option, with the failed asset disposed of. Assets such as buried pipes, manholes, or worn out plant and equipment are unlikely to have any second hand market value. These assets would normally be left in ground or disposed of to landfill. ▪ The Shire uses an work sheet template for assessing under-utilised or under-performing assets. Such assets are also identified in the AMS using knowledge gained from site and historical information such as asset performance, failures and age. Assets are continually reviewed in the AMS. Asset condition is also externally assessed as part of the asset valuations required under the Local Government Act. ▪ The Shire has an annual inspection program for each of its assets that forms part of its annual budgeting process. ▪ Condition and performance are recorded in the Asset Management System. ▪ No assets have been disposed in the review period and no assets have been identified for disposal in the AMP or AMS. 	<ul style="list-style-type: none"> ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Western Australia Tomorrow, Population Report No. 7, 2006 to 2026, Forecast Profile Morawa (S) Local Government Area, February 2012 ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ CCTV Survey Report, 2014
<p>Environmental analysis</p> <ul style="list-style-type: none"> ▪ Opportunities and threats in the system environment are assessed ▪ Performance standards (availability of service, capacity, continuity, emergency response, etc.) are measured and achieved ▪ Compliance with statutory and regulatory requirements ▪ Achievement of customer service levels 	<ul style="list-style-type: none"> ▪ Section 1.3 Asset Environment included in the AMP provides an overview of the physical environment that the Shire's assets are operating in. ▪ The Shire has identified statutory and regulatory requirements in its Section 2.2 of the AMP. However, it makes reference to the <i>Water Services Licensing Act 1995</i> which has been superseded by the <i>Water Services Act 2012</i>. We recommend that the AMP be updated to reflect the new legislative framework at the next review of the document. ▪ The Shire has developed a series of simple annual compliance registers that currently go out to 2018 based on a recommendation that was included in the last asset management system review report. The register lists all of the compliance and legislative reporting requirements for each month in the year. The compliance register is reviewed and updated annually to assist in keeping track of its statutory and confirm the regulatory obligations in the year. However, we note that the Shire submitted its 2016 annual performance reporting datasheets to the ERA one month after the deadline. ▪ Risk assessment is undertaken within the AMS. We consider that this assessment provides the Shire with a sound understanding of its operating environment. Further details are provided in the Risk Management section of this table. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ Levels of Service and the performance measurement procedures that the licensee uses to assess performance against the service levels have been included in the Asset Planning section of this table. ▪ During the review period, the licensee has only experienced one sewer blockage and no overflows. ▪ The Shire complied with its DEC licence requirements in 2015 (as reported to DEC in February 2016). The 2016 Annual Report to the DEC is not yet due but the Shire complied with its licence requirements during the 2016 calendar year. ▪ Outside of reporting requirements there does not appear to be further historical analysis of the Shire's performance against its levels of service. Pump run times are monitored and recorded but no ongoing trending analysis is completed. Pump run times are used to check and compare the pumping station's two pumps against each other and to assess whether any of the pumps should be taken out of service and replaced by one of the Shire's spare refurbished pumps. ▪ As noted previously, the Shire's sewerage scheme runs predominantly on gravity. Although there is a pump station, the flow into it can also gravity feed to the treatment plant. As such, there is little operational performance data that can be used for trending purposes. ▪ The licensee's recycled water scheme was assessed by a representative from the Department of Health (DoH) in February 2015. The resulting assessment report identified a number of areas where the licensee was not compliant with the requirements of the <i>Guidelines for the Non-Potable Uses of Recycled Water in Western Australia, August 2011</i>. ▪ The key non-compliances and areas that were identified as needing attention in the assessment report were: <ul style="list-style-type: none"> – storage material inside the treatment plant should be removed – Some vegetation on the banks of the primary pond needs to be removed – All above ground pipes and fittings, including the sampling tap, should be painted purple in accordance with AS 3500.5:2000 – Desludge of the second pond as planned by the Shire is recommended – Pump leak at treatment plant needs to be fixed – Treatment plant pump shed requires some cleaning and maintenance – Shire to install a disinfection system to produce 'fit for purpose' recycled water in a reliable and consistent manner – Pipe inlet to the storage dam needs to be installed to minimise bank erosion – Floor of storage dam shed needs to be fixed and shed requires some cleaning – Roof of first concrete storage tank needs to be installed – Roof of second concrete storage tank needs to be sealed to minimise mosquito breeding – Maintenance of storage tank pump shed is required – Vegetation close to the storage tanks fence needs to be removed 	<ul style="list-style-type: none"> ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Shire of Morawa Policy Manual, February 2016 ▪ Shire of Morawa Infrastructure Sewerage FV Valuation as at 30 June 2015 (prepared by Griffin) ▪ Western Australia Tomorrow, Population Report No. 7, 2006 to 2026, Forecast Profile Morawa (S) Local Government Area, February 2012 ▪ Shire of Morawa Section B Excerpt from AACR for DER 2015 report ▪ Shire of Morawa Complaints Procedure Wastewater ▪ Shire of Morawa post-audit and post-review implementation plan actions completed, Oct 2016 ▪ Shire of Morawa WWTP Compliance Calendars 2016/2017/2018 ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ Shire of Morawa 2014-2015 ERA Reporting Datasheets ▪ Shire of Morawa Water, Sewerage and Irrigation

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> - Shire to change site code and continue the monthly sampling program as per the DoH's conditions of approval - The recycled water quality is above the Low Exposure Risk Level water quality objectives at times - Restricted access signs at the entrance to the treatment plant, storage dam and storage tanks compound needs to be installed - Additional signage as per the DoH's conditions of approval is required at the irrigated areas - There is a lack of written procedures in terms of an operation management plan for the irrigation system ▪ We confirmed that the Shire has completed the majority of these actions. However, the disinfection system has not yet been installed. The DoH have been notified of the Shire's progress and current situation, with the disinfection system expected to be installed within the next two months. ▪ There was also a requirement for the Shire to develop a Recycled Water Quality Management Plan by the end of 2016 that has not yet been completed. More details on this matter are included in the Risk Management section of this table. ▪ The Shire has a Nutrient and Irrigation Management Plan in place and which can be used to develop the Recycled Water Quality Management Plan. This document was prepared by the Shire's contract Environmental Health Officer in March 2016 and covers the project setting, location and descriptions of the effluent reuse assets, site management activities and a summary of actions related to the reuse system to be completed. This includes the monitoring of the reused effluent each month. 	<ul style="list-style-type: none"> Licence Performance Reporting Datasheets 2016 ▪ Shire of Morawa Annual Audit Compliance Report & AER 2015 ▪ Shire of Morawa DER 2015 Annual Report ▪ Shire of Morawa ERA Compliance Report 2015 ▪ Shire of Morawa ERA Compliance Report 2016 ▪ Shire of Morawa Contingency Plans ▪ Shire of Morawa Customer Service Charter, September 2016 ▪ Shire of Morawa Complaints Registers 2015, 2016 ▪ Multiple spreadsheets with sewage treatment plant sampling results ▪ Annual Report from Shire of Morawa to Department of Environment and Conservation for 2014 ▪ Department of Environment and Conservation annual audits for 2012, 2013 and 2014 ▪ Shire of Morawa Nutrient and Irrigation Management Plan ▪ Department of Health – Morawa Town Recycled Water Scheme – Assessment Report and Department of Health Conditions of Approval, February 2015
Asset operations	Policies	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for

Effectiveness Criteria	Observations	Evidence reviewed
<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, an assessment of assets' physical/structural condition and accounting data ▪ Operational costs are measured and monitored ▪ Staff resources are adequate and staff receive training commensurate with their responsibilities 	<ul style="list-style-type: none"> ▪ The Goals and Objectives of the Sewer and Reuse Scheme included in Section 1.2 of the AMP provides a very high level outline of the licensee's overall objectives in its provision of its services. ▪ The AMP includes an overview of the assets in Section 1.4. ▪ Section 2.5 Levels of Service provides an overview of the key service criteria, the service characteristics, target level of service and the performance measurement procedure for the reticulation assets, including the pump station, treatment plant assets and effluent reuse assets. This information, together with the maintenance and inspection plans included in Section 4, Lifecycle Management Plan, in the AMP, infer how the assets are operated. The Shire's Operating Rules, Operating Procedures and Maintenance Procedures are included in the appendices. ▪ Where appropriate, the manufacturer's operating instructions/manuals are kept and used by the works and maintenance staff. <p>Operational / Maintenance Procedures and Tasks</p> <ul style="list-style-type: none"> ▪ The Shire has Operating Rules, Operating Procedures and Mechanical & Electrical Maintenance Procedures included in the AMP Appendices. This includes operating procedures for the pump station and maintenance procedures for inspecting, servicing and overhauling the submersible pumps and the electrical components of the pump station. ▪ A Works Register is used to record any asset issues and the repair work completed. The Condition and Performance module of the AMS includes the inspection program and allows inspection findings to be recorded against each asset. ▪ Pump run times are recorded on the Works Register log sheet and the annual end of year details are transferred into the Condition and Performance module of the AMS. ▪ The Shire uses a complaint form for logging external complaints from customers. No complaints related to the sewerage service have been received during the review period. ▪ Water quality samples are taken in accordance with the Department of Health's requirements. Two samples a year are taken from the storage dam and monthly samples are taken at the sports oval where the treated effluent is reused for irrigation purposes. These are couriered to Perth for testing by accredited laboratories. ▪ The Shire has a sampling procedure that sets out the procedures for where, when and how the samples are taken as well as the transportation processes, health and safety information, the receiving the test result and external reporting requirements and procedures. ▪ PathWest carry out the monthly <i>E.coli</i> testing and ChemCentre carry out the more detailed analysis (e.g. Biological Oxygen Demand, Total Dissolved Solids, Total Suspended Solids, Total Nitrogen, Total Phosphorus) for the twice a year analysis. The laboratories provides a report of the results and the Shire also provides this information to the Department of Health. ▪ There is substantial redundancy in the system, e.g. the storage volume in the ponds and the effluent reuse dam. The Shire keeps spares of most critical equipment (e.g. pumps) and there are contractors available in town to carry out repair works at short notice. 	<p>Sewerage and Effluent Reuse Scheme Assets, Updated August 2016</p> <ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Shire of Morawa Policy Manual, February 2016 ▪ Shire of Morawa Section B Excerpt from AACR for DER 2015 report ▪ Shire of Morawa Sewerage Connection Application Form ▪ Shire of Morawa Complaints Procedure Wastewater ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ Shire of Morawa 2014-2015 ERA Reporting Datasheets

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ Maintenance work on the sewerage and recycled schemes is predominantly reactive at the present time. However, pump run times are used to check and compare the pumping station's two pumps against each other and to assess whether any of the pumps should be taken out of service and replaced by one of the Shire's spare refurbished pumps. <p>Risk Management</p> <ul style="list-style-type: none"> ▪ As noted previously, a risk management tool is built into the licensee's AMS. This is used, together with performance, condition and age data recorded in the AMS to identify possible future asset issues and prioritise them for renewal/refurbishment. ▪ Further comments on the Shire's Risk Management policies, processes and performance are included in the Risk Management section of this table. <p>Asset Register</p> <ul style="list-style-type: none"> ▪ The licensee's asset register is recorded in the AMS. The worksheets capture the asset attributes for access chambers, gravity mains pipes, pump stations, the WWTP and the reuse scheme assets. ▪ The details included for each asset include: <ul style="list-style-type: none"> – asset reference numbers – asset name – description/location – installation date – asset life – Condition based remaining life – Age based remaining life – Replacement value – Planned replacement year – Current replacement value ▪ We note that the asset register does not record the pipe diameters or materials. The Asset Management Plan does provide information on pipe sizes and diameters. We recommend that the Shire revises its asset register to include this information at the next update of the AMS. ▪ We note that the asset register does not provide any information on asset sizes/dimensions (e.g. pump and motor sizes/capacities, treatment plant pond sizes, storage tanks capacities) or materials (e.g. storage tanks). We recommend that the Shire revises its asset register to include this information at the next update of the AMS. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Water, Sewerage and Irrigation Licence Performance Reporting Datasheets 2016 ▪ Shire of Morawa Annual Audit Compliance Report & AER 2015 ▪ Shire of Morawa DER 2015 Annual Report ▪ Shire of Morawa ERA Compliance Report 2015 ▪ Shire of Morawa ERA Compliance Report 2016 ▪ Shire of Morawa Customer Service Charter, September 2016 ▪ Shire of Morawa Complaints Registers 2015, 2016 ▪ Multiple spreadsheets with sewage treatment plant sampling results ▪ Annual Report from Shire of Morawa to Department of Environment and Conservation for 2014 ▪ Department of Environment and Conservation annual audits for 2012, 2013 and 2014 ▪ Shire of Morawa Nutrient and Irrigation Management Plan ▪ Department of Health – Morawa Town Recycled Water Scheme – Assessment Report and Department of Health Conditions of Approval, February 2015 ▪ Shire of Morawa Works Register log sheets

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ We note that the rising main from the pump station to the treatment plant is not recorded as a rising main pipe and recommend that this updated in the next review of the AMS. ▪ The asset register is used as the base data template for other information recorded in the AMS, e.g. condition and performance data, dates of inspection and refurbishment works. ▪ The asset register also provides a provisional replacement value. <p>Asset Costs</p> <ul style="list-style-type: none"> ▪ Financial/accounting costs associated with the licensed services are recorded in the Shire's main finance system (Synergy). ▪ The Shire's sewerage activities have their own sub-program in the budget which was not in place at the time of the last asset management system review. This allows the Shire to identify income and expenses for the sewerage service as standalone financial data. ▪ The Sewerage Scheme Maintenance cost centre is used to record the operations and maintenance costs associated with the sewerage and reuse systems in the Shire's Synergy financial system. Sub-codes under the cost centre includes salary & wages, materials, electricity, labour overheads, service contracts, water, insurance and overheads. ▪ The costs associated with the effluent reuse assets are also recorded under the sewerage service sub-program cost codes. ▪ Energy bills and invoices go through the licensee's corporate system and are forwarded to the CEO for sign-off. All costs are recorded against the ongoing annual operations budget. The Shire's electricity service provider invoices the Shire on a bi-monthly basis. ▪ The operational budget is developed by the CEO with input from other members of staff. The previous year's budget is the starting point, with any new expenditure needing to be approved by the Council. ▪ The Shire has a Long-Term Financial Plan for the ten year period 2012-2022. The financial program is also included in the Asset Management System (and in the Asset Management Plan) that captures the capital replacement and ongoing recurrent costs associated with operating and maintaining the assets. <p>Staff Resources</p> <ul style="list-style-type: none"> ▪ The Works Supervisor is responsible for day to day operation and inspection of the sewerage scheme. The Works Supervisor has adequate experience and training to fulfil their duties. They demonstrated a good level of understanding of the system, its assets and associated operating procedures during the review. ▪ The Shire has a total of 11 staff involved with infrastructure operations and maintenance work. Approximately 4.5 Full Time Equivalents (FTEs) are used in the management of the sewerage and treated effluent system assets but additional resources can be used if required. ▪ The Shire uses a number of contractors to assist with the operation and maintenance of the sewerage system. These include an Environmental Health Inspector, pest control contractors, a local plumber for installing new sewer lines when required, a local electrician for carrying out 	<ul style="list-style-type: none"> ▪ Examples of monthly Council reports

Effectiveness Criteria	Observations	Evidence reviewed
	<p>electrical work when required, a contracted company to undertake desludging of the treatment ponds, and an engineering consultant to carry out work for any larger projects that have been identified.</p> <ul style="list-style-type: none"> The Shire considers that the staff resources are adequate for the work completed outside of the contracted work. The training and skill sets of the Shire's staff are considered to be adequate for the assets that form the sewerage and non-potable schemes. The geographic location of the Shire and the size of the sewerage and non-potable water schemes means that it is cost effective for the Shire to rely on contractors to complete specialist work activities. 	
<p>Asset maintenance</p> <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 	<p>Policies and Procedures</p> <ul style="list-style-type: none"> Refer to previous section for details of policies and procedures. <p>Asset Inspections</p> <ul style="list-style-type: none"> The Shire undertakes visual inspection of the network and treatment plant regularly. Observations are recorded on a record sheet The Shire includes its annual inspection activities in its Planned Work Program each year. The program includes inspection activities for the Shire's Gravity Mains, Pressure Mains, Sewer Pump Station, Wastewater Treatment Plant and Re-use Scheme assets Asset inspections are recorded in the AMS. In addition, the Shire completes a program of CCTV of its sewer network every three years. This inspection program assesses the condition of the below ground assets and identifies any areas within the pipe network in poor condition that need to be addressed. The CCTV inspection of the Shire's sewers was last completed in 2015 and is due to be repeated next year. A desktop review of asset condition was completed as part of the preparation of the Shire's latest revision of its Asset Management Plan. The information used in this review was taken from the 2015 valuation of the sewerage assets. This forms a high level assessment of the asset condition. The system assets are generally considered to be in good to fair condition. Our asset inspections of the above ground assets, which included the pumping station, the treatment plant, and the reuse water assets confirmed the condition of the assets. We noted at our site inspection that a number of assets require some maintenance and/or replacement, including the reuse water concrete tanks, which require some patching around the top of the tanks to repair cracks and spalling, and the pumping station ladder, which has missing rungs and does not meet required Australian safety standards. The ladder is expected to be replaced in the next few weeks and we confirmed the scope of works and cost of the work in the proposal letter received from the contractors that the Shire has engaged to complete the replacement. Based on the incomplete recommendations from the last asset management system review, we have recommended that the Shire engages a Health and Safety consultant to assess the pumping station overflow structure to review whether the open tank needs a cover/cage and 	<ul style="list-style-type: none"> Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance Asset Register spreadsheet Asset Renewal Programming spreadsheet Condition and Performance Monitoring spreadsheet Maintenance Management spreadsheet Risk Assessment spreadsheet Shire of Morawa Long-Term Financial Plan 2012 - 2022 Shire of Morawa Budget for 2016/17 Shire of Morawa Corporate Business Plan, 20 June 2013 Shire of Morawa Policy Manual, February 2016 Shire of Morawa Complaints Procedure Wastewater

Effectiveness Criteria	Observations	Evidence reviewed
	<p>whether the ladder into the tank is required and, if it is, whether it meets the current Australian Standards for ladders.</p> <p>Maintenance Plans</p> <ul style="list-style-type: none"> ▪ The Shire's Planned Work Program, that includes planned maintenance tasks, is included in the Asset Management Plan appendices. The Shire's planned work is carried out in accordance with the program and we confirmed during the review that generally work is completed on schedule. Any tasks that cannot be completed are recorded on the Shire's work sheet and re-scheduled as appropriate. ▪ Section 3.16 of the AMP also provide an overview of the inspection and maintenance schedule. ▪ The licensee has an Operating Rules, Operating Procedures and Mechanical & Electrical Maintenance Procedures included in the AMP Appendices. This includes operating procedures for the pump station and maintenance procedures for inspecting, servicing and overhauling the submersible pumps and the electrical components of the pump station. <p>Asset Failure Analysis</p> <ul style="list-style-type: none"> ▪ When assets fail, the Shire investigates to identify the cause of failure and uses this information to refine its asset management practices. ▪ The AMP is reviewed annually and any failures that have occurred and been recorded in the AMS are considered in the budget cycle and the operation/maintenance plans. <p>Risk Management</p> <ul style="list-style-type: none"> ▪ Refer to previous section for details of risk management included in the AMS. ▪ The risk assessment referred to under Environmental Analysis makes reference to relevant maintenance tasks demonstrating that the Shire has considered risk in planning its maintenance <p>Maintenance Costs</p> <ul style="list-style-type: none"> ▪ Maintenance costs are recorded against costs codes in Synergy, the Shire's main finance system. The Shire has a Sewerage Scheme maintenance cost centre with sub-codes under this. ▪ All sewerage maintenance costs are recorded against the ongoing annual operations budget. ▪ Further details related to the management of the Shire's maintenance costs are provided in the Financial Planning section of this table. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Complaints Registers 2015, 2016 ▪ Shire of Morawa Works Register log sheets ▪ Shire of Morawa CCTV Sewer Pipe Survey 2014 ▪ Examples of monthly Council reports
Asset management information system	<p>Overview</p> <ul style="list-style-type: none"> ▪ The Shire's asset management information system is based around the following components: 	<ul style="list-style-type: none"> ▪ Live demonstration of licensee's systems including

Effectiveness Criteria	Observations	Evidence reviewed
<ul style="list-style-type: none"> ▪ Adequate system documentation for users and IT operators ▪ Input controls include appropriate verification and validation of data entered into the system ▪ Logical security access controls appear adequate, such as passwords ▪ Physical security access controls appear adequate ▪ Data backup procedures appear adequate and backups are tested ▪ Key computations related to licensee performance reporting are materially accurate ▪ Management reports appear adequate for the licensee to monitor licence obligations 	<ul style="list-style-type: none"> – The Asset Renewal spreadsheet which records all assets, their age, remaining life and valuation and replacement cost data – Asset condition information is stored in the 'condition and performance' spreadsheet – “As Constructed” drawings are stored in the Shire office – The maintenance schedule spreadsheet – Risk Assessment for the scheme and the assets is included in the Risk Assessment spreadsheet – Asset Valuations are included in the Asset Renewal for all assets – Synergy Soft – corporate financial system – The Sewerage and Effluent Reuse Scheme Asset Management Plan and other management plans <ul style="list-style-type: none"> ▪ Manuals and other documentation are maintained for the licensee’s corporate systems. ▪ For the scale of the scheme, the AMS is considered to be fit-for-purpose. We have made a number of recommendations related to improving the asset register previously in this report. <p>Data Entry</p> <ul style="list-style-type: none"> ▪ The data is only generally verified and validated on input, although ad hoc reporting is used to identify and rectify any errors in the input information. This approach would be expected given the Shire’s resources and the assets it manages, and no remedial action is considered necessary to improve its data entry processes. <p>Management Reports</p> <ul style="list-style-type: none"> ▪ There is no regular internal management reporting related to the sewerage system. Licence obligations are continually monitored but would only be expected to be reported upwards to the CEO when issues are experienced and to the Council if required. Generally management reports on the sewerage system would only be prepared if there were financial implications or compliance issues. ▪ The current licence does not impose performance standards for sewerage and non-potable water. Any key activities related to the operation of the sewer network would only be included in the Annual Report by exception. ▪ Sampling and monitoring data related to the recycled water scheme is reported to the Department of Health. ▪ The Shire also provides an annual report to Department of Environmental Regulation relating to its licence requirements for operating the treatment plant. <p>Security Access of System</p> <ul style="list-style-type: none"> ▪ The asset management information is stored on the Shire’s network drive and subject to the Shire’s standard data back-up and data retention practices. 	<p>Synergy and the network drive</p> <ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Drawings for Shire of Morawa Sewerage Scheme (multiple PDFs and hard copies viewed at Shire Office) ▪ Shire of Morawa Infrastructure Sewerage FV Valuation as at 30 June 2015 (prepared by Griffin) ▪ Multiple spreadsheets with sewage treatment plant sampling results ▪ Shire of Morawa Works Register log sheets

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ Other documents relating to management of the sewerage scheme are also stored on the network drive. This includes records of performance and reporting data as well as correspondence. ▪ The network drive is regularly backed up as part of the Shire's standard IT maintenance procedures. ▪ All systems are backed up offsite and overnight every day by an IT consultant based in Dongara. ▪ Access to the systems is governed by the Shire-wide access protocols. Users are required to log on to the network to gain access to the network drive. ▪ Access to the AMS server is not password restricted and can be accessed by any members of the licensee's staff. Given the small number of staff in the licensee's office and the type of information stored on the AMS server, we consider that this is acceptable. ▪ Some areas of the Shire's management system (e.g. finance information in Synergy) have different levels of authorisation and have an audit trail if changes are made. ▪ We consider that the Shire's asset management information system is fit for purpose given the Shire's size and water service activities. 	
<p>Risk management</p> <ul style="list-style-type: none"> ▪ Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system ▪ Risks are documented in a risk register and treatment plans are actioned and monitored ▪ The probability and consequence of risk failure are regularly assessed 	<ul style="list-style-type: none"> ▪ The Shire has a risk assessment relevant to its assets that is in accordance with the risk assessment approach set out in ISO31000. ▪ As noted previously, the Shire's risk management tool for its sewerage and reuse systems are built into the licensee's AMS. This is used, together with performance, condition and age data recorded in the AMS to identify possible future asset issues and prioritise them for renewal/refurbishment. ▪ Two separate assessments have been developed for the risks of failing to meet the requirements of the operating licence and for the risks associated with the assets themselves. ▪ However, we observed that although the Risk Register has been updated to include the effluent reuse assets, it does not include any risk related to the water quality of the effluent. We recommend that the risk event of reused effluent being of unsuitable quality for irrigation of the sports oval be included in the next review of the Register. ▪ There was a requirement for the Shire to develop a Recycled Water Quality Management Plan by the end of 2016 that has not yet been completed. The Shire is waiting for the disinfection system installation to be completed prior to the Recycled Water Quality Management Plan being prepared. As such, the Plan should be completed within the next few months. The Recycled Water Quality Management Plan will need to include a detailed Health Risk Assessment in accordance with the <i>Guidelines for the Non-Potable Uses of Recycled Water in Western Australia, August 2011</i>. We have included the completion of these outstanding items as recommendations in this report. ▪ Risk management related to the treated effluent reuse supply are included in the AMS. However, we observed that although the Risk Register has been updated to include the effluent reuse assets, it does not include any risk related to the water quality of the effluent. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Policy Manual, February 2016 ▪ Shire of Morawa Contingency Plans ▪ Department of Health – Morawa Town Recycled Water Scheme – Assessment Report and Department of Health Conditions of Approval, February 2015

Effectiveness Criteria	Observations	Evidence reviewed
	<p>We recommend that the risk event of the reused effluent not being of suitable quality to be used for irrigation of the sports oval be included in the next review of the Register.</p> <ul style="list-style-type: none"> ▪ The risk consequences related to customers and community are assessed and used to derive an overall consequence score based on the maximum individual score. The licensee's risk assessment does not include risk consequences associated with the water licence, financial impact, the environment or workplace health and safety. We recommend that the Shire's risk assessment be updated to include these risks when the register is next reviewed. ▪ Likelihood scores are used to assign inherent risk scores to each element in the assessment. ▪ The mitigation and management strategies for the highest risks are included in the Asset Management Plan. These cover the risk events of Earthquake, Major Storm, Wet Well Pump Failure, Unexpected Demand, Illegal Load and Pipe/Manhole Collapse. ▪ However, the Shire has recognised that the main risk event impacting on the sewerage service is power outages and this is not included in the risk assessment. The Shire has recently developed a Contingency Plan and this includes mitigation actions related to power outages. We recommend that this risk event is included in the next review of the Risk Register. ▪ The Risk Register is reviewed annually and was last reviewed and updated in August 2016 as part of the update of the Shire's Asset Management Plan. The review was not completed in 2015 as the Shire was unaware of the requirement to do this as a result of staff changes. As this issue has been addressed, there is no requirement for any remedial action. 	
<p>Contingency planning</p> <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"> ▪ The Shire has developed a Contingency Plan after the end of the review period but prior to the completion of this report. As the Contingency Plan was not in place during the review period, we are required to recommend that the Shire develops a Contingency Plan. ▪ The Contingency Plan that the Shire has developed sets out the incident classification and notification processes. A flowchart for the actions associated with wastewater overflow responses is also included. ▪ The Plan includes an Emergency Contact List that includes internal and external contacts. This includes contractors that could be called upon to provide assistance. ▪ The Shire recognised that with the power outages that affect the pumping station, it only has approximately 24 hours of capacity at the pumping station before this would overflow. The strategies for mitigating this major risk have been addressed in the Contingency Plan. ▪ In addition to power outages, the Plan also addresses contingency for fire, earthquake, wet well pump failure, unexpected demand, illegal load, pipe/manhole collapse and other issues (e.g. algae/weed issues). The Plan lists the key actions to be completed for each event and provides a list of key contacts. Incident classification and notification processes are also covered. ▪ The Contingency Plan does not include any information related to incident management for the non-potable water supply. The licensee has committed to developing a Recycled Water Quality Management Plan by June 2016. This will include a detailed Incident Management Plan in accordance with the <i>Guidelines for the Non-Potable Uses of Recycled Water in Western Australia, August 2011</i>. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Policy Manual, February 2016 ▪ Shire of Morawa Contingency Plans ▪ Department of Health – Morawa Town Recycled Water Scheme – Assessment Report and Department of Health Conditions of Approval, February 2015

Effectiveness Criteria	Observations	Evidence reviewed
	<ul style="list-style-type: none"> ▪ The Incident Management Plan for inclusion in the Recycled Water Quality Management Plan will need to include classification, notification processes, emergency response and communications, containment and remediation procedures and incident cause and investigation procedures. ▪ In our review of the recommendations from the last asset management system review, we have recommended that the Shire conducts a desktop test of its Contingency Plan during 2017 (recurring annually) using a mock scenario to test and confirm that its mitigation strategies and the listed actions under each strategy are appropriate. ▪ The Shire also has Local Emergency Management Arrangements which form its overall disaster management plan. This covers events such as fire, storms, flooding, chemical spills, etc. ▪ The Shire has a contract Emergency Manager that works with the Shire and three other local Councils. ▪ The Shire has an IT Recovery Plan that was developed by its IT contractor, the same organisation that provides the external back-up of the Shire's IT networks. ▪ The Shire's sewerage pump station has two pumps that alternate in a duty/standby mode of operation. The Shire also has two spare pumps. The recycled water scheme only has one pump but this is not considered to be a critical asset and can be easily replaced if required. ▪ The Shire is generally able to hire a generator locally if required. The alternative is hiring one from Geraldton which is a four hours round trip away from Morawa. The wet well has a capacity of approximately 24 hours which provides sufficient time for the Shire to manage any outage. Council is considering buying its own emergency generator and this is expected to be included in the 2017/18 budget. ▪ The Shire has access to local farm tankers if required to pump out from the pump station in emergency situations. ▪ The Shire uses a number of contractors to assist with the operation and maintenance of the sewerage system. These include local plumbers and electricians who can be called upon in emergencies. 	
<p>Financial planning</p> <ul style="list-style-type: none"> ▪ The financial plan states the financial objectives and strategies and actions to achieve the objectives ▪ 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) 	<p>Overview</p> <ul style="list-style-type: none"> ▪ Financial planning is carried out in accordance with the requirements of the Local Government Act. ▪ The licensee undertakes its financial planning for its sewerage service in accordance with its Integrated Planning Framework used to develop a ten year Corporate Plan. The Shire's current Corporate Plan is for the period 2012-2022. ▪ The overall responsibility for the Shire's financial planning lies with the CEO and Financial Officer. ▪ An overview to financial planning for the sewerage service is outlined in Section 5 of the Asset Management Plan. This includes a summary of the financial objectives, a description of the Shire's accounting/financial systems and an overview of the capital investment program for 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 ▪ Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance

Effectiveness Criteria	Observations	Evidence reviewed
<ul style="list-style-type: none"> ▪ The financial plan provide firm predictions on income for the next five years and reasonable indicative predictions beyond this period ▪ The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services ▪ Significant variances in actual / budget income and expenses are identified and corrective action taken where necessary 	<p>the next five year period. The renewal program in included in Appendix B of the Asset Management Plan.</p> <ul style="list-style-type: none"> ▪ The Shire’s Long-Term Financial Plan and Annual Budgets include revenue projections, capital expenditure forecasts and recurrent costs associated with operating and maintaining the sewerage service. This information is used to forecast actual and forecast profit/loss and statements of financial position. ▪ Income forecasts and ongoing general operations and maintenance budgets are based on the previous year’s expenditure and inflated using a local government index that is provided by the Western Australian Local Government Association (WALGA), and refined where required. <p>Expenditure Forecasts</p> <ul style="list-style-type: none"> ▪ The AMS forecasts a capex and maintenance program out to 80 years based on the asset lives assigned to each type of asset and the lifecycle costs for that have been populated in the AMS. These are based on renewals of assets as they reach the end of their asset life. However, the expenditure graph extends 50 years, which is more appropriate given that some of the assets will needs to be replaced at least twice in an 80 year period based on their asset life. The Investment Program included in the AMS notes “As the model calculated one replacement cycle within the 50 year forecast, short term life assets may need to be manually calculated or insert additional rows for each replacement cycle”. ▪ The expected maintenance costs are recorded in the AMS against the different asset types in the Maintenance worksheet of the Asset Renewal Programming module. ▪ The maintenance budget included in the AMS has been broken down into for routine & breakdown, restorative and preventive maintenance at an asset type level, as opposed to being developed for each individual asset. However, only forecasts for preventive (e.g. planned) maintenance have been included in the forecasts. ▪ With the exception of the renewals program, the Asset Management Plan does not include any financial forecast data related to the operations and maintenance of the sewerage and reuse systems. We recommend that the Shire includes a five year financial plan that includes the breakdown of the revenue/income and different components of the expenditure (e.g. electricity, materials, labour, licensing costs, contractor expenditure, overheads, insurance etc.) and the forecast money to be put into the sewerage reserve fund, in order to provide the financial movements in each year and the overall annual financial situation over the period. The Shire has this information included in its financial plan as well as the actual costs incurred in the year recorded in Synergy so providing this financial overview and forecast in the Asset Management Plan should be a reasonably straightforward process. ▪ Replacement costs for the sewer network are based on unit rates. The asset valuations used in the financial forecasts for asset replacements are based on the 2015 valuation of the Shire’s sewerage assets. ▪ The long-term forecast shows a small predicted capital expenditure will be required in 2019 for replacement fencing at the treatment plan based on the 20 year asset life that has been assigned for the fencing. A larger expenditure of \$230,000 has been forecasted in 2029 for the replacement of assets at the pump station and effluent reuse infrastructure. As the 	<ul style="list-style-type: none"> ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Shire of Morawa Policy Manual, February 2016 ▪ Shire of Morawa Infrastructure Sewerage FV Valuation as at 30 June 2015 (prepared by Griffin) ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ Examples of monthly Council Reports ▪ Examples of monthly Council meeting minutes ▪ Shire of Morawa Annual Reports 2015 ▪ Financial data in Synergy System

Effectiveness Criteria	Observations	Evidence reviewed
	<p>replacements are based on assigned asset lives, it would be expected that this expenditure would be spread over a number of years.</p> <p>Sources of Funds</p> <ul style="list-style-type: none"> ▪ Funding options are included in Section 5 of the AMP. The only options available to the licensee to fund its sewerage service are income from rates and reserves. The licensee does not have any loans for its sewerage or reuse services. ▪ No new works for growth, levels of service or legislation have been identified in the current planning projections. ▪ The licensee has had a sewerage reserve that can only be used for the purpose of replacing or upgrading the Morawa sewerage system since 2008. The Shire expects to add \$70,000 to the reserve this year. At the time of review the Shire's sewerage reserve was over \$200,000, which will be used to fund the asset replacements forecasts. <p>Reporting Financial Information</p> <ul style="list-style-type: none"> ▪ The Shire has developed a separate sub-program for the sewerage service since the last asset management system review. This allows the Shire to identify income and expenses for the sewerage service as standalone financial data. ▪ The Sewerage Scheme Maintenance cost centre is used to record the operations and maintenance costs associated with the sewerage and reuse systems in the Shire's Synergy financial system. Sub-codes under the cost centre includes salary & wages, materials, electricity, labour overheads, service contracts, water, insurance and overheads. ▪ Variances in expenditure are identified and tracked monthly for operating expenditure and as needed for capital expenditure. Monthly finances are reported to Council and variances over 5% or more than \$10,000 are reported as exceptions. Where required, corrective action can be taken. We witnessed evidence of variance tracking and analysis in examples of the monthly reports from Synergy Soft. ▪ We also confirmed that the sewerage service budgets and expenditure are included in the overall financial planning carried out by the licensee. ▪ There is a formal process for reporting the financial data to Council as part of the budgeting preparation process. The report also includes the actual capital spend against the proposed budget. The formal review process takes place in February each year and is used to predict the expected expenditure for the rest of the financial year, with adjustments made where required in order for the Shire to meet its budgeted program. 	
<p>Capital expenditure planning</p> <ul style="list-style-type: none"> ▪ There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates 	<ul style="list-style-type: none"> ▪ The responsibility for developing the capital expenditure budget lies with the CEO and the Executive Manager Development & Administration, with input from other senior members of the licensee's staff where required. ▪ The capital expenditure plan forms part of the ten year Long-Term Financial Plan. The capital budget is developed in conjunction with the AMS and forward planned maintenance and, where identified, system development. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016

Effectiveness Criteria	Observations	Evidence reviewed
<ul style="list-style-type: none"> ▪ The 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 that the capital expenditure plan is regularly updated and actioned 	<ul style="list-style-type: none"> ▪ The need / requirement for new sewer assets are identified from the five year capital works program and the longer-term expenditure forecast include in the AMS. However, at the present time all of the identified works are for renewal of assets as they reach the end of their asset lives. ▪ As noted previously, the AMS forecasts a capex program out to 80 years based on the asset lives assigned to each type of asset. This is based on renewals of assets as they reach the end of their asset life. The renewal program is included in Appendix B of the Asset Management Plan. ▪ No new works for growth, levels of service or legislation have been identified in the current planning projections. Any expenditure on new assets (as opposed to renewals) that is identified will need to go through the Shire's business planning process. In addition, the Shire has not created any new assets during the review period. ▪ The long-term forecast shows a small predicted capital expenditure will be required in 2019 for replacement fencing at the treatment plan based on the 20 year asset life that has been assigned for the fencing. A larger expenditure of \$230,000 has been forecasted in 2029 for the replacement of assets at the pump station and effluent reuse infrastructure. As the replacements are based on assigned asset lives, it would be expected that this expenditure would be spread over a number of years. ▪ We confirmed that the capex forecasts included in the AMP reconcile with the asset data included in the AMS. ▪ The capex planning is consistent with asset lives. The asset lives are captured in the AMS against each asset and form the basis of the future works program. ▪ The Shire also captures asset condition data during its ongoing inspection program and takes account of this in renewals planning. Asset inspections are recorded in the AMS. In addition, the Shire completes a program of CCTV of its sewer network every three years. ▪ The Shire does not use deterioration models or renewals planning models. However, given the fairly small size of the asset base, models like these are unlikely to greatly improve the renewals planning process. ▪ We noted at our site inspection that a number of assets require maintenance and/or replacement, including the reuse water concrete tanks, which require some patching around the top of the tanks to repair cracks and spalling, and the pumping station ladder, which has missing rungs and does not meet required safety standards. The ladder is expected to be replaced in the next few weeks and we confirmed the scope of works and cost of the work in the proposal letter received from the contractors that the Shire has engaged to complete the replacement. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan - Appendix E: Planned Work Program 2017 ▪ Shire of Morawa Asset Management Plan - Appendix F: Procedures, Rules and Maintenance ▪ Asset Register spreadsheet ▪ Asset Renewal Programming spreadsheet ▪ Condition and Performance Monitoring spreadsheet ▪ Maintenance Management spreadsheet ▪ Risk Assessment spreadsheet ▪ Shire of Morawa Long-Term Financial Plan 2012 - 2022 ▪ Shire of Morawa Budget for 2016/17 ▪ Shire of Morawa Corporate Business Plan, 20 June 2013 ▪ Shire of Morawa Policy Manual, February 2016 ▪ Shire of Morawa Infrastructure Sewerage FV Valuation as at 30 June 2015 (prepared by Griffin) ▪ Shire of Morawa Strategic Community Plan 2012 - Version 9 ▪ Examples of monthly Council Reports ▪ Examples of monthly Council meeting minutes ▪ Shire of Morawa Annual Reports 2015 ▪ Financial data in Synergy System

Effectiveness Criteria	Observations	Evidence reviewed
<p>Review of the asset management system</p> <ul style="list-style-type: none"> ▪ A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current ▪ Independent reviews (e.g., internal audit) are performed of the asset management system 	<ul style="list-style-type: none"> ▪ The current version of the Asset Management Plan was reviewed and updated in August 2016. ▪ The current Improvement Plan is included in Section 7.2 of the AMP and Section 7.3 of the Asset Management Plan outlines the internal and external review requirements for the Plan. ▪ We have made a number of recommendations throughout the overall Asset Management System Review related to updating the contents of the Asset Management Plan to consolidate information into the Plan. ▪ External review of the AMS is undertaken as part of Clause 4.1 of Shire's current operating licence under the Act. The last review was undertaken for year period 1 December 2011 to 30 November 2014. No other intermediary reviews have been undertaken between the previous review and this review which covers the period 1 December 2014 to 30 November 2016. ▪ The Asset Management Plan states that the asset register will be reviewed annually in the improvement plan in Section 7.2 but that it will be reviewed every five years in Section 7.3. We recommend that the Shire revises the information provided in Section 7.3 to state that the Asset Management Plan should be reviewed annually and updated where necessary. This review process provides the opportunity to refine and keep this information up-to-date and relevant. Therefore, the next review of the AMP would be expected to be completed in August 2017. ▪ The AMS is considered fit-for-purpose and suitable for the organisation although we have made a few number of recommendations to improve the system based on observations made during the asset management system review. 	<ul style="list-style-type: none"> ▪ Shire of Morawa Asset Management Plan for Sewerage and Effluent Reuse Scheme Assets, Updated August 2016 Cardno, Shire of Morawa Operational Audit and Asset Management System Review, Final Report, June 2015 ▪ Shire of Morawa post-audit and post-review implementation plan actions completed, Oct 2016

6 Recommendations

6.1 Asset Management System Review

Table 6-1 Table of Current Review Asset System Deficiencies/Recommendations

A. Resolved during current Review period			
Ref.	Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Date Resolved (& management action taken)	Auditor's Comments

B. Unresolved at end of current Review period			
Reference (no./year)	Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Auditor's recommendation	Management action taken by end of Review Period
R1/2017	<p><i>B2</i> <i>Asset Planning – Asset management plan covers key requirements</i></p> <p>Although the asset management system package provided by the ERA that the Shire uses includes a Financial Budget spreadsheet, the Shire does not utilise this spreadsheet.</p>	<p>We recommend that the Shire uses the Financial Budget spreadsheet to consolidate all of the financial information related to the income/revenue and expenditure related to providing the sewerage service.</p>	
R2/2017	<p><i>B2</i> <i>Asset Planning – Likelihood and consequences of asset failure are predicted</i></p> <p>The mitigation and management strategies for the highest risks are included in the Asset Management Plan. However, the Shire has recognised that the main risk event impacting on the sewerage service is power outages and this is not included in the risk assessment.</p>	<p>The Shire has recently developed a Contingency Plan and this includes mitigation actions related to power outages. We recommend that this risk event is included in the next review of the risk register.</p>	
R3/2017	<p><i>B2</i> <i>Asset Planning – Plans are regularly reviewed and updated</i></p> <p>Although the Shire reviews the Asset Management Plan annually, the document states in Section 7.2 that the asset register will be reviewed annually in the improvement plan in Section 7.2 but that it will be reviewed every five years in Section 7.3.</p>	<p>We recommend that the Shire revises the information provided in Section 7.3 to state that the Asset Management Plan should be reviewed, and updated where necessary, annually. This review process provides the opportunity to refine and keep this information up-to-date and relevant. Therefore, the next review of the AMP would be expected to be completed in August 2017.</p>	
R4/2017	<p><i>B2</i></p>	<p>We recommend that the legislative requirements</p>	

B. Unresolved at end of current Review period			
Reference (no./year)	Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Auditor's recommendation	Management action taken by end of Review Period
	<p><i>Asset Creation - Ongoing legal / environmental / safety obligations of the asset owner are assigned and understood</i></p> <p>Although the AMP includes information on the recycled water scheme assets, the legal, environmental and safety obligations related to the reuse scheme are not specified in the AMP (e.g. the <i>Health Act 1911</i>, the <i>Metropolitan Water Supply and Sewerage Act 1909</i> and <i>Environmental Protection Act 1986</i>).</p>	associated with the licensee's reuse scheme are included in the next update of the AMP.	
R5/2017	<p><i>B2 Environmental Analysis - Compliance with statutory and regulatory requirements</i></p> <p>The Shire has identified statutory and regulatory requirements in its Section 2.2 of the AMP. However, it makes reference to the <i>Water Services Licensing Act 1995</i> which has been superseded by the <i>Water Services Act 2012</i>.</p>	We recommend that the AMP be updated to reflect the new legislative framework at the next review of the document.	
R6/2017	<p><i>B2 Environmental Analysis - Compliance with statutory and regulatory requirements</i></p> <p>There was also a requirement for the Shire to develop a Recycled Water Quality Management Plan by the end of 2016 that has not yet been completed.</p> <p>The Shire is waiting for the disinfection system installation to be completed prior to the Recycled Water Quality Management Plan being prepared.</p> <p>As such, the Plan is expected to be completed within the next few months.</p>	We recommend that the Shire completes the overdue Recycled Water Quality Management Plan that it is required to complete by the Department of Health once the proposed disinfection system has been installed.	
R7/2017	<p><i>B2 Asset Operations – Risk management is applied to prioritise operations tasks</i></p> <p>Risk management related to the treated effluent reuse supply are included in the AMS. However, we observed that although the Risk Register has been updated to include the effluent reuse assets, it does not include any risk related to the water quality of the effluent.</p>	We recommend that the risk event of reused effluent being of unsuitable quality for irrigation of the sports oval be included in the next review of the Register.	
R8/2017	<p><i>B2</i></p>	We recommend that the Shire revises its asset register to	

B. Unresolved at end of current Review period			
Reference (no./year)	Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Auditor's recommendation	Management action taken by end of Review Period
	<p><i>Asset Operations - Assets are documented in an Asset Register including asset type, location, material, plans of components, an assessment of assets' physical/structural condition and accounting data</i></p> <p>We note that the asset register does not record the pipe diameters or materials. The Asset Management Plan does provide information on pipe sizes and diameters.</p> <p>In addition, that the asset register does not provide any information on asset sizes/dimensions (e.g. pump and motor sizes/capacities, treatment plant pond sizes, storage tanks) or materials (e.g. storage tanks).</p> <p>We also note that the rising main from the pump station to the treatment plant is not recorded as a rising main pipe.</p>	include this information at the next update of the AMS.	
R9/2017	<p><i>B2</i></p> <p><i>Asset Maintenance – Regular inspections are undertaken of asset performance and condition</i></p> <p>The Shire has not completed a recommendation from the last asset management review to engage a Health & Safety consultant to carry out a survey of the below ground overflow structure at the Shire's pumping station.</p> <p>This recommended work should assess the pumping station overflow structure to confirm, or otherwise, whether the open tank needs a cover/cage and whether the ladder into the tank is required and, if it is, whether it meets the current Australian Standards for ladders.</p>	We recommend that the Shire completes this recommendation that was included in the 2015 asset management system review.	
R10/2017	<p><i>B2</i></p> <p><i>Risk Management – Risks are documented in a risk register and treatment plans are actioned and monitored</i></p> <p>The risk consequences related to customers and community are assessed and used to derive an overall consequence score based on the maximum individual score. The licensee's risk assessment does not include risk consequences associated with the water licence, financial impact, the environment and workplace health and safety.</p>	We recommend that the Shire's risk assessment be updated to include these risks when the register is next reviewed.	

B. Unresolved at end of current Review period			
Reference (no./year)	Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Auditor's recommendation	Management action taken by end of Review Period
R11/2017	<p>B2 <i>Risk Management – Risks are documented in a risk register and treatment plans are actioned and monitored</i></p> <p>Although the Shire has developed a Contingency Plan that includes the mitigation/management strategies for the key asset risk events, and these are also included in the Asset Management Plan, the Risk Register does not include any Mitigation & Management Strategies for any of the significant risks included in the Water Services Operating Licence Risks.</p>	<p>Therefore, we recommend that the Shire review the non-asset risks and identifies Mitigation & Management Strategies for these non-asset risks.</p>	
R12/2017	<p>D4 <i>Contingency Planning - Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks</i></p> <p>The Shire has developed the Contingency Plan that was included in the previous asset management review's recommendations after the end of the review period but prior to the completion of this report.</p>	<p>As the Contingency Plan was not completed until after the review period, we are required to recommend that the Shire develops a Contingency Plan. The Shire can refer to the actions that have been completed to address this recommendation in its Post-Review Implementation Plan.</p>	
R13/2017	<p>D4 <i>Contingency Planning - Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks</i></p> <p>The Shire has only recently prepared its Contingency Plan for its sewerage system. No testing of the Plan has been completed.</p>	<p>In our review of the recommendations from the last asset management system review, we have recommended that the Shire conducts a desktop test of its Contingency Plan during 2017 (recurring annually) using a mock scenario to test and confirm that its mitigation strategies and the listed actions under each strategy are appropriate.</p>	
R14/2017	<p>B1 <i>Financial Planning – The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services</i></p> <p>With the exception of the renewals program, the Asset Management Plan does not include any financial forecast data related to the operations and maintenance of the sewerage and reuse systems.</p>	<p>We recommend that the Shire includes a five year financial plan that includes the breakdown of the revenue/income and different components of the expenditure (e.g. electricity, materials, labour, licensing costs, contractor expenditure, overheads, insurance etc.) and the forecast money to be put into the sewerage reserve fund, in order to provide the financial adjustments in each year and the overall annual financial situation over the period. The Shire has this information included in its financial plan as well as the actual costs incurred in the year</p>	

B. Unresolved at end of current Review period			
Reference (no./year)	Asset System Deficiency (Rating / Asset Management System Component & Effectiveness Criteria / Details of Asset System Deficiency)	Auditor's recommendation	Management action taken by end of Review Period
		recorded in Synergy so providing this financial overview and forecast in the Asset Management Plan should be a reasonably straightforward process.	

7 Confirmation of the Audit/Review

I confirm that the audit/review carried out at the Shire of Morawa on 30 and 31 January 2017 and recorded in this report is an accurate presentation of our findings and opinions.

J Edwards

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24 March 2017

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APPENDIX

A

RISK MANAGEMENT
FRAMEWORK



Types of Compliance Risk

Type of Risk	Examples
Supply quality and reliability	Delays in new connections, excessive supply interruptions, supply quality standards not met.
Consumer protection	Customer service levels not met, incorrect bills, disconnection and reconnection standards not met, customers unable to access financial hardship assistance.
Legislation/licence	Breach of industry Acts, regulations and codes, contravention of licence conditions.

Risk Assessment Rating Scales

The consequence, likelihood, inherent risk and adequacy of internal controls are assessed using a 3-point rating scale as described below. The rating scale is as per the Economic Regulation Authority's Audit and Review Guidelines: Water Licences, July 2014.

Consequence Rating

The consequence rating scale is outlined below.

Rating	Supply Quality and Reliability	Consumer Protection	Breaches of Legislation or Other Licence Conditions
1 Minor	Breaches of supply quality or reliability standards – affecting small number of customers. Delays in providing a small proportion of new connections.	Customer complaints procedures not followed in a few instances. Small percentage of disconnections or reconnections not completed on time. Small percentage of bills not issued on time.	Legislative obligations or licence conditions not fully complied with, minor impact on customers or third parties. Compliance framework generally fit for purpose and operating effectively.
2 Moderate	Supply quality breach events that significantly impact customers; large number of customers affected and/or extended duration and/or damage to customer equipment. Supply interruptions affecting significant proportion of customers on the network for up to one day. Significant number of customers experiencing excessive number of interruptions per annum. Significant percentage of new connections not provided on time/ some customers experiencing extended delays.	Significant percentage of complaints not being correctly handled. Customers not receiving correct advice regarding financial hardship. Significant percentage of bills not issued on time. Ongoing instances of disconnections and reconnections not completed on time, remedial actions not being taken or proving ineffective. Instances of wrongful disconnection.	More widespread breaches of legislative obligations or licence conditions over time. Compliance framework requires improvement to meet minimum standards.
3 Major	Supply interruptions affecting significant proportion of customers on the network for more than one day. Majority of new connections not completed on time/ large number of customers experiencing extended delays.	Significant failure of one or more customer protection processes leading to ongoing breaches of standards. Ongoing instances of wrongful disconnection.	Willful breach of legislative obligation or licence condition. Widespread and/or ongoing breaches of legislative obligations or licence conditions. Compliance framework not fit for purpose, requires significant improvement.

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

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 an appropriate level
Moderate	Controls that only cover significant risks; improvement required
Weak	Controls are weak or non-existent and have minimal impact on the risks

Assessment of Audit Priority

The assessment of audit priority is 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.

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		

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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 Economic Regulation Authority's Audit and Review Guidelines: Water Licences, July 2014.

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"> ▪ Process and policy documentation requires 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 significant improvement. ▪ Processes and policies do not document the required performance of the assets. ▪ Processes and policies are significantly out of date. ▪ The asset management information system(s) require significant 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 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 when necessary
2	Opportunity for improvement	<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 actioned
3	Corrective action required	<ul style="list-style-type: none"> ▪ The performance of the process requires significant improvement to meet the required level ▪ Process effectiveness reviews are performed irregularly or not at all ▪ Process improvement opportunities are not actioned
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