



Shire of Yilgarn

Water Services Operating Licence
(Non-Potable Water Supply and
Sewerage Services)

Asset Management System Review

Final Report

May 2013

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Quantum Management Consulting and Assurance

ABN 83 083 848 168 Liability limited by a scheme approved under Professional Services Legislation

Level 28 AMP Tower, 140 St Georges Terrace, Perth **M.** PO Box 6882, East Perth WA 6892

T. 08 9278 2570 **F.** 08 9278 2571

E. mail@quantumassurance.com.au **W.** www.quantumassurance.com.au

Executive Summary

The Shire of Yilgarn has a Water Services Operating Licence, issued by the Economic Regulation Authority ('the Authority') under the Water Services Licensing Act 1995 (WA), for the provision of non-potable water supply and sewerage services in the operating area that is centred on the townships of Southern Cross and Marvel Loch.

The Shire of Yilgarn ('the Shire') is required to comply with the terms and conditions of their licence, including applicable legislative provisions and performance reporting as set out in their licence and the Water Compliance Reporting Manual (July 2012).

The scheme was originally constructed in 1983 to cover most of the present townsite in Southern Cross. The sewer system connects approximately 355 properties at Southern Cross and a smaller scheme connects approximately 100 properties at Marvel Loch, a townsite 32 km south west of Southern Cross. Both systems utilise piped gravity reticulation with the waste flows piped through pump stations to a wastewater treatment plant including sedimentation/oxidisation ponds.

This Asset Management System Review has been conducted in order to assess the effectiveness of the asset management system. At the request of the Authority, this review covered the period from 1 December 2011 to 28 February 2013.

SUMMARY

The review of the Asset Management System has shown that the wastewater treatment system is operating effectively and meeting the expected performance standards under the Authority's licence.

The policies, procedures and supporting information to operate and maintain the system have improved since the previous review with revision of the Asset Management Plan and better definition of most policies and procedures. Several gaps remain in respect of:

- Updating the Asset Management Plan and information system for the Marvel Loch assets;
- Ensuring that regular water quality samples are taken for recycled water (now rectified);
- Recording actual maintenance activities and asset condition appraisals; and
- Contingency planning and testing.

The review confirmed that out of 22 recommendations from the previous review reported in April 2012, 12 recommendations have been completed and 10 are in progress. The recommendations in progress mainly relate to updating the Asset Management Plan for the Marvel Loch assets, implementation of a new Shire-wide asset management system and contingency planning.

The review recommended that the Shire:

- Completion of the "As constructed plans" and updating the Asset Management Plan and supporting information system for the Marvel Loch assets;
- Updating the financial plan to reflect current costs;
- Recording of maintenance and condition appraisals;
- Regular water quality testing of recycled water for irrigation purposes;
- Conduct rectification work on the embankments at the Southern Cross wastewater treatment plant and the leaking gate valve on pump station two;
- Implement the new Shire-wide asset management system; and
- Include contingency plans in the local emergency management arrangements and conduct annual testing of the plans.

POST REVIEW IMPLEMENTATION PLAN

The Post-Review Implementation Plan in Appendix A provides a summary of the issues and recommendations from this Asset Management System Review with management responses from the Shire of Yilgarn.

The Post Review Implementation Plan has been developed by the review team in consultation with the licensee and has been approved by the licensee. The Shire has agreed to implement the recommended actions.

LIMITATIONS

Our review has been conducted in accordance with applicable Standards on Assurance Engagements (ASAE) 3000 "Assurance Engagements Other than Audits or Reviews of Historical Financial Information" and 3100 "Compliance Engagements".

Our review procedures have been included in Section 1 of this report and have been undertaken to form a conclusion as to whether the Shire has complied in all material respects, with the requirements of an effective asset management system.

This report was prepared for distribution to the Shire and the Authority for the purpose of fulfilling the Shire's reporting obligations under the Water Services Operating Licence. We disclaim any assumption of responsibility for any reliance on this report to any persons or users other than the Shire and the Authority, or for any purpose other than that for which it was prepared.

Because of the inherent limitations of any internal control environment, it is possible that fraud, error or non-compliance may occur and not be detected. A review is not designed to detect all instances of non-compliance with the procedures and controls over the performance and quality standards and licence obligations of the Water Services Operating Licence, since we do not examine all evidence and every transaction. The review conclusions expressed in this report have been formed on this basis.

We confirm that the Authority's Audit Guidelines: Electricity, Gas and Water Licences (August 2010) have been complied with in the conduct of this review and the preparation of the report, and that the review findings reflect our professional opinion.

QUANTUM MANAGEMENT CONSULTING & ASSURANCE

GEOFF WHITE PERTH, WA
DIRECTOR 1 JULY 2013

1. Background

The Shire of Yilgarn has a Water Services Operating Licence, issued by the Economic Regulation Authority ('the Authority') under the Water Services Licensing Act 1995 (WA), for the provision of non-potable water supply and sewerage services in the operating area that is centred on the townships of Southern Cross and Marvel Loch.

The Shire of Yilgarn is required to comply with the terms and conditions of their licence, including applicable legislative provisions and performance reporting as set out in their licence and the Water Compliance Reporting Manual (July 2012).

The Shire of Yilgarn required an asset management system review to comply with the licensing requirements of the Authority. The previous review period was 1 November 2008 to 30 November 2011 (report issued April 2012). At the request of the Authority, this review has covered the period from 1 December 2011 to 28 February 2013

Our review approach is based on the compliance obligations set out in the licence (Operating Licence 30, Version OL2, dated 15 May 2009), applicable legislation and the Audit Guidelines issued by the Authority in August 2010.

2. Methodology

2.1 Objectives and Scope

The objective of the review was to assess the adequacy and effectiveness of the asset management system in place for operation, maintenance and monitoring of the non-potable water supply and sewerage services.

The scope of the review included an assessment of the adequacy and effectiveness of the asset management system by evaluating the key processes of:

- 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.

The review assessed the status of the previous review recommendations and also identified areas where improvement is required.

2.2 Review Period and Timing

The review has covered the period from 1 December 2011 to 28 February 2013.

The previous review period was from 1 November 2008 to 30 November 2011.

2.3 Licensee's Representatives Participating in the Review

- Wendy Dallywater – Manager Environmental Health & Building Services

2.4 Key Documents Examined

- Shire of Yilgarn Water Services Operating Licence 30 (Version OL2) dated 15 May 2009
- Audit Report – Shire of Yilgarn Water Licence - Operational Audit and Asset Management System Review dated April 2012
- Post Audit/Review Implementation Plan 2012 – Reviewed January 2013
- Reticulation Area Map – Southern Cross scheme
- Shire of Yilgarn Asset Management Plan (reviewed December 2012 and May 2013)
- Performance Report to the Authority for 2011/12
- Compliance Report to the Authority for 2011/12
- Forward Capital Works Plan 2010/11 to 2014/15
- Wastewater Asset Management System – May 2013
- Shire of Yilgarn Contractor Checklists (signed by contractors)
- 2011/12 Annual Report
- Annual Environmental Report to the Department of Environment and Conservation dated 12 December 2012
- Annual Capital Investment Budget (May 2013)
- Annual Operations and Maintenance Budget (May 2013)
- Maintenance Service of Shire of Yilgarn Sewer Pump Stations (Southern Cross and Marvel Loch) (Maintenance procedures)

- Commissioning documents for pump repairs dated 14 January 2013
- Customer Service Charter for Wastewater Services (December 2008)

2.5 Adequacy and Performance Ratings

The adequacy of processes and policies, and the performance of the key processes were assessed using the scales described in the tables below.

The overall effectiveness rating for each asset management process is based on a combination of the process and policy adequacy rating and the performance rating.

Asset Management Process and Policy Definition - 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(s) is not for purpose (taking into consideration the assets that are being managed).

Asset Management Process - 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.

2.6 Review Team and Hours

NAME AND POSITION	BUDGET HOURS
Geoff White - Director	10
Andrea Stefkova – Assistant Manager	15
David Wills – Principal Engineer (David Wills and Associates)	2
David Goaley – Civil Engineer (David Wills & Associates)	10
TOTAL	37

3. Observations and Results

The effectiveness of the Shire's asset management system was assessed using the asset management system process and policy definitions ratings and the performance ratings (refer section 2.5) as provided by the Authority in the Audit Guidelines.

The review has assessed and rated the key processes as shown in Section 3.1.

Section 3.2 provides details of the current status of recommendations from the previous review.

Section 3.3 provides further details of the systems and the effectiveness rating for each process in the asset management system.

3.1 Summary of Asset Management System Ratings

The audit assessment of the asset management system process and policy definitions and their effectiveness is shown in the table below.

ASSET MANAGEMENT SYSTEM	Process and policy definition rating			Performance rating					
	Inadequate (D)	Requires significant improvement (C)	Requires some improvement (B)	Adequately defined (A)	Serious action required (4)	Corrective action required (3)	Opportunity for improvement (2)	Performing effectively (1)	Not Rated
Key Processes									
1. Asset planning			√			√			
2. Asset creation/ acquisition				√				√	
3. Asset disposal				√			√		
4. Environmental analysis			√				√		
5. Asset operations				√		√			
6. Asset maintenance				√		√			
7. Asset management information system				√			√		
8. Risk management				√			√		
9. Contingency planning			√			√			
10. Financial planning				√			√		
11. Capital expenditure planning				√			√		
12. Review of asset management system				√			√		

3.2 Previous Review Recommendations

The status of the recommendations in the previous AMS review report issued in April 2012 is summarised below.

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
1	ASSET PLANNING				
1.1	Service level performance targets and measurements are not currently shown in the Asset Management Plan (AMP).	Service level performance targets and measurements should be included in the AMP.	Will include these service level performance targets in the reviewed AMP. Service level performance targets and measures have been included in the reviewed AMP.	The AMP has been updated for key service levels.	COMPLETED
1.2	Lifecycle costs of owning and operating assets need to be assessed. However, maintenance records of assets are not documented.	The maintenance records of the main assets should be documented in order to assess the life cycle costs.	Specific maintenance record sheets will be established to record all maintenance work carried out on major assets. This requirement will be included in the AMP. This is still being developed.	Maintenance records are to be documented in a new Asset Management System (AMS) for all of the Shire's assets. The system (Synergy) has been selected and staff trained in its use. Estimated completion by December 2013.	IN PROGRESS
1.3	The Asset Management Plan does not cover the Marvel Loch assets. Marvel Loch operating area and plant schematic drawings are not included in the AMP.	The Asset Management Plan does not cover the Marvel Loch assets. Marvel Loch operating area and plant schematic drawings are not included in the AMP.	AS at May 2013, a contractor has basically completed and produced electronic "As Constructed Plans" of the Marvel Loch semi-deep sewer system, but the Shire is waiting on some minor changes to be made to the plans.	Confirmed in progress.	IN PROGRESS

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
2	ASSET CREATION				
2.1	The Shire does not document or have records of commissioning tests.	It is recommended that, when assets are procured and/or refurbished, commissioning tests be conducted and the test results filed under the asset records. The procedure should be documented in the AMP Renewal and Replacement Plan. (Refer to item 2.6 in the 2008 Audit)	Commissioning tests will be requested from now on with copies kept on computer. This requirement will be added to the AMP Renewal and Replacement Plan as suggested. Pump repairer has been asked to now supply these documents whenever a pump is sent away for servicing or repairs.	Sighted commissioning test documents for pump repairs in December 2012.	COMPLETED
3	ASSET DISPOSAL				
3.1	Under-utilised and under-performing assets should be identified as part of a regular systematic review process. However documented evidence of the conditional data and performance information was not sighted.	Asset records of refurbishment and maintenance should be kept. This will allow the assets to be assessed and an informed decision to be made to identify and monitor under-performing assets based on a history of downtime and refurbishment. Conditional data, performance information and maintenance records will assist with determining the reasons for under-utilisation or poor performance.	This may be incorporated into the maintenance records sheet. Generally none of the Shire's assets are under-utilised. Under-performing assets are not identified until they fail or performance is noticeable. The Shire will be implementing an Asset Management System for the whole Shire operation and as part of this implementation this requirement will be addressed.	Maintenance records are to be documented in a new AMS for all of the Shire's assets. The system (Synergy) has been selected and staff trained in its use. Estimated completion by December 2013.	IN PROGRESS

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
3.2	The licensee's annual capital investment budget and financial planning has been sighted and reflects the replacement value for assets upon the end of their design life, however ongoing replacement of AC pipes and identified pump systems are not shown.	Expand the asset replacement forecast in the AMP (section 4.5) to reflect the ongoing replacement of AC pipes and identified pump systems.	Will look to expand the asset replacement forecast in the AMP to reflect the ongoing replacement of AC pipes and identified pump systems.	The asset replacement forecast in the AMP notes the total replacement cost of all assets is \$2.96 million.	COMPLETED
4	ENVIRONMENTAL ANALYSIS				
4.1	Performance standards (availability of service, capacity continuity, emergency response, etc) should be measured and achieved. The AMP does not yet include the target levels of service as well as measurement of the service levels.	Update section 2 of the AMP to reflect the target levels of service as well as measurement of the service levels.	Performance standards and target levels of service will be added to the AMP as part of the current review. Performance standards and target levels of service have been added to the reviewed AMP.	The AMP has been updated.	COMPLETED
4.2	Compliance monitoring does not include monitoring of parameters such as water quality at entry and exit of wastewater treatment plant.	Compliance and performance measurement procedures should be developed further to include additional parameters such as monitoring of water quality at entry and exit of wastewater treatment plant. This should be included in the AMP.	Compliance and performance measurement procedures which include parameters such as monitoring of water quality at entry and exit of wastewater treatment plant will be added to the AMP as recommended. Compliance monitoring and performance measurement procedures including parameters for monitoring water quality have been added to the revised AMP.	The AMP has been updated.	COMPLETED

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
5	ASSET OPERATIONS				
5.1	The Asset Management Plan does not cover the Marvel Loch assets. Marvel Loch operating area and plant schematic drawings are not included in the AMP.	The licensee should add details of the Marvel Loch assets in the AMP, including overview, operation, maintenance etc	As at May 2013, a contractor has basically completed and produced electronic "As Constructed Plans" of the Marvel Loch semi-deep sewer system, but the Shire is waiting on some minor changes to be made to the plans.	Confirmed in progress.	IN PROGRESS
5.2	There are no operational procedures on how to operate plant or machinery.	The licensee should document the operational procedures on how to operate the plant and machinery - to be referred to in the AMP. (Refer to item 2.4 in the 2008 Audit Plan)	Operational procedures for operating the various plant and machinery have been included in the revised AMP.	The AMP has been updated.	COMPLETED
5.3	Risk management should be applied to prioritise operations tasks, however no risk analysis is performed at present.	Operations tasks to be prioritised in conjunction with the development of the risk register.	Risk assessments will be carried out for the various tasks or operations and will be listed in priority order.	Risk assessments have been documented in the AMP and a monthly procedure for operational and maintenance checks based on the risk assessment has been implemented.	COMPLETED
	Marvel Loch facilities are not documented in an Asset Register or as-constructed plans.	Develop an Asset Register for Marvel Loch in conjunction with the development of as-constructed plans.	An Asset Register for Marvel Loch had previously been completed and is being checked against the information in the new "As Constructed Plan".	Plans are nearly complete. Detailed asset register to be updated by December 2013.	IN PROGRESS

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
5.4	Documented evidence such as copies of the staff / contractors accreditations were not available. A form has been sent to contractors to document their qualifications but there has not been cooperation from the contractors.	The licensee should compile a register listing the contractors' relevant accreditations and qualifications and include reference to it in the AMP.	Letters have been sent to the Shire's contractors asking for a copy of their licenses or qualifications or accreditations to confirm their ability to work on the Shire's plant. The need for this and its regular review is part of the Shire's OSH policy and procedures.	Sighted signed Contractor statements.	COMPLETED
6	ASSET MAINTENANCE				
6.1	The procedure for planned maintenance and inspections does not define the required maintenance and inspection process sufficiently. No records of maintenance activities are kept. The AMP should define the planned maintenance and inspection activities and tasks.	The maintenance and inspection procedures should be documented so that the maintenance crew can carry out their tasks using these procedures. Maintenance records should be documented and a maintenance schedule should record these tasks.	The procedure for planned maintenance and inspections has been expanded to explain the process and is included in the revised AMP. Reference is made to the maintenance records sheets.	The AMP has been updated. Maintenance records are to be documented in the new AMS.	IN PROGRESS
6.2	There was no documented evidence that the assets are being maintained and inspected satisfactorily. The following items were noted upon inspection of the assets. Cont'd.....	Planned maintenance and condition inspections should be conducted frequently and documented. Section 4.4 in the AMP should be updated to reflect regular inspections and documentation of these inspections as noted in 6.1. The site visit findings should be actioned.	The expanded procedure for planned maintenance inspections will include such things as frequency and what the level or condition of the asset should be. All items noted during the inspection will be attended to as soon as possible. The status as at May 2013 was as follows: Cont'd.....	Site inspection on 16 May 2013 confirmed the rectification work had been completed except for item (a) which was due to be completed by 31 May 2013. Item (f) also has a further leak evident at the date of the audit site visit.	4 /6 ITEMS COMPLETED 2 INCOMPLETE

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
	<p>(a) The fencing around the Southern Cross treatment works is not maintained as the fencing is overgrown with trees and bushes.</p> <p>(b) Fencing around the Marvel Loch Chlorination Plant was removed in September 2011 and had not been reinstated. Health and safety risk.</p> <p>(c) An intermediate pump station at Marvel Loch did not have any power and the sewage was overflowing into the environment - the placement of stepping stones suggests that this has been occurring for some time.</p> <p>(d) The modular treatment units at Southern Cross have a cover missing. We could not confirm whether the air pumps were operational.</p> <p>(e) Central pond at Marvel Loch (pond 2) was empty. However ponds on either side were full, suggesting that the plant is not operating as planned.</p> <p>(f) Slight leak, possibly from a leaking valve, into an emergency overflow pit at intermediate pump station in Southern Cross, near oval.</p>		<p>(a) Shire staff have been unable to carry out the work of removing vegetation along the fences at the Southern Cross Sewage Ponds so a local contractor has been asked to do this work. Previous contractor didn't complete so a new contractor will complete this by 31 May 2013.</p> <p>(b) The section of fencing that had been taken down at the Marvel Loch Sewage Ponds has been reinstated and is complete.</p> <p>(c) Power issue has been resolved, pumps working and overflow stopped. The air pump works but was not working at the time of the audit due to maintenance work occurring on the mono-pump so the modular system had been turned off. The pumps at the Overington Street Pump Station (ML PS No 2) are still working effectively.</p> <p>(d) The local plumber has re-secured the lids on the modular treatment unit.</p> <p>(e) The Marvel Loch sewage ponds are now working properly with sewage flowing from the first pond into the second pond. The piping has been checked and is operational.</p> <p>(f) The leak into the emergency overflow tank at the Achernar Street Pump Station (SX PS No 2) has been fixed (<i>Note: A further leak was noted at 16 May 2013 during the audit site visit</i>).</p>	<p>The current review confirmed the action advised by the licensee.</p> <p>Monthly site inspections commenced in May 2013.</p>	
Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status

	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule however Routine and Planned maintenance records are not documented - therefore there is no record documenting whether the process is completed on schedule.	Action as per 6.1	Procedure for planned maintenance and inspections has been expanded to explain the process and is included in the reviewed AMP. Reference is made to the maintenance records sheets.	The AMP has been updated. Maintenance records are to be documented in the new AMS.	IN PROGRESS
6.3	Risk management is applied to prioritise maintenance tasks. However no risk analysis is performed at present.	Maintenance tasks to be prioritised in conjunction with the development of the risk register.	Risk assessments will be carried out for the various tasks or operations and will be listed in priority order. The AMP includes a risk assessment of potential risk events that is used to inform the maintenance programme.	The AMP has been updated.	COMPLETED
7	ASSET MANAGEMENT INFORMATION SYSTEMS				
7.1	Physical security access controls: There were some instances of poor security: <ul style="list-style-type: none"> a fence removed for works in September 2011 and not reinstated at Marvel Loch evaporation ponds. a secondary gate left open at Southern Cross main Wastewater Treatment Plant. 	More frequent inspections should result in improved security. Gates and fences should be secured at all times.	Schedule of maintenance inspections to be developed and included in the AMP. A schedule of maintenance inspections has been developed and included in the reviewed AMP.	The AMP has been updated. Site inspection on 16 May 2013 confirmed the gates and fences were secure at both sewerage pond sites.	COMPLETED

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
8	RISK MANAGEMENT				
8.1	<p>The generic procedure for developing a risk register is included in the AMP (section 3) but does not assess the likelihood and consequence of asset failure or mitigation procedures specific to the scheme. The development of the Shire risk matrix is still in progress.</p> <p>(Was item 2.1 in the 2008 Audit).</p>	<p>The Shire should conduct a risk workshop with affected stakeholders and develop a risk register with likelihood, consequences and mitigation actions. The risk register should be referred to in section 3 of the AMP. The risk register should be assessed and updated as required on an annual basis.</p>	<p>In conjunction with contractors risk assessments will be developed for the various tasks or operations carried out and will be listed in priority order. These assessments will be added to the AMP.</p> <p>Risk assessments have been completed for various events that may occur and are included in the revised AMP. These include identification of risk events, risk assessment and treatment plans (mitigation and contingency).</p>	<p>The AMP has been updated.</p>	COMPLETED
9	CONTINGENCY PLANNING				
9.1	<p>Contingency plans were not sighted. The Shire has a "Local Emergency Management Arrangements (January 2012)" (LEMA) document. Water and wastewater related risks and contingency plans are however not included in the LEMA. The asset management system should have contingency plans clear enough for responsible parties to successfully action the plan.</p> <p>Contingency plans have not been tested.</p> <p>(Was item 2.2 in the 2008 Audit Plan).</p>	<p>A contingency plan should be developed possibly in collaboration with the Local Emergency Management Committee (LEMC) and in conjunction with the development of the risk register which is in working progress. The functions of the LEMC are to advise and assist the local government in establishing local emergency managements for the district. Contingency plans should be included in the LEMA and AMP.</p> <p>The contingency plans should be tested so that all identified personnel become familiar with their responsibilities.</p>	<p>The procedure for expected or likely emergencies will be identified and contingency plans drafted. A copy of these will be given to the LEMC for inclusion in its LEMA.</p> <p>The risk assessments that have been completed for various events that may occur (see above) will be expanded to include contingency plans which can then be given to the local LEMC for inclusion in its LEMA.</p>	<p>There are contingency plans in the AMP included with the risk assessment for potential events.</p> <p>These need to be included in the Shire's Local Emergency Management Arrangements with contact details of staff and contractors, communication/escalation process and how the plans are to be updated and tested.</p>	IN PROGRESS

Item	AMS Element & Issue	Recommendation	Action Update by Licensee	Review Observations	Status
10	FINANCIAL PLANNING				
10.1	<p>The AMP and supporting documentation contain 5 year operating and capital expenditure forecasts up to 2012. Supporting documentation has projections up to 2070.</p> <p>The AMP forecasts will need to be updated in the current review of the AMP.</p>	<p>The AMP forecasts are in need of updating</p> <p>Financial plans with predictions of income over the next five years should be documented.</p>	<p>The AMP forecasts will be updated.</p> <p>The financial plans with predictions of income over the next 5 years will be developed.</p> <p>The Shire will be implementing an Asset Management System for the whole Shire operation and as part of this implementation this requirement will be addressed.</p>	<p>The AMP has not yet been updated with the income and expenditure for the next 5 years (including the Annual Operations and Maintenance Budget and the Capital Expenditure Budget that show figures from 2007).</p> <p>The system (Synergy) has been selected and staff trained in its use. Estimated completion by December 2013.</p>	IN PROGRESS
11	REVIEW OF AMS				
11.1	<p>A review process should be in place to ensure that the asset management plan and the asset management system described therein are kept current. The current AMP was issued in 2007 and due to be revised in 2012. A copy of the new AMP (2012 version) was sighted, work is in progress on completing this document.</p>	<p>The AMP should be reviewed yearly so that minor updates of key figures, dates and actions plans will assist in maintaining it as a realistic and working document.</p>	<p>Review procedures have been stated in the AMP.</p> <p>The AMP has been reviewed and updated but there are still some aspects that have not been completed (see above) and which will be part of the AMP.</p>	<p>The AMP states review procedures including internal review every 2 years.</p>	COMPLETED

3.3 Review Results and Recommendations

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
		Process Rating ¹	B	Performance Rating ²	3
1	ASSET PLANNING				
1.1	Planning process and objectives reflect the needs of all stakeholders and is integrated with business planning.	The Asset Management Plan developed in 2007 with the latest revision date being May 2013 has considered the needs of stakeholders and the various licencing requirements. The Shire also has a 5 year forward capital planning process that is designed to meet the needs of all stakeholders.			
1.2	Service levels are defined.	Service levels are stated in the Asset Management Plan and the Customer Service Charter.			
1.3	Non-asset options (e.g. demand management) are considered.	The entire scheme is demand based.			
1.4	Lifecycle costs of owning and operating assets are assessed.	<p>Although the AMP states that costs should be reviewed and updated annually, the cost of owning and operating assets is stated in the detailed Excel spreadsheets but has not been updated since 2007.</p> <p>Also maintenance records are condition assessments are not documented in order to better assess the lifecycle costs.</p> <p>The AMP only covers Southern Cross assets. Marvel Loch assets are not included pending completion of the “As Constructed Plans” and populating a detailed asset register.</p> <p>Recommendations:</p> <p>1.1 The AMP needs to be updated to cover the Marvel Loch assets – various sections need to be revised.</p> <p>1.2 The operating and maintenance cost budget and the capital investment budget need to be updated with the current costs and rolled forward another five years. The summary in the AMP also needs to be updated.</p> <p>1.3 The maintenance records and condition assessments of the main assets should be documented in the new AMS (Synergy) and used to assess the lifecycle costs of the assets.</p>			
1.5	Funding options are evaluated.	The main source of funding is Shire rates. The Shire has established a sewerage reserve to provide for capital replacement costs and major maintenance. Other options are considered by the Shire as the need arises.			
1.6	Costs are justified and cost drivers identified.	The 5 year Financial Plan is based on detailed cost estimates for operational and capital expenditure (although they need to be updated as noted in 1.4 above). Cost drivers are identified and commented upon in the Shire’s Annual Report each year.			

¹ Process ratings: A=adequately defined, B=requires some improvement, C=requires significant improvement, D=inadequate.

² Performance ratings: 1=performing effectively, 2=opportunity for improvement, 3=corrective action required, 4=serious action required

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
1.7	Likelihood and consequences of asset failure are predicted.	The AMP outlines the likelihood and consequences of possible asset failures or events and remedial action.			
1.8	Plans are regularly reviewed and updated.	The AMP has review procedures stated including internal review every two years and external review every three years as per the licence requirement.			
2	ASSET CREATION/ ACQUISITION	Process Rating	A	Performance Rating	1
2.1	Full project evaluations are undertaken for new assets, including comparative assessment of non-asset solutions.	There has been no expansion of the scheme and no new assets in this audit period. The Asset Creation policy in the AMP states that any new asset purchases would apply the Shire's procurement policies and procedures.			
2.2	Evaluations include all life-cycle costs.	There has been no expansion of the scheme, and no new assets, only the replacement or updating of existing assets as part of maintenance.			
2.3	Projects reflect sound engineering and business decisions.	The Shire would consult specialists if alterations to plant or major replacements are required.			
2.4	Commissioning tests are documented and completed.	There has been no expansion of the scheme, and no new assets, only the replacement or updating of existing assets as part of maintenance. Commissioning tests are documented for new acquisitions of plant and equipment.			
2.5	Ongoing legal/environmental/safety obligations of the asset owner are assigned and understood.	Responsibilities are assigned through the Shire's operating structure and are further defined in the AMP. The Manager Environmental Health & Building Services is responsible for environmental and safety obligations. Relevant issues are reported to Council which meets monthly. Interviews confirmed that staff are aware of their legal, environmental and safety obligations.			
3	ASSET DISPOSAL	Process Rating	A	Performance Rating	2
3.1	Under-utilised and under-performing assets are identified as part of a regular systematic review process.	<p>An Asset Disposal Policy is included in the AMP in section 4.7. The plan is basically to dispose of assets at the end of their useful life. There have been no disposals over the audit period other than routine replacement of pumps.</p> <p>Under-utilised and under-performing assets should be identified as part of a regular systematic review process. However documented evidence of the conditional data and performance information was not sighted. Under-performing assets are not identified until they fail or performance is noticeable.</p> <p>The Shire is implementing an Asset Management System for the whole Shire operation and as part of this implementation the maintenance records and condition appraisal will be documented.</p> <p>Recommendation:</p> <p>1.3 The maintenance records and condition assessments of the main assets should be documented in the new AMS (Synergy) and used to assess the lifecycle costs of the assets.</p>			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
3.2	The reasons for under-utilisation or poor performance are critically examined and corrective action or disposal undertaken.	There was evidence that the Shire monitors the status of poor performing plant (pumps, etc). The service crew and external contractors who do monthly maintenance checks and tasks, consult with the Manager Environmental Health & Building Services on any further action required. There have not been any major instances of non-performing assets in this audit period.			
3.3	Disposal alternatives are evaluated.	All assets are utilised and none have been flagged for disposal.			
3.4	There is a replacement strategy for assets.	Assets are replaced at the end of their useful life.			
4	ENVIRONMENTAL ANALYSIS	Process Rating	B	Performance Rating	2
4.1	Opportunities and threats in the system environment are assessed.	The AMP has a risk assessment including potential threats to the environment in section 3.5. There have been minimal changes to the population numbers in Southern Cross but Marvel Loch has declined from approximately 100 occupied houses to 50 due to changes in mining demand. The system is over-designed for the reduced population but no changes are planned as the population may increase with new mining developments.			
4.2	Performance standards (availability of service, capacity, continuity, emergency response, etc) are measured and achieved.	<p>Performance reporting to the Authority over the audit period indicates that performance standards are being achieved with no exceptions reported for 2011/12.</p> <p>The quality of the water used for irrigation at Southern Cross is required by the licence from the Department of Environment and Conservation to be tested every 3 months. Due to an oversight, this testing was not performed in 2011/12 which was a breach of the licence. Use of the water was suspended when this omission became apparent in early December 2012. Quarterly water testing re-commenced in December 2012 but the reuse of the water has not re-commenced pending further sample testing to confirm the quality is acceptable. The quarterly testing is now recorded as a reminder in the officer's computer diary.</p> <p>Recommendation:</p> <p>2.1 Ensure that testing of the wastewater being reused for irrigation purposes is performed each quarter and the results recorded and actioned if necessary. This requirement should be documented in section 2.3.3 of the AMP.</p>			
4.3	Compliance with statutory and regulatory requirements.	<p>Relevant legislative, environmental and health requirements are documented in section 2 of the AMP. The 2011/12 Compliance Report to the Authority noted some non-compliances re delays in submitting the previous Review Report and Compliance Report, the Customer Service Charter not available at the front counter of the Shire's office and a Section 39 notice re not having an adequate Asset Management System for the wastewater schemes as reported in the previous Review report. Corrective action has been taken on these matters.</p> <p>A breach of the DEC licence occurred in 2011/12 as noted above.</p>			
4.4	Achievement of customer service levels.	There were no recorded complaints by customers during the review period. Performance standards as per the 2011/12 report to the Authority confirmed that service standards were met.			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
5	ASSET OPERATIONS	Process Rating	A	Performance Rating	3
5.1	Operational policies and procedures are documented and linked to service levels required.	<p>The AMP only covers Southern Cross assets. Marvel Loch assets are not included pending completion of the “As Constructed Plans” and populating a detailed asset register. Also, the operating area and plant schematic drawings are not included. As at May 2013, a contractor has basically completed and produced electronic “As Constructed Plans” of the Marvel Loch semi-deep sewer system, but the Shire is waiting on some minor changes to be made to the plans.</p> <p>Operational procedures for operating the various plant and machinery have been included in the revised AMP.</p> <p>Recommendation:</p> <p>3.1 The Asset Register needs to be updated for the Marvel Loch assets.</p>			
5.2	Risk management is applied to prioritise operations tasks.	Risk assessments have been completed for various events that may occur and are included in the revised AMP in section 3.5. These have been considered in prioritising operational and maintenance task.			
5.3	Assets are documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition and accounting data.	<p>Southern Cross assets are documented in the Asset Register (Excel spreadsheet).</p> <p>An Asset Register for Marvel Loch had previously been completed and is being checked against the information in the new “As Constructed Plan”.</p> <p>Refer recommendation in 5.1 above.</p>			
5.4	Operational costs are measured and monitored.	Operational costs are included in the 5 year Financial Plan and monitored via reports to the Board during the year. They need to be updated as noted in section 1.4 above.			
5.5	Staff receive training commensurate with their responsibilities.	<p>The AMP in section 6.1 outlines the current human resources required to support the plan as follows:</p> <ul style="list-style-type: none"> ▪ Manager Environmental Health & Building Services ▪ Head Gardener ▪ Local plumbers ▪ Local electrician ▪ Pump supplier <p>The broad responsibilities and skills required are stated in the AMP but there is no record of training versus skill levels. Most training appears to be on-the-job instruction.</p> <p>The Shire staff are very experienced officers. The main contractors are required to sign declarations confirming their qualifications, certifications and competency to perform the duties. The reviewer sighted signed declarations.</p>			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)		
		Process Rating	A	Performance Rating
6	ASSET MAINTENANCE			3
6.1	Maintenance policies and procedures are documented and linked to service levels required.	<p>Routine and planned maintenance plans are set out in sections 4.3 and 4.4 of the AMP.</p> <p>The procedure for planned maintenance and inspections has been expanded to explain the process and is included in the revised AMP. Reference is made to the maintenance records sheets.</p> <p>A detailed Maintenance procedure sets out the monthly maintenance task to be performed by the Shire Works Officer and the contracted plumber. Maintenance records are to be documented in the new AMS.</p> <p>Recommendation:</p> <p>1.3 The maintenance records and condition assessments of the main assets should be documented in the new AMS (Synergy) and used to assess the lifecycle costs of the assets.</p>		
6.2	Regular inspections are undertaken of asset performance and condition.	<p>Inspections have been carried out on an ad-hoc basis but are planned to be completed monthly as part of the new maintenance procedures. The site visit on 16 May 2013 noted several issues that need rectification, as follows:</p> <p>Recommendations:</p> <p>4.1(a) <u>Wastewater Treatment Plant – Southern Cross</u></p> <ul style="list-style-type: none"> • Vegetation along the fences needs to be removed (Not yet actioned as noted in the previous Review report). • Centre access way down the centre of the treatment ponds has had the stone pitching along the embankment fall into the treatment ponds. Top of embankment has deteriorated given the lack of support from the stone pitching. <ul style="list-style-type: none"> ○ Stone pitching to be reinstated by placing additional stone along embankment. ○ Fill washed away surface at top of embankment with aggregate and compact. ○ Likely cause of damage to surface and embankment probably due to vehicles using this access way. Once remediation work has been completed on embankment vehicles should be prohibited from using these access ways for vehicle movement. ○ Backfill excavated material where leak previously took place between the two sheds (pump station and Chlorination shed). ○ Provide firmer access track for vehicle backing into pond to discharge waste water. Signs of rutting present from vehicle movement. • Pump station two <ul style="list-style-type: none"> ○ Effluent leaking into base of emergency overflow pit. Issue raised in previous AMS review report and problem has still not been rectified. ○ Gate valve needs to be repaired or replaced with a new one. Excess effluent at base of emergency 		

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
		<p style="text-align: center;">storage tank to be disposed of and tank cleaned out.</p> <p>4.1 (b) <u>Wastewater Treatment Plant – Marvel Loch</u></p> <ul style="list-style-type: none"> Lids to pump stations 1 and 2 left ajar and need to be properly closed when finished with maintenance checks. 			
6.3	Maintenance plans (emergency, corrective and preventative) are documented and completed on schedule.	<p>The routine and breakdown, preventative and restorative maintenance tasks and their frequency are documented in the Annual Operations and Maintenance Budget over the next 63 years.</p> <p>It was noted that the titles for “restorative” and “preventative” have been transposed in this budget. This does not affect the frequency or cost shown for the maintenance but should be corrected to avoid any misconception.</p> <p>As noted in section 6.1, records of the actual maintenance performed need to be maintained.</p> <p>Recommendation:</p> <p>4.2 The titles of “reactive” and “preventative” maintenance in the Annual Operations and Maintenance Budget need to be reversed.</p>			
6.4	Failures are analysed and operational/maintenance plans adjusted where necessary.	As noted in section 6.1 above, maintenance records need to be documented in the Shire’s new asset management system being installed. Any breakdowns are analysed by Shire staff with assistance from contractors, and corrective action taken where necessary.			
6.5	Risk management is applied to prioritise maintenance tasks.	The AMP includes a risk assessment of potential risk events that is used to inform the maintenance programme.			
6.6	Maintenance costs are measured and monitored.	Maintenance costs are recorded and monitored via monthly reports to the Shire Council and annual budget meetings.			
7	ASSET MANAGEMENT INFORMATION SYSTEM	Process Rating	A	Performance Rating	2
7.1	Adequate system documentation for users and IT operators.	<p>The current asset management information system uses only basic Excel spreadsheets and does not require specific documentation for its operation. The AMP is based on the template from the Authority.</p> <p>The finance system uses Synergy and an additional module is being installed for asset management. Synergy has comprehensive system documentation.</p> <p>Recommendation:</p> <p>5.1 The implementation of the new Asset Management System and input of data in relation to the wastewater</p>			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
		treatment schemes at Southern Cross and Marvel Loch needs to be completed.			
7.2	Input controls include appropriate verification and validation of data entered into the system.	Input to the spreadsheets is checked by the user which is considered adequate for this data. Input controls exist over financial data.			
7.3	Logical security access controls appear adequate, such as passwords.	All users have discrete passwords.			
7.4	Physical security access controls appear adequate.	Buildings are locked and have monitored alarms when they are not attended.			
7.5	Data backup procedures appear adequate.	Data is backed up every business day with weekly off-site backup. Daily backups are also taken overnight and saved by the IT support provider on their server in Perth.			
7.6	Key computations related to licensee performance reporting are materially accurate.	Computations use the model provided by the Authority. Review indicates the calculations are materially accurate.			
7.7	Management reports appear adequate for the licensee to monitor licence obligations.	The Manager Environmental Health & Building Services prepares annual reports to satisfy the licence conditions. An Annual Report is presented to the annual Elector Meeting (2011/12 Annual Report sighted). Financial Plans and Maintenance reports can be obtained from the AMIS. The new Asset Management System (Synergy) will provide improved calculation and reporting capabilities.			
8	RISK MANAGEMENT	Process Rating	A	Performance Rating	2
8.1	Risk management policies and procedures exist and are being applied to minimise internal and external risks associated with the asset management system.	<p>The AMP includes the Risk Management policy and process. Risk assessments have been completed for various events that may occur including risk treatments. Risk for other events not related to asset failure such as non-compliance with licence conditions or flooding could also be added (examples can be provided).</p> <p style="color: red;">Recommendation:</p> <p style="color: red;">6.1 The risk assessment in the AMP could be expanded to include risks other than asset failure. For example, flooding, non-compliance with licences, etc.</p>			
8.2	Risks are documented in a risk register and treatment plans are actioned and monitored.	Risks and treatment plans are documented in section 3.5 of the AMP.			
8.3	The probability and consequences of asset failure are regularly assessed.	The probability and consequences of asset failure have been assessed and are included in the risk assessments in the AMP. The risks are reviewed at least every two years when the AMP is reviewed. The risk assessment have			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
		been reviewed within the past two years (May 2013).			
9	CONTINGENCY PLANNING	Process Rating	B	Performance Rating	3
9.1	Contingency plans are documented, understood and tested to confirm their operability and to cover higher risks.	<p>There are contingency plans in the AMP included with the risk assessment for potential events. The contingency plans cover likely scenarios such as leaks, blockages, pump failure, etc. and are considered adequate in terms of scenarios covered and mitigation/contingency actions.</p> <p>However, they need to be included in the Shire's Local Emergency Management Arrangements with contact details of staff and contractors, communication/escalation process and how the plans are to be updated and tested.</p> <p>Recommendations:</p> <p>7.1 The contingency plans in the AMP need to be included in the Shire's Local Emergency Management Arrangements with contact details of staff and contractors, communication/escalation process and how the plans are to be updated and tested.</p> <p>7.2 The contingency plans need to be tested such as by an annual desktop review of the plan by the key participants, and discussion of potential scenarios. Evidence of the test and any action to be taken needs to be maintained.</p>			
10	FINANCIAL PLANNING	Process Rating	A	Performance Rating	2
10.1	The financial plan states the financial objectives and strategies and actions to achieve the objectives.	<p>There Shire has a number of documents that set out the financial plans in respect of the wastewater schemes and Shire assets generally including:</p> <ul style="list-style-type: none"> • Asset Management Plan (revised May 2013) • Forward Capital Works Plan 2010/11 to 2014/15 • Annual Budget 2012/13 <p>The AMP states the objective is to collect rates income to recover the full cost of the sewerage scheme.</p>			
10.2	The financial plan identifies the source of funds for capital expenditure and recurrent costs.	<p>The AMP identifies the source of funds as the specified area rating (rates). A reserve has also been established for major unplanned costs and capital replacement. The reserve had a balance of \$421,085 at 30 June 2012.</p> <p>The financial plan indicates there is no capital expenditure until 2016 (\$49,000) with the pipe network not due for replacement until 2063. The annual annuity to be set aside per the financial plan is \$35,640 since 2007 (accumulated balance to 30 June 2013 of \$213,840). The balance in the sewerage reserve covers this annuity to date assuming that operations and maintenance costs are covered by the annual rates income.</p>			
10.3	The financial plan provides projections of operating statements (profit and	The AMP has not yet been updated with the income and expenditure for the next 5 years (including the Annual			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
	loss) and statement of financial position (balance sheets).	<p>Operations and Maintenance Budget and the Capital Expenditure Budget that show figures from 2007).</p> <p>This is awaiting implementation of a new Shire-wide asset management system. The system (Synergy) has been selected and staff trained in its use. Estimated completion by December 2013.</p> <p>Recommendation:</p> <p>1.2 The operating and maintenance cost budget and the capital investment budget need to be updated with the current costs and rolled forward another five years. The summary in the AMP also needs to be updated.</p>			
10.4	The financial plan provides firm predictions on income for the next five years and reasonable indicative predictions beyond this period.	Refer comments in section 10.3 above.			
10.5	The financial plan provides for the operations and maintenance, administration and capital expenditure requirements of the services.	The financial plan in the AMP provides for the operations and maintenance, administration and capital expenditure requirements of the services. The AMP forecasts will need to be updated as noted in section 10.3 above.			
10.6	Significant variances in actual/budget income and expenses are identified and corrective action taken where necessary.	Variations in actual and budget income and expenses are identified in monthly reports and reviewed by the CEO and the Council. Corrective action is taken where required.			
11	CAPITAL EXPENDITURE PLANNING	Process Rating	A	Performance Rating	2
11.1	There is a capital expenditure plan that covers issues to be addressed, actions proposed, responsibilities and dates.	The 5 year forecast lifecycle asset replacement program is included in the 5 year Financial Plan.			
11.2	The plan provides reasons for capital expenditure and timing of expenditure.	The analysis assumes that assets will be replaced at the end of their standard economic life.			
11.3	The capital expenditure plan is consistent with the asset life and condition identified in the asset management plan.	The analysis assumes that assets will be replaced at the end of their standard economic life. In reality some assets will fail earlier than the standard life and some assets will remain useful beyond the standard replacement life.			
11.4	There is an adequate process to ensure that the capital expenditure plan	The capital expenditure plan needs to be updated to show any capital expenditure for the next 5 years.			

Item no.	Criteria (refer criteria in Audit Guidelines)	Observations and results (including any potential improvements)			
	is regularly updated and actioned.	<p>Recommendation:</p> <p>1.2 The operating and maintenance cost budget and the capital investment budget need to be updated with the current costs and rolled forward another five years. The summary in the AMP also needs to be updated.</p>			
12	REVIEW OF ASSET MANAGEMENT SYSTEM	Process Rating	A	Performance Rating	2
12.1	A review process is in place to ensure that the asset management plan and the asset management system described therein are kept current.	<p>Review procedures have been stated in the AMP including internal review every two years.</p> <p>The AMP has been reviewed and updated but there are still some aspects that have not been completed (see above) sections of this review.</p>			
12.2	Independent reviews (e.g. internal audit) are performed of the asset management system.	<p>According to section 36(1) of the <i>Water Services Licensing Act 1995</i> it is a condition of every licence that the licensee is to not less than once in every period of 24 months (or such longer period as the Authority allows) calculated from the commencement of this section, provide the Authority with a report by an independent expert acceptable to the Authority as to the effectiveness of the system. The Authority decided after the last audit/review to vary the audit/review period from the standard 24 months to 12 months for this AMS review.</p>			

3.4 Conclusion

The review of the Asset Management System has shown that the wastewater treatment system is operating effectively and meeting the expected performance standards under the Authority's licence.

The policies, procedures and supporting information to operate and maintain the system have improved since the previous review with revision of the Asset Management Plan and better definition of most policies and procedures. Several gaps remain in respect of:

- Updating the Asset Management Plan and information system for the Marvel Loch assets;
- Ensuring that regular water quality samples are taken for recycled water (now rectified);
- Recording actual maintenance activities and asset condition appraisals; and
- Contingency planning and testing.

The review confirmed that out of 22 recommendations from the previous review reported in April 2012, 12 recommendations have been completed and 10 are in progress. The recommendations in progress mainly relate to updating the Asset Management Plan for the Marvel Loch assets, implementation of a new Shire-wide asset management system and contingency planning.

The review recommended that the Shire:

- Completion of the "As constructed plans" and updating the Asset Management Plan and supporting information system for the Marvel Loch assets;
- Updating the financial plan to reflect current costs;
- Recording of maintenance and condition appraisals;
- Regular water quality testing of recycled water for irrigation purposes;
- Conduct rectification work on the embankments at the Southern Cross wastewater treatment plant and the leaking gate valve on pump station two;
- Implement the new Shire-wide asset management system; and
- Include contingency plans in the local emergency management arrangements and conduct annual testing of the plans.

The Post Review Implementation Plan in Appendix A provides a summary of the issues and recommendations from the asset management system review with responses from the Shire of Yilgarn.

Appendix A: Post Review Implementation Plan

No.	Issue	Priority (High Medium Low)	Recommendation	Licensee's Response	Responsibility & Completion Date
1	Asset Planning				
1.1	The AMP only covers Southern Cross assets. Marvel Loch assets are not included pending completion of the "As Constructed Plans" and populating a detailed asset register.	High	The AMP needs to be updated to cover the Marvel Loch assets – various sections need to be revised.	Contractor expects to complete work on the "As Constructed" Plan for Marvel Loch by end August 2013, updating the AMP will occur afterwards.	Manager Environmental Health & Building Services (MEH&BS) December 2013
1.2	The cost of owning and operating assets is stated in the detailed Excel spreadsheets but has not been updated since 2007.	Medium	The operating and maintenance cost budget and the capital investment budget need to be updated with the current costs and rolled forward another five years. The summary in the AMP also needs to be updated.	Will update these spreadsheets to reflect current costs and amend the summary in the AMP.	MEH&BS July 2013
1.3	Maintenance records are not documented in order to better assess the lifecycle costs.	Medium	The maintenance records of the main assets should be documented in the new AMS (Synergy) and used to assess the lifecycle costs of the assets.	The new Asset Management Synergy system was recently installed and will be used to record maintenance works carried out and to assess lifecycle costs of assets.	MEH&BS July 2013
2	Environmental Analysis				
2.1	The quality of the water used for irrigation at Southern Cross is required by the licence from the Department of Environment and Conservation to be tested every 3 months. Due to an oversight, this testing was not performed in 2011/12 which was a breach of the licence. The use of the recycled water for irrigation was suspended pending test results. Water testing re-	High	Ensure that testing of the wastewater being reused for irrigation purposes is performed each quarter and the results recorded and actioned if necessary. This requirement should be documented in section 2.3.3 of the AMP.	Testing currently being carried out and will continue as per licence requirements. Testing and results will be added to the AMP.	MEH&BS May 2013 June 2013

No.	Issue	Priority (High Medium Low)	Recommendation	Licensee's Response	Responsibility & Completion Date
	<p>commenced in December 2012 and met standards.</p> <p>The reuse of the water has not re-commenced pending further sample testing to confirm the quality is acceptable. The quarterly testing is now recorded as a reminder in the officer's computer diary.</p>				
3	Asset Operations				
3.1	<p>Assets should be documented in an Asset Register including asset type, location, material, plans of components, and an assessment of assets' physical/structural condition and accounting data.</p> <p>The AMP only covers Southern Cross assets. Marvel Loch assets are not included pending completion of the "As Constructed Plans" and populating a detailed asset register. Also, the operating area and plant schematic drawings are not included.</p> <p>As at May 2013, a contractor has basically completed and produced electronic "As Constructed Plans" of the Marvel Loch semi-deep sewer system, but the Shire is waiting on some minor changes to be made to the plans.</p>	Medium	The Asset Register needs to be updated for the Marvel Loch assets.	Contractor expects to complete work on the "As Constructed" Plan for Marvel Loch by end August 2013, updating the AMP will occur afterwards.	MEH&BS December 2013
4	Asset Maintenance				
4.1	<p>Inspections have been carried out on an ad-hoc basis but are planned to be completed monthly as part of the new maintenance procedures. The site visit on 16 May 2013 noted several issues that need rectification, as follows:</p>	Medium	<p>a) <u>Wastewater Treatment Plant – Southern Cross</u></p> <p>i. Vegetation along the fences needs to be removed (as noted in the previous Review report).</p> <p>ii. Centre access way down the centre of treatment ponds has had the stone pitching along the embankment fall into the treatment</p>	<p>i. New contractor arranged to clear vegetation.</p>	MEH&BS June 2013

No.	Issue	Priority (High Medium Low)	Recommendation	Licensee's Response	Responsibility & Completion Date
			<p>ponds. Top of embankment has deteriorated given the lack of support from the stone pitching.</p> <ul style="list-style-type: none"> o Stone pitching to be reinstated by placing additional stone along embankment. o Fill washed away surface at top of embankment with aggregate and compact. o Likely cause of damage to surface and embankment probably due to vehicles using this access way. Once remediation work has been completed on embankment, vehicles should be prohibited from using these access ways for vehicle movement. o Backfill excavated material where leak previously took place between the two sheds (pump station and Chlorination shed). o Provide firmer access track for vehicle backing into pond to discharge waste water. Signs of rutting present from vehicle movement. <p>iii. Pump station two - Effluent leaking into base of emergency overflow pit. Issued raised in previous AMS review report and problem has still not been rectified.</p> <ul style="list-style-type: none"> o Gate valve needs to be repaired or replaced with a new one. Excess effluent at base of 	<p>ii. Discussed with contractor to reinstate stone pitching along embankments – waiting on access to suitable stone. He will also reinstate this embankment & compact.</p> <p>Shire staff have been asked not to drive along the top of the embankments to stop further deterioration. Contractor to place new gravel along banks and compact.</p> <p>Contractor to fill excavation hole.</p> <p>Once embankment work has been completed then a concrete driveway/pad will be installed for vehicle access to the pond.</p> <p>iii. Local plumber has been requested to replace the faulty valve with a new valve. The overflow tank has been clean out. Purchase Order has been issued for these</p>	<p>June 2013</p> <p>May 2013</p> <p>June 2013</p> <p>June 2013</p> <p>May/June 2013</p>

No.	Issue	Priority (High Medium Low)	Recommendation	Licensee's Response	Responsibility & Completion Date
			<p>emergency storage tank to be disposed of and tank cleaned out.</p> <p>b) <u>Wastewater Treatment Plant – Marvel Loch</u></p> <p>iv. Lids to pump stations 1 and 2 left ajar and need to be properly closed when finished with maintenance checks.</p>	<p>jobs.</p> <p>iv. Local plumber has been requested to replace lids so that they are properly closed and to do this after each visit to sites.</p>	<p>May/June 2013</p>
4.2	<p>The routine and breakdown, preventative and restorative maintenance tasks and their frequency are documented in the Annual Operations and Maintenance Budget over the next 63 years.</p> <p>It was noted that the titles for “restorative” and “preventative” have been transposed in this budget. This does not affect the frequency or cost shown for the maintenance but should be corrected to avoid any misconception.</p>	Low	<p>The titles of “reactive” and “preventative” maintenance in the Annual Operations and Maintenance Budget need to be reversed.</p>	<p>Will reverse these titles on the spreadsheets as noted.</p>	<p>MEH&BS June 2013</p>
5	Asset Management Information System				
5.1	<p>The current asset management information system uses only basic Excel spreadsheets and does not require specific documentation for its operation. The AMP is based on the template from the Authority.</p> <p>The finance system uses Synergy and an additional module is being installed for asset management. Synergy has comprehensive system documentation.</p>	Medium	<p>The implementation of the new Asset Management System and input of data in relation to the wastewater treatment schemes at Southern Cross and Marvel Loch needs to be completed.</p>	<p>The new Asset Management Synergy system recently installed will be progressively updated with data related to the schemes.</p>	<p>MEH&BS December 2013</p>

No.	Issue	Priority (High Medium Low)	Recommendation	Licensee's Response	Responsibility & Completion Date
6	Risk Management				
6.1	The AMP includes the Risk Management policy and process. Risk assessments have been completed for various events that may occur including risk treatments. Risk for other events not related to asset failure such as non-compliance with licence conditions or flooding could also be added.	Medium	The risk assessment in the AMP could be expanded to include risks other than asset failure. For example, flooding, non-compliance with licences, etc. (examples can be provided).	Will expand risk assessment in the AMP to include other risks as suggested.	MEH&BS July 2013
7	Contingency Planning				
7.1	There are contingency plans in the AMP included with the risk assessment for potential events. These need to be included in the Shire's Local Emergency Management Arrangements with contact details of staff and contractors, communication/escalation process and how the plans are to be updated and tested.	Medium	<p>a) The contingency plans in the AMP need to be included in the Shire's Local Emergency Management Arrangements with contact details of staff and contractors, communication/escalation process and how the plans are to be updated and tested.</p> <p>b) The contingency plans need to be tested such as by an annual desktop review of the plan by the key participants, and discussion of potential scenarios. Evidence of the test and any action to be taken needs to be maintained.</p>	<p>a) Will arrange to include the contingency plans in the AMP into the Shire's Local Emergency Management Plan.</p> <p>b) Will arrange a desktop review of the plan with local contractors and possibly the local emergency service organisations.</p>	<p>a) MEH&BS July 2013</p> <p>b) MEH&BS December 2013</p>

END OF REPORT