

SHIRE OF MOORA

REPORT

2013 ASSET MANAGEMENT REVIEW

OF

**MOORA SEWERAGE & NON-POTABLE WATER
SUPPLY SERVICES,**

FINAL

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

INTRODUCTION

The Shire of Moora (The Shire) operates the Moora Sewerage & Non-Potable Water Supply under the provisions of Water Services Operating Licence No. 23 Version OL2, dated 15th May 2009. The Licence is issued by the Economic Regulation Authority of Western Australia (ERA) - in accordance with the provisions of the Water Services Licensing Act 1995.

Section 36 of the Act and Clause 17 of the licence require that the Licensee provides and maintains an Asset Management System for the ongoing operations, maintenance, monitoring the condition of and future replacement of its assets. Also, an independent review of the asset management system is required to be undertaken not less than once in 24 months, or such longer period allowed by the Economic Regulation Authority.

OBJECTIVES AND SCOPE

The Water Services Licensing Act 1995 requires that the Shire provide for and maintain an asset management system. The system should set out the processes to be taken by the Shire to ensure the proper planning, operation, financing, maintenance, repair and renewal of its assets and for monitoring of its water services. The Act requires the Shire to provide the ERA with a report by an independent expert on the effectiveness of the system.

This review will provide the Authority with an independent opinion on whether or not the Shire has in place the appropriate systems for the planning, construction, operation and maintenance of its water services assets.

A detailed description of the scope of the asset management review investigations is given in the main report.

TIME FRAME AND DATE OF ASSET MANAGEMENT REVIEW

The Asset Management Review covers the period from 1st December 2011 to 31st May 2013

The review was undertaken during a field visit to Moora on 11th and 12th July 2013

The previous review (by Quantum) covered the period 1st December 2008 to 30th November 2011

SUMMARY OF CONCLUSIONS

The Asset Management Review concluded that the recommendations of the 1st December 2008 to 30th November 2011 review of its Asset Management System have (in the main) not been implemented. This failure to implement the recommendations has been precipitated by the departure of Council's previous Manager – Development Services, some four months prior to the 2011 (previous) review. His replacement attended the review as Manager, Development Services (MDS) elect, without previous knowledge of the Moora sewerage system, its operational history, or access to relevant documentation – some (but not all) of which was discovered in various files over subsequent months.

Since commencing his duties in December 2011, the MDS has been involved in preparation of a tender documentation intended to renew the Water Corporation's contract to operate the Shire's sewerage collection system, in addition to other duties of his position - including implementing the recommendations of the previous review. These duties have been hampered by expiry of the contract with Water Corporation for operation of the Shire's sewerage collection facilities and the Corporation's subsequent decision to withdraw from operation of the system after December 2013.

The Shire and its MDS is now faced with the need to prepare a new Asset Management Plan (AMP) that can form the basis of operation of the sewerage system - either by the Shire or an outside contractor other than the Water Corporation, from the end of December 2013. In parallel with the foregoing the Shire has also formally requested the Water Corporation to take over the whole system. A decision on this matter is not expected for many months.

Although the Shire has commenced some review and improvements to the AMP since the last review, these have been constrained as a result of the management and contract changes stated above. It is apparent that the Asset Management Plan prepared for the Shire by consultants in 2007, has not been fully implemented or reviewed. As the AMP has not been reviewed, updated and implemented as recommended in the report of the 2011 review, the process ratings of this current (2013) review are generally more severe.

Due to Water Corporation's expertise in operation of the collection system and the Shire's diligence in operating the WWTP, the Moora sewerage and non-potable water services systems are competently achieving the basic requirements of collection and treatment of sewage and of disposal of treated effluent

However, due to the impending cessation of the Water Corporation's operation of the collection system the Shire urgently needs to:

1. Complete the proposed new Asset Management Plan in accordance with the recommendations of this report
2. Prepare tender documents based on the new AMP and call tenders for the operation of the collection system
3. Appoint an experienced officer to
 - (a) undertake responsibility for supervising the contractor(s) or.
 - (b) undertake responsibility for training and supervising the Shire's staff, if it elects to operate the collection system in-house.

If Water Corporation eventually indicates it's willingness to accede to it's request to take over the whole sewerage system, the Shire will need to consider it's acceptance in the light of the need to dismantle undertakings implemented as suggested in items 1, 2 and 3 above.

There is clearly a need for the Shire to press for an early response from the Water Corporation.

PREVIOUS REVIEW - 2011

The recommendations of the 1st December 2008 to 30th November 2011 review and subsequent actions are as follows.

1 - Asset Planning

Consider the forecast demand over the life of the scheme assets in revising the Asset Management Plan.

Outstanding

Review and revise the Asset Management Plan - including the requirements of the current operating licence, and the financial information

Commenced, not completed

4 - Environmental Analysis

Ensure compliance with the prescribed performance standards for sewerage blockages.

Shire practices adequate – depends largely on customer misuse of the system

- Update the Asset Management Plan for reporting requirements to :

The Authority re performance and compliance reporting and

The Department of Environment for the annual audit compliance report due by 1st September each year

Resolved for Dept. of Environment – Outstanding for ERA

- These dates should also be included in the Shire's corporate calendar

Resolved

5 - Asset Operations

Locate and update the asset register of Shire assets for the sewerage scheme as part of the revision of the Asset Management Plan. This should also document the current condition assessment of the assets

Partly Resolved

Update the Asset Management Plan to include the staff/ contract resources and their training plans relevant to the operation of the scheme.

Outstanding

A skills matrix and annual training plan could be developed with a record of training being kept.

Outstanding

6 – Asset Maintenance

- Update the Asset Management Plan to include the Shire staff/ contract resources and their training plans relevant to the maintenance of the scheme.

Outstanding

- A skills matrix and annual training plan could be developed with a record of training completed being kept.

Outstanding

- Based on the maintenance procedures in the revised Asset Management Plan, develop an annual maintenance schedule that is linked to the Shire works program and update the schedule for maintenance completed.

Commenced – not completed

9 - Contingency Planning

- Review the contingency Plans on at least an annual basis or when major changes are made to the plans to ensure they are operable and that appropriate persons are aware of their responsibilities in cases of emergency. This could be a desktop review of the plans with key participants.

Commenced – not completed

Documented evidence of the review / test should be retained

Outstanding

10 - Financial Planning

The financial data in the Asset Management Plan is out of date and needs to be revised

Partly Resolved

REVIEWER'S EFFECTIVENESS TABLE

Tables 5 & 6 of ERA's "Audit Guidelines", August 2010, provided the basis of assessment of the effectiveness rating levels associated with Process and Policy Definition and Asset Management Performance during the Asset Management Review

The Reviewer's assessment, (based on the above tables) of the effectiveness of the Shire's Asset Management System for Moora Sewerage and Non-Potable Water Services is summarised (overleaf) in Table A - Reviewer's Effectiveness Summary. A summary key to the assessment is provided at the foot of the table.

TABLE A –REVIEWER'S EFFECTIVENESS SUMMARY

Asset Management System	Asset Management Process & Policy Definition Adequacy Rating	Asset Management Performance Rating
1 - Asset Planning	C	3
2 - Asset creation/ acquisition	B	3
3 - Asset Disposal	B	2
4 - Environmental Analysis	C	2
5 - Asset Operations	C	2
6 - Asset Maintenance	C	2
7 - Asset Management Information System	C	3
8 - Risk Management	B	2
9 - Contingency Planning	C	3
10 - Financial Planning	C	3
11 - Capital Expenditure Planning	C	3
12 - Review of Asset Management Plan	C	3

Process & Policy Definition Key A = adequately defined. B = requires some improvement.

C = requires significant improvement D = inadequate

Performance Ratings Key 1 = performing effectively 2 = opportunity for improvement.

3 = corrective action required 4 = serious action required

SHIRE OF MOORA

REPORT

ON

2013 ASSET MANAGEMENT REVIEW

FOR

**MOORA SEWERAGE & NON-POTABLE WATER SUPPLY
SERVICES**

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SHIRE OF MOORA
REPORT ON THE 2012 ASSET MANAGEMENT REVIEW
OF
MOORA SEWERAGE & NON-POTABLE WATER SUPPLY SERVICES

1.1 – INTRODUCTION

Under Licence No.23 issued by the Economic Regulation Authority of Western Australia, the Shire of Moora (the Shire) operates and maintains the Sewerage and Non-Potable Water Services for the town of Moora.

The Shire of Moora occupies an area exceeding three thousand square kilometres of prime agricultural land. Agricultural activities in the Shire include wheat, sheep, cattle and pig farming, together with pine plantations, citrus orchards and relevant support industries.

The town of Moora - the regional centre for the Moore River region of Western Australia, is situated on the Bindoon-Moora Road, some 175 km north of Perth. The resident population is presently in the order of 1800 persons. Government services represented in the town include the Department of Agriculture, the Wheat Belt Development Commission, The Department of Child Protection, Western Health, Telstra, Water Corporation, Western Power and the Disabilities Services Commission.

The town's sewerage system, which was established in 1975/76, accepts sewage flows from 491 domestic and 100 commercial and industrial properties in the town site, together with wastes from septic tank "pump-outs". Sewage is collected and conveyed by gravity via vitreous clay reticulation sewers to seven pumping stations. The pumping stations discharge to a Wastewater Treatment Plant (WWTP) incorporating primary and a secondary oxidation ponds, followed by two polishing lagoons. The annual sewage flow to the WWTP is approximately 72,000 kl.

Treated effluent from the second polishing lagoon is pumped to a large storage dam in the town site – from which it is chlorinated and pumped to storage tanks and irrigated on the town oval and Apex Park and sports / recreation grounds during summer dry months. During winter, the effluent is retained in the storage dam.

The total length of vitreous clay reticulation sewers and rising mains from the pumping stations to the treatment plant is approximately 17,000 metres.

In addition to its water services licence issued by ERA, the Shire holds a Department of Environment and Conservation Licence No. L5214/1983/10 for the WWTP and conforms with Health Department requirements regarding water quality and other aspects of the effluent irrigation system.

The Shire operates and maintains the WWTP and the associated irrigation / effluent disposal system.

Operations and Maintenance of the sewage collection system (ie, the gravity sewers, pumping stations and rising mains to the WWTP) have historically been undertaken by the Water Corporation under a

contract with the Shire. However, the contract has expired and the Water Corporation does not wish to renew - but has agreed to maintain the service on a non-contract basis, until the end of December 2013.

The Shire and Water Corporation have agreed a program for the Shire to undertake operation and maintenance of the scheme after December 2013 – including the Water Corporation’s undertaking to train Shire staff in operation and maintenance of the system. This program is currently well behind schedule.

Meanwhile, the Shire has requested Water Corporation to take over the ownership and operation of the scheme (including the WWTP). However, a decision from the Water Corporation on whether or not to take over the scheme - and the conditions under which the takeover would be subject, is not expected until well after Water Corporation’s current assistance is curtailed.

The Shire is therefore preparing to take over operation of the scheme using its own staff or outside contract resources. With this in mind, the Shire has commenced the preparation of a new Asset Management Plan and associated operation, maintenance procedures, asset list and condition, etc - with a view to either operating the scheme using its own staff or, contracting the operations and maintenance to an external contractor on the basis of the new Asset Management Plan and performance indicators.

Clearly, an early decision by Water Corporation - on whether or not to take over the Moora sewerage system, is most desirable in terms of future planning and preparation by the Shire.

This report reviews the Shire’s Asset Management System for the review period under the current arrangements with Water Corporation. Comment is also made on the progress to date on the Shire’s proposed new Asset Management system and operations where considered appropriate.

1.2 - OBJECTIVES AND SCOPE

The Water Services Licensing Act 1995 requires that the Shire provide for and maintain an asset management system. The system should set out the processes to be taken by the Shire to ensure the proper planning, operation, financing, maintenance, repair and renewal of its assets and for monitoring of its water services. The Act requires the Shire to provide the ERA with a report by an independent expert on the effectiveness of the system.

Such a review provides ERA with an independent opinion on whether or not the Shire has in place appropriate systems for the planning, construction, operation and maintenance of its water services assets

This review therefore examined;

- The adequacy or otherwise of the outputs of the system - including documentation of performance standards and statutory requirements, system opportunities and threats, preparation of operations manuals, maintenance schedules and action records, registers of the location, condition, age etc. of assets.
- The extent to which the risks associated with the system environment and / or unexpected system failures have been assessed, quantified, documented as contingency plans and reduced

by specific practices - such as stocking selected spare parts or, equipment items subject to extended delivery or repair periods, additional storage etc

- The existence and effectiveness of systems implemented for the assessment, planning, financing and construction of new, replacement and major maintenance works and disposal of redundant assets.
- Whether or not the system has been subject to regular internal review; with systems in place to ensure that plans are regularly updated to current status, provide for prior identification of new or replacement assets, their implementation; and initiatives to improve the overall effectiveness of the asset management system.
- The Shire's response to the recommendations made in previous reviews.

The review also identifies any aspects of the asset management system, which are considered to require correction, amendment, or improvement.

1.3 - KEY DOCUMENTS INSPECTED / RECEIVED DURING THE REVIEW

Shire of Moora - Water Services Operating Licence No.23 for the Moora Sewerage & Non-Potable Water Services, issued by the Economic Regulation Authority of Western Australia (ERA)

Department of Environment and Conservation – Licence No.L5214/1983/10 – Moora Wastewater Treatment Plant

Shire of Moora – Sewerage Asset Management Plan 2012 This document updated but requires editing.

Shire of Moora - Operational Audit and Asset Management Review 2011 - Final Report dated 12th June 2012

Shire of Moora – 2012 Draft Asset Management documents

- *Financial Plan 2013 to 2022*
- *Ten year Capital Expenditure Plan*
- *Asset Register and indicative Asset Condition spread sheets*
- *Outline Maintenance schedule - collection and treatment facilities*
- *Risk Assessment and SWOT analysis, emergency procedures, Basic operations procedures*

Shire of Moora – Business / Project Plan, July 2012

Shire of Moora – Annual Report 2011/2012

Shire of Moora – 2012 Annual performance report to ERA

Shire of Moora – Re-use Scheme – Water Sampling - Sept. 2012 to April 2013

Shire of Moora – WWTP water quality test results , October 2012 to April 2013

Shire of Moora – Annual Report to Dept. Environment & Conservation

Shire of Moora – Sewerage Incident report, July 2012 to May 2013

Shire of Moora – WWTP inspection/ maintenance activity verification – July 2012 to June 2013

Shire of Moora – Occupational Safety, Health and Environment Manual – draft, undated

Shire of Moora – Annual Maintenance Program for sewerage facilities

Shire of Moora – Customer Service Charter 2012/2013

Shire of Moora – Asset Planning and Acquisition pro-forma

Shire of Moora – Operational Procedures – not detailed

Water Corporation – Schedule of blockage, overflows and odours, July 2012 to May 2013

Water Corporation – List of repairs and maintenance works orders July 2012 to June 2013

1.4 - REVIEW PERIOD AND DATE OF REVIEW

This Asset Management Review covers the period from 1st December 2011 to 31st May 2013.

The review was undertaken during visits to the Shire's offices at Moora 11th and 12th July 2013.

1.5 - KEY REVIEW PARTICIPANTS

The review was undertaken by Barry Robbins of Barry Robbins Engineering & Project Management, with the assistance of the following staff of Shire of Moora and Water Corporation.

Mr P Williams – Manager Development Services, Ms' L Parola –Finance Officer,

The relevant representative of Water Corporation was not available

1.6 - REVIEW OF RECOMMENDATIONS FROM THE PREVIOUS REVIEW

Recommendations from the 1st December 2008 to 30th November 2011 review and comment by this (2013) reviewer are set out in Table B overleaf.

TABLE B - REVIEW OF RECOMMENDATIONS FROM THE PREVIOUS REVIEW

Item	Recommendation	Action Taken	Further Action Required	Resolved/ Outstanding
1 – Asset Planning	<p><i>Consider the forecast demand over the life of the scheme assets in revising the Asset Management Plan</i></p> <p><i>Review and revise the Asset Management Plan - including the requirements of the current operating licence, and the financial information</i></p>	<p><i>Future demand has not been forecast. Asset life has been partly determined but requires refinement.</i></p> <p><i>The AMP has been reviewed but the additional recommended information is incomplete and/or incorrect</i></p>	<p><i>Include in proposed new AMP</i></p> <p><i>Include in proposed new AMP</i></p>	<p><i>Outstanding</i></p> <p><i>Outstanding</i></p>
2 – Asset Creation / Acquisition	<i>No recommendation</i>			
3 – Asset Disposal	<i>No recommendation</i>			
4 – Environmental Analysis	<p><i>Ensure compliance with the prescribed performance standards for sewerage blockages.</i></p> <ul style="list-style-type: none"> <i>Update the Asset Management Plan for reporting requirements to : The Authority re performance and compliance reporting and</i> <p><i>The Department of Environment for the annual audit compliance report due by 1st September each year</i></p> <ul style="list-style-type: none"> <i>These dates should also be</i> 	<p><i>Many blockages are due to customer misuse of the system. Licensee's practices are considered adequate.</i></p> <p><i>No action</i></p> <p><i>As recommended</i></p>	<p><i>N/A</i></p> <p><i>As per recommendation</i></p>	<p><i>Resolved</i></p> <p><i>Outstanding</i></p> <p><i>Resolved</i></p>

	<i>included in the Shire's corporate calendar</i>	<i>As recommended</i>		<i>Resolved</i>
5 – Asset Operations	<i>Locate and update the asset register of Shire assets for the sewerage scheme as part of the revision of the Asset Management Plan. This should also document the current condition assessment of the assets</i>	<i>The existing Asset Register was reviewed and considered too broad.</i>	<i>The new document requires refinement for inclusion in the proposed new AMP</i>	<i>Part Resolved</i>
	<ul style="list-style-type: none"> <i>Update the Asset Management Plan to include the staff/ contract resources and their training plans relevant to the operation of the scheme.</i> 	<i>The Shire has drafted a new asset register with asset condition indicated. Requires further refinement</i>	<i>As recommended</i>	<i>Outstanding</i>
	<ul style="list-style-type: none"> <i>A skills matrix and annual training plan could be developed with a record of training being kept.</i> 	<i>No Action</i>	<i>As recommended</i>	<i>Outstanding</i>
		<i>No Action</i>		
6 – Asset Maintenance	<ul style="list-style-type: none"> <i>Update the Asset Management Plan to include the Shire staff/ contract resources and their training plans relevant to the maintenance of the scheme.</i> 	<i>No action</i>	<i>As recommended</i>	<i>Outstanding</i>
	<ul style="list-style-type: none"> <i>A skills matrix and annual training plan could be developed with a record of training completed being kept</i> 	<i>No Action</i>	<i>As recommended</i>	<i>Outstanding</i>
	<ul style="list-style-type: none"> <i>Based on the maintenance procedures in the revised Asset Management Plan, develop an annual maintenance schedule that is linked to the Shire works program and update the schedule for maintenance completed</i> 	<i>A draft maintenance schedule has been prepared but is incomplete. The schedule has not been incorporated in the Shire's works program</i>	<i>Refine and complete the schedule</i>	<i>Outstanding</i>
7 – Asset Management Information System		<i>No Recommendation</i>		

8 – Risk Management		<i>No Recommendation</i>		
9 – Contingency Planning	<ul style="list-style-type: none"> <i>Review the contingency Plans on at least an annual basis or when major changes are made to the plans to ensure they are operable and that appropriate persons are aware of their responsibilities in cases of emergency. This could be a desktop review of the plans with key participants.</i> <p><i>Documented evidence of the review / test should be retained</i></p>	<p><i>No action</i></p> <p><i>No Action</i></p>	<p><i>As recommended</i></p> <p><i>As recommended</i></p>	<p><i>Outstanding</i></p> <p><i>Outstanding</i></p>
10 – Financial Planning	<p><i>The financial data in the Asset Management Plan is out of date and needs to be revised</i></p>	<p><i>Financial data has been updated to year 2012, but is an allowance rather than an assessment of ongoing works</i></p>	<p><i>As recommended</i></p>	<p><i>Outstanding</i></p>
11 – Capital Expenditure Planning	<p><i>No Recommendation</i></p>			
12 – Review of AMS	<p><i>No Recommendation</i></p>			

1.7 - ASSET MANAGEMENT REVIEW – EFFECTIVENESS CRITERIA

The effectiveness ratings assigned to each aspect of the review are set out in the following two Tables (overleaf) - taken from ERA's "Audit Guidelines: Electricity, Gas and Water Licences – August 2010"

Asset Management Process and Policy Definition Adequacy Ratings (ERA Guidelines - August 2010, Table No.5)

Rating	Description	Criteria
A	Adequately Defined	<p>Process policies are documented</p> <p>Process & policies adequately document the required performance of assets</p> <p>Processes and policies are subject to regular reviews and updated where necessary.</p> <p>The asset management information systems(s) are adequate in relation to the assets managed</p>
B	Requires some improvement	<p>Process & policy documentation requires improvement.</p> <p>Processes & policies do not adequately document the required performance of assets.</p> <p>Reviews of process & policies are not conducted regularly enough.</p> <p>The asset management information system(s) require minor improvements (considering the assets being managed)</p>
C	Requires significant improvement	<p>Process & policy documentation is incomplete or requires significant improvement.</p> <p>Processes do not document the required performance of the assets.</p> <p>Processes & policies are significantly out of date.</p> <p>The asset management information system(s) require significant improvements (considering the assets managed)</p>
D	Inadequate	<p>Processes & policies are not documented.</p> <p>The asset management system(s) is not fit for purpose (considering the assets managed)</p>

Asset Management Performance Ratings
(ERA Guidelines - August 2010, Table No.6)

Rating	Description	Criteria
1	Performing Effectively	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	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	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	Process is not performed, or the performance is so poor that the process is considered ineffective.

1.8 – EFFECTIVENESS SUMMARY

Based on the criteria set out in ERA Guidelines Tables 5 and 6 above, the Table C (overleaf) summarises the reviewer’s effectiveness ratings of the various areas of The Shire’s asset management system

Table C –REVIEWER’S EFFECTIVENESS SUMMARY

ASSET MANAGEMENT SYSTEM	Asset Management Process & Policy Definition Adequacy Rating	Asset Management Performance Rating
1 - Asset Planning	C	3
2 - Asset creation / acquisition	B	3
3 - Asset Disposal	B	2
4 - Environmental Analysis	C	2
5 - Asset Operations	C	2
6 - Asset Maintenance	C	2
7 - Asset Management Information System	C	3
8 - Risk Management	B	2
9 - Contingency Planning	C	3
310 - Financial Planning	C	3
11 - Capital Expenditure Planning	C	3
12 - Review of Asset Management Plan	C	3

1.9 – REVIEWER’S GENERAL COMMENTS

Table D (overleaf) sets out the Reviewer’s comments, recommendations for each aspect of the Shire’s Asset Management System.

Table D – REVIEWER’S COMMENTS ON SHIRE OF MOORA ASSET MANAGEMENT SYSTEM

Key Processes & General Requirements	Reviewer’s Comments	Recommendations	Process & Policy Definition Adequacy Rating	Performance Rating
<p>1 Asset Planning</p> <p>Asset planning strategies should focus on meeting customer needs in an effective and efficient manner. (delivering the right service at the right price)</p>	<p>Sections 1 and 2 of the AMP adequately set out the Shire’s philosophy regarding provision and standard of sewerage service, the interest of its customers and the minimum levels of service to be achieved.</p> <p>The system adequately copes with the current hydraulic and organic loading. However, there is no forecast of future population, therefore, ongoing demands on the system cannot be assessed. Long term financial allowances for upgrades or replacement of assets are therefore likely to prove unreliable.</p>	<p><i>A forecast of future demand should be prepared and - in conjunction with an assessment of asset condition, used to program ongoing works and relevant financial plans. .</i></p>	<p>C</p>	<p>3</p>
<p>2 Asset Creation & Acquisition</p> <p>The provision or improvement of an asset where the outlay can be expected to provide benefits beyond the year</p>	<p>No new assets acquisitions are planned at present. However, the Shire has a procedure and pro-forma document intended for use in the creation and /or acquisition of new assets. Reviewer inspected the documented procedure used recently in connection with the purchase and installation of a water meter on the inlet pipe to the WWTP.</p>	<p><i>Review and document the necessity for and the proposed method of de-sludging Pond No.1 at the WWTP</i></p>	<p>B</p>	<p>3</p>

of outlay	The above principles do not appear to have been applied in consideration of the need for and method of de-sludging the No.1 Pond at the WWTP. See comments under Item 11 – Capital Expenditure Planning	<i>The Shire's documented acquisition procedure should be followed for all intended acquisitions, including assessing the need for de-sludging, the treatment lagoons</i>		
<p>3 Asset Disposal</p> <p>Effective asset disposal frameworks incorporate consideration of alternatives for the disposal of surplus, obsolete, under-performing or unserviceable assets. Alternatives are evaluated in cost-benefit terms</p>	<p>In general, the Shire's approach is to maintain the performance of its assets by regular maintenance and refurbishment. This applies particularly to mechanical and electrical equipment at its seven pumping stations and effluent disposal facilities.</p> <p>The Shire is bound by Local Government requirements for asset sale.</p> <p>An Imhoff Tank and associated sludge drying beds at the WWTP were replaced some years ago when the primary pond was constructed. As there is no market for these assets they could be demolished and buried at the WWTP or the Shire's landfill site. However as they are not impeding further work or are a visual nuisance at the WWTP there is no urgency regarding their demolition and removal.</p> <p>It is noted however, that the Shire has allocated an amount of \$ 20,000 for their removal in the 2014/15 Financial Plan</p>	<i>No recommendation</i>	B	2
<p>4 Environmental Analysis</p> <p>examines the asset system environment and assesses all external factors affecting the asset system</p>	<p>A SWOT analysis and a risk analysis of 24 perceived risks is included in Section 3 of the AMP.</p> <p>Levels of service are set out in Sections 1 and 2 of the AMP as stated in Item 1 Asset Planning above.</p> <p>The performance report to ERA for 2011 /12 indicated service levels were being achieved with the exception of blockages - noted that 63.8 sewer chokes/ breaks per 100 km of sewer exceeded the upper service level of 40 per 100 km . This represented eleven incidents of which several were due to blockages caused by customer misuse of the</p>	<i>Ensure that the SWOT and Risk Analysis are reviewed and upgraded and that the requirement to report to ERA is included.</i>	C	2

	<p>system. Shire's practices are considered adequate.</p> <p>Department of Health required water quality test results for 2012 and 2013 (to date) were within limits.</p> <p>Section 2.4.2 Of the AMP – <i>Reporting Requirements</i> neglects to list the necessity to report performance to ERA and the report contents</p>			
<p>5 Asset Operations</p> <p>Operations functions relate to the day to day running of assets and directly affect service levels and costs</p>	<p>The AMP refers to Water Corporation's OHS Manual for operation of the collection system. The Water Corporation manual is not included in the AMP, nor does the Shire have a copy of the document.</p> <p>Apart from reference to the Water Corporation Manual, the AMP has only half a page of inadequate comment on operation of the pressure mains and gravity sewers and the pumping stations. While it is reasonable to assume that Water Corporation operates the collection system competently and in accordance with its own operating instructions, the Shire has no knowledge of the procedures or oversight of the operations</p> <p>The AMP operation procedures for the WWTP the effluent chlorination and disposal system are similarly inadequate in terms of detailed description and timing.</p> <p>Despite the above negative comments regarding the Shire's documentation of it's AMP, Water Corporation's operations of the collection system and the Shire's operations of the WWTP and disposal system are considered competently implemented.</p>	<p><i>The Shire should develop detailed operation plans for the collection, treatment chlorination and effluent disposal systems. These plans should be included in its proposed new Asset Management Plan, together with a formal training program for its future operators</i></p> <p><i>It is noted that work on these documents has commenced. Draft documentation was inspected by the reviewer. The documentation should be completed as soon as possible in anticipation its inclusion in the proposed new Asset Management Plan</i></p>	C	2
<p>6 .Asset Maintenance</p> <p>Maintenance functions relate to the up keep of assets and directly</p>	<p>Maintenance procedures in the AMP are basic and out of date. eg. maintenance of the sludge drying beds is included despite the drying beds being out of service for several years. While the list of maintenance operations is reasonable, descriptions of their implementation are not provided – necessitating the operator to have thorough</p>	<p><i>The Shire should continue to develop the maintenance procedures, schedule and supplier information with a view to completing the proposed new AMP prior to Water Corporations expected withdrawal of its services</i></p>	C	2

<p>affect service levels and costs</p>	<p>separate training. A copy of the Water Corporation maintenance sheet is referred to in the AMP but not provided, nor does the Shire have a copy of the maintenance sheet. The AMP does not have a list of spare parts held or the details of relevant suppliers or agents It is understood that Water Corporation undertakes its own risk management assessment for the purpose of establishing maintenance priorities. However details are not provided</p> <p>The Asset Register in the AMP is basic and insufficiently detailed</p> <p>The Water Corporation provides the Shire with quarterly list of operation and maintenance tasks undertaken. The Shire uses the information to compile data for reporting to ERA and Dept Environmental Registration. Water Corporation bills the Shire annually for expenditure associated with operating and maintaining the collection scheme. Also, it seeks Shire approval for larger item expenditure prior to purchase.</p> <p>The Shire has commenced drafting a more detailed maintenance program and Asset Register in anticipation of their inclusion in the proposed new Asset Management Plan Despite the above negative comments regarding the Shire's documentation of its AMP, Water Corporations maintenance of the collection system and the Shire's maintenance of the WWTP and disposal system are considered competently implemented.</p>			
<p>7. Asset Management Information Systems (MIS)</p> <p>A combination of processes, data and software that support the asset management</p>	<p>The Shire currently operates a paper based asset management information system. This has proved adequate in the past, as Water Corporation has undertaken the bulk of recording operation and maintenance activities, incident reports etc. As the Water Corporation is withdrawing its service after December 2013, a more sophisticated AM Information system will need to be established as the Shire undertakes the operation of (in addition to the responsibility for) the overall system. While financial information will continue to</p>	<p><i>The Shire should develop a computer based asset management information system from the software it has acquired. In view of the necessity for the Shire to assume the operation and maintenance of the sewerage system after December 2013, it is essential that this proceed promptly.</i></p>	<p>C</p>	<p>3</p>

functions.	reside on the Shire's "Synergy." software package a computer based spread sheet information system will be necessary to collate and control the information gathered and reported on. The Shire has obtained basic spread sheet software from another Shire and intends adapting this system to Moora system requirements. When implemented, the system will be available only to selected Shire staff and will be subject to the Shire's normal security procedures of password access, daily back-up, and building security.			
<p>8. Risk Management</p> <p>involves the identification of risks and their management within an acceptable level of risk</p>	<p>A SWOT analysis and a risk analysis of 24 perceived risks is included in Section 3 of the AMP. Control measures are stated for each risk identified and the resulting residual risks assessed. The risks identified, their control measures and residual risks should all be reviewed and amended/extended as appropriate. There is no stated minimum period or conditions under which risks should be reviewed.</p> <p>It is noted that some of the Control Measures refer to the minimum value of the sewerage reserve fund and a minimum storage of 48 hours of sewage flow. Reviewer doubts the validity of the reserve fund balance as a control measure. Also, the storage volume and location should be verified ie, is it in the reticulation pipes, wet wells of pumping stations, WWTP etc ? Storage volume in say, the WWTP is not a control in the event of an upstream pumping station failure</p>	<p><i>The range of risks, the attendant consequences and controls should be reviewed and amended as appropriate.</i></p> <p><i>The Risk Register should specify the minimum period and other change of condition requiring a review of risks</i></p> <p><i>The relevance and effectiveness of the sewerage reserve fund as a control measure should be reviewed and the make up of the stated 48 hours flow storage should be determined and its relevance as a control reviewed.</i></p>	B	2
<p>9. Contingency Planning</p> <p>Contingency plans document the steps to deal with the unexpected failure of an asset</p>	<p>Contingency plans are documented as emergency plans in Section 3.5 of the AMP. The plans are considered too basic and out of date.</p> <p>The list of relevant staff is incomplete and refers to various officers incorrectly, e.g. the Works Manager is also referred to as the Works Supervisor. Also, the Manager Development Services is referred to in the text as the Environmental Health Officer. The role of electricians, WA Webb & Co is not stated. Although the electrician is indicated as a contact in the text, it is not apparent from the document who the electrician is.</p>	<p><i>Review and re-write the emergency plans as Contingency plans to:</i></p> <ul style="list-style-type: none"> • <i>Expand the list of contingencies likely to occur.</i> • <i>Provide more detail of the actions to be undertaken and the procedural details for their implementation</i> • <i>Expand the list of authority and contractor contacts together with their role and contact details.</i> 	C	3

	<p>Telephone contacts for all relevant service authorities such as Police, Fire Brigade and Bush Fire Brigade, Power and Gas, State Emergency Service etc should also be supplied.</p>	<ul style="list-style-type: none"> • <i>Include a requirement for the contingency plans to be periodically tested and provision for recording those involved in such tests, the date, outcome of the tests, amendments made and any action taken.</i> 		
<p>10. Financial Planning</p> <p>The financial planning component of the asset management plan brings together elements of the service delivery to ensure its financial viability over the long term.</p>	<p>The AMP contains a ten year Income/ Expenditure forecast supported by corresponding ten year Capital Expenditure and Reserve contribution forecasts. All plans are based on a commencement of 2011/12 and are therefore at least one year out of date.</p> <p>The Income/Expenditure plan includes specific capital works for 2014/15 and an amount of \$200,000 for reticulation pipeline replacement for all remaining years of the forecast period. There are no calculations available which indicate how the capital works tasks and estimates were determined. Also, contributions to the sewerage reserve are not included in the Expenditure /Income forecast</p> <p>The value of funds held in the sewerage reserve should be determined annually on the basis of the current replacement value of assets divided by their remaining life expectancy in years. The contribution to the fund for a given year is then the difference between determined annual value and the current balance. The determined annual value is therefore dependent on the replacement value of the assets for the year in question and the remaining life of the assets.</p> <p>The Shire's financial plan assumes that the useful life expectancy of all asset classes will be 100 years. Many assets, particularly pumping stations, mechanical equipment and rising mains, will have a useful life expectancy more in the order of 40 to 50 years or so – despite ongoing maintenance and refurbishment. The life of the gravity sewers and manholes will similarly be more in the order of 70 years, if well maintained.</p>	<p><i>Update the Income / Expenditure plans to:</i></p> <ul style="list-style-type: none"> • <i>Reflect the current year and ten years hence.</i> • <i>Include the result of a review of the useful life expectancy of the assets and the 2013/14 replacement value of the assets - with a view to setting a more appropriate annual value of funds held in the sewerage reserve and the annual contributions.</i> • <i>Include annual contributions to the sewerage reserve fund and review the reasons why some years have no allowance for contributions to the fund.</i> • <i>Clarify the discrepancy between the allowances for transfer to sewerage reserve between the ten year plan in the AMP and the 2013/14 budget.</i> • <i>Amend the annual transfer to reserve amounts if deemed necessary following the useful life review in the second dot point above.</i> 	<p>C</p>	<p>3</p>

	<p>Reviewer is concerned that:</p> <ul style="list-style-type: none"> on the basis of the shorter useful life suggested above, the determined annual value of the sewerage reserve - and hence annual contributions to the reserve will have been too low. A review of the working life expectancy of the sewerage system elements and the appropriate contributions to the sewerage fund is considered necessary. the Sewerage Reserve Fund summary presented in Table 8 of the AMP shows many years when proposed contributions to the fund are zero. This is only considered reasonable when the funds in the reserve exceed the determined annual value. In contrast to the above dot point, a separate copy of the Shire's transfer to reserves sheet for the 2013/14 budget indicates an allowance of \$230,000 to the sewerage reserve annually to the year 2021/2022. This anomaly reinforces the need for all documentation to be kept up to date in terms of timing and content 			
<p>11. Capital Expenditure Planning</p> <p>The capital expenditure plan provides a schedule of new works, rehabilitation and replacement works, together with estimated annual expenditure on each over the next five or more years.</p>	<p>The capital expenditure five year plan in the AMP indicates 2013/14 expenditure of \$200,000 for renewal (de-sludging) of the primary lagoon at the WWTP. The 2014/15 plan indicates expenditure of \$162,000 for other specified works</p> <p>The remainder of the five years period has lump sum allowances of \$ 200,000 - as does the ten year financial plan discussed under Item 10 above, for the replacement of VC pipes over the years 2015/16 to 2021/22. This allowance appears somewhat arbitrary, as there appears no written justification or estimates for allocation of this expenditure.</p> <p>Inspection of CCTV footage of some of the VC pipe collection system indicates that the pipes (at least in the area tested</p>	<p><i>Re-visit the proposed plans and allowances to replace VC pipes in conjunction with further consideration of the useful life of assets as discussed in Item 11 – Financial Planning</i></p> <p><i>Update the expenditure plan in terms of time and content.</i></p> <p><i>Determine whether or not the No.1 pond at the WWTP requires de-sludging.</i></p> <p><i>Consult Health Department on the possibility of bypassing Pond No.1 to allow de-sludging if proved necessary.</i></p> <p><i>Conduct an assessment of the condition of the VC collection system and manholes. Consider a total or staged</i></p>	<p>C</p>	<p>3</p>

	<p>are in good condition.</p> <p>Regarding renewal of primary pond No1 at the WWTP, consideration is being given to purchasing equipment that will allow de-sludging without emptying the pond.</p> <p>Reviewer has not sighted estimates for the proposed procedure, but is surprised at the significant estimated cost – particularly as it has not been established that the sludge build up is sufficient to necessitate its removal. It is suggested that this necessity be determined prior to proceeding further.</p> <p>Reviewer considers that adequate treatment could be achieved with Pond No.1 temporarily out of service. It would therefore appear more practical and less expensive to temporarily divert incoming flows direct to pond No.2, pump pond No.1 out to pond 2 and allow pond 1 to dry out over summer. Sludge could then be removed and Pond No.1 returned to service for the following winter.</p>	<p><i>partial cctv program.</i></p> <p><i>Provide a detailed breakdown of the expenditure proposed to allow the \$200,000 allowances for replacement of VC pipes to be verified or amended</i></p>		
<p>12. Review of Asset Management System</p> <p>The asset management system is regularly reviewed and up-dated.</p>	<p>The AMP has been partially updated but the update - apart from being incomplete, contains many anomalies as noted elsewhere in this report. These matters have been discussed with the Shire's Manager, Development Services.</p> <p>There is clearly a need to rewrite the document in preparation for the Water Corporation's withdrawing its operation and maintenance services after December 2013.</p> <p>It is noted that the Shire has commenced the preparation of draft sections of a proposed new AMP. Also, that an amount of \$150,000 for preparation and implementation of the new AMP in the 2013/14 budget papers</p>	<p><i>The Shire should make every effort to complete the new AMP prior to Water Corporations withdrawal of its operations and maintenance services after December 2013</i></p>	<p>C</p>	<p>3</p>

1.10- CONCLUSIONS & RECOMMENDATIONS RESULTING FROM THE ASSET MANAGEMENT REVIEW

(a) – CONCLUSIONS

This report concludes that the Moora sewerage system has been well operated and maintained during the review period and in the main achieved the physical performance standards set by it's ERA and Department of Environment and Conservation licenses and the Department of Health.

However the documentation and review requirements of its ERA licence have largely been neglected. The Shire's Asset Management Plan prepared by consultants in 2007 has not been reviewed and is well out of date

Water Corporations decision to discontinue operating the sewage collection system after December 2013 places a significant and urgent obligation on the Shire to prepare a new Asset Management Plan and either continue operation of the scheme following Water Corporations withdrawal of its service, or call tenders for the scheme to be operated by an external contractor.

In parallel with the above, the Shire has formally requested Water Corporation to take over and operate the whole scheme.

(b) – RECOMMENDATIONS

The Shire should press the Water Corporation for an early decision on the Shire's request for the Corporation to take over the whole Moora sewerage scheme.

The following is a summary of the recommendations on specific items resulting from this review.

1 – Asset Planning

A forecast of future demand should be prepared and - in conjunction with an assessment of asset condition, be used to program ongoing works and relevant financial plans. .

2 - Asset Creation and Acquisition

Review and document the necessity for and the proposed method of de-sludging Pond No.1 at the WWTP

The Shire's documented acquisition procedure should be followed for all intended acquisitions, including assessing the need for de-sludging, the treatment lagoons

3 – Asset Disposal

No Recommendation

4 – Environmental Analysis

Ensure that the SWOT and Risk Analysis are reviewed and upgraded and that the requirement to report to ERA is included.

5 - Asset Operations.

The Shire should develop detailed operation plans for the collection, treatment, chlorination and effluent disposal systems. These plans should be included in its proposed new Asset Management Plan, together with a formal training program for its future operators

It is noted that work on these documents has commenced. Draft documentation was inspected by the reviewer. The documentation should be completed as soon as possible in anticipation its inclusion in the proposed new Asset Management Plan

6 – Asset Maintenance

The Shire should continue to develop the maintenance procedures, schedule and supplier information with a view to completing the proposed new AMP prior to Water Corporations expected withdrawal of its services

7 – Asset Management Information System

The Shire should develop a computer based asset management information system from the software it has acquired. In view of the necessity for the Shire to assume the operation and maintenance of the sewerage system after December 2013, it is essential that this proceed promptly.

8 – Risk Management

The range of risks, the attendant consequences and controls should be reviewed and amended as appropriate.

The Risk Register should specify the minimum period and other change of condition requiring a review of risks

The relevance and effectiveness of the sewerage reserve fund as a control measure should be reviewed and the make up of the stated 48 hours flow storage should be determined and its relevance as a control reviewed.

9 – Contingency Planning

Review and re-write the emergency plans as Contingency plans to:

- *Expand the list of contingencies likely to occur.*
- *Provide more detail of the actions to be undertaken and the procedural details for their implementation*
- *Expand the list of authority and contractor contacts together with their role and contact details.*
- *Include a requirement for the contingency plans to be periodically tested and provision for recording those involved in such tests, the date, outcome of the tests, amendments made and any action taken.*

10 - Financial Planning

Update the Income / Expenditure plans to:

- *Reflect the current year and ten years hence.*
- *Include the result of a review of the useful life expectancy of the assets and the 2013/14 replacement value of the assets - with a view to setting a more appropriate annual value of funds held in the sewerage reserve and the annual contributions.*
- *Include annual contributions to the sewerage reserve fund and review the reasons why some years have no allowance for contributions to the fund.*
- *Clarify the discrepancy between the allowances for transfer to sewerage reserve between the ten year plan in the AMP and the 2013/14 budget.*
- *Amend the annual transfer to reserve amounts if deemed necessary following the useful life review in the second dot point above.*

11 – Capital Expenditure Planning

- *Re-visit the proposed plans and allowances to replace vc pipes in conjunction with further consideration of the useful life of assets as discussed in Item 11 – Financial Planning*
- *Update the expenditure plan in terms of time and content.*

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- Determine whether or not the No.1 pond at the WWTP requires de-sludging.
 - Consult Health Department on the possibility of by-passing Pond No.1 to allow de-sludging if proved necessary.
 - Conduct an assessment of the condition of the VC collection system and manholes. Consider a total or staged partial cctv program.
 - Provide a detailed breakdown of the expenditure proposed to allow the \$200,000 allowances for replacement of VC pipes to be verified or amended

12 – Review of AMS

The Shire should make every effort to complete the new AMP prior to Water Corporations withdrawal of its operations and maintenance services after December 2013

1.11 – REVIEWER’S PROFESSIONAL TIME INPUT

Barry Robbins spent 41 hours preparing for, and conducting this review and preparing the report document

1.12 – POST REVIEW IMPLEMENTATION PLAN

A post review implementation plan prepared by the Shire is attached as Appendix A

NOTE – The “Action and Date” columns of Appendix A are to be completed by Shire of Moora and submitted to ERA with this report.

APPENDIX A

POST REVIEW IMPLEMENTATION PLAN

REVIEW ITEM	RECOMMENDATION	POST REVIEW IMPLEMENTATION PLAN ACTION	SHIRE OFFICER RESPONSIBLE / DATE OF IMPLEMENTATION
1 – Asset Planning	<i>A forecast of future demand should be prepared and- in conjunction with an assessment of asset condition, used to program ongoing works and relevant financial plans. .</i>	Commenced	MDS December 13
2 – Asset Creation & Acquisition	<i>Review and document the necessity for and the proposed method of de-sludging Pond No.1 at the WWTP The Shire's documented acquisition procedure should be followed for all intended acquisitions, including assessing the need for de-sludging, the treatment lagoons</i>	Planned for 13/14	MDS March 14
3 - Asset Disposal	<i>No Recommendation</i>		
4 – Environmental Analysis	<i>Ensure that the SWOT and Risk Analysis are reviewed and upgraded and that the requirement to report to ERA is included</i>	To be commenced November 13	MDS November 13
5 – Asset Operations	<i>The Shire should develop detailed operation plans for the collection, treatment chlorination and effluent disposal systems. These plans should be included in its</i>	Asset Management plan Commenced Operational Plan detailing	MDS December 13

	<p>proposed new Asset Management Plan, together with a formal training program for its future operators</p> <p>It is noted that work on these documents has commenced. Draft documentation was inspected by the reviewer. The documentation should be completed as soon as possible in anticipation its inclusion in the proposed new Asset Management Plan</p>	<p>collection & reticulation of Chlorinated sewerage to be included in Asset Management plan</p>	
6 – Asset Maintenance	<p>The Shire should continue to develop the maintenance procedures, schedule and supplier information with a view to completing the proposed new AMP prior to Water Corporations expected withdrawal of its services</p>	<p>This is in progress</p>	<p>MDS December 13</p>
7- Asset Management Information System	<p>The Shire should develop a computer based asset management information system from the software it has acquired. In view of the necessity for the Shire to assume the operation and maintenance of the sewerage system after December 2013, it is essential that this proceed promptly.</p>	<p>The Shire has the basis for this to occur but needs more information to put it together. Training is planned this month</p>	<p>MDS December 13</p>
8 – Risk Management	<p>The range of risks, the attendant consequences and controls should be reviewed and amended as appropriate.</p> <p>The Risk Register should specify the minimum period and other change of condition requiring a review of risks</p> <p>The effectiveness of the sewerage reserve fund as a control measure should be reviewed and the make up of the stated 48 hours flow storage should be determined and its relevance as a control reviewed.</p>	<p>Changes to the existing risk Register will be made so it is compliant with this requirement</p>	<p>MDS January 14</p>
9 – Contingency Planning	<p>Review and re-write the emergency plans as Contingency plans to:</p> <ul style="list-style-type: none"> Expand the list of contingencies likely to occur. 	<p>It is anticipated to do this in early 2014</p>	<p>MDS January/February 2014</p>

	<ul style="list-style-type: none"> • Provide more detail of the actions to be undertaken and the procedural details for their implementation • Expand the list of authority and contractor contacts together with their role and contact details • Include a requirement for the contingency plans to be periodically tested and provision for recording those involved in such tests, the date, outcome of the tests, amendments made and any action taken. 		
10 – Financial Planning	<p>Update the Income / Expenditure plans to:</p> <ul style="list-style-type: none"> • Reflect the current year and ten years hence. • Include the result of a review of the useful life expectancy of the assets and the 2013/14 replacement value of the assets - with a view to setting a more appropriate annual value of funds held in the sewerage reserve and the annual contributions. • Include annual contributions to the sewerage reserve fund and review the reasons why some years have no allowance for contributions to the fund. • Clarify the discrepancy between the allowances for transfer to sewerage reserve between the ten year plan in the AMP and the 2013/14 budget. • Amend the annual transfer to reserve amounts if deemed necessary following the useful life review in the second dot point above. 	This will be accomplished early next year	MDS Feb 14
11 – Capital Expenditure Planning	<ul style="list-style-type: none"> • Re-visit the proposed plans and allowances to replace vc pipes in conjunction with further consideration of the useful life of assets as discussed in Item 11 – Financial Planning • Update the expenditure plan in terms of time and content. • Determine whether or not the No.1 pond at the WWTP requires de- 	This is a budget requirement and will be budgeted for 14/15 Jan 14	MDS June 14 Jan 14

	<p><i>sludging.</i></p> <ul style="list-style-type: none"> • Consult Health Department on the possibility of by-passing Pond No.1 to allow de-sludging if proved necessary. • Conduct an assessment of the condition of the VC collection system and manholes. Consider a total or staged partial cctv program. • Provide a detailed breakdown of the expenditure proposed to allow the \$200,000 allowances for replacement of VC pipes to be verified or amended 	<p>September 13</p> <p>September 13</p> <p>Budget item 14/15</p> <p>Budget item 14/15</p>	<p>September 13</p> <p>June 14</p>
<p>12 – Review of Asset Management System</p>	<p><i>The Shire should make every effort to complete the new AMP prior to Water Corporation's withdrawal of its operations and maintenance services after December 2013</i></p>	<p>This item will be addressed January 14</p>	<p>MDS</p> <p>January 14</p>