SHIRE OF COOLGARDIE

REPORT

2013 ASSET MANAGEMENT REVIEW

OF

COOLGARDIE SEWERAGE &NON-POTABLE WATER SUPPLY SERVICES,

(3rd March 2014)

EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

INTRODUCTION

The Shire of Coolgardie (The Shire) operates the Coolgardie Sewerage & Non-Potable Water Supply under the provisions of Water Services Operating Licence No. 13 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 November 2012 to 31st October 2013.

The review was undertaken during a field visit to Coolgardie on 4th and 5th November 2013

SUMMARY OF CONCLUSIONS

The Asset Management Review concluded that the recommendations of the 2012 review of the Shire of Coolgardie's Asset Management System have been only partly implemented. The Shire's failure to fully implement the recommendations of the review has been primarily due to a lack of management and operational staff for the water services during the first two months of the twelve months period since the 2012 review. The Manager Development Services (MDS) who has responsibility for the water services commenced his employment with the Shire in December 2012. A full time Ranger / Water Services Operator subsequently commenced his duties in May 2013

During the short period since employment of these officers, they have concentrated on identifying, prioritizing and correcting obvious shortcomings in various assets and processes - in order to raise the level of operation and reporting. The intention is to address documentation and remaining

recommendations of the 1st November 2011 to 31st October 2012 and (subsequently) this 1st November 2012 to 31st October 2013 review. Reviewer concurs with this approach.

Input activities during the recent six to ten months include investigation of operational options at the treatment plant, installation of flow meters, monthly sampling, testing and recording of treated water and irrigation waters, investigation of process and optimum location of chlorination equipment, together with electrical and physical works at the pumping station. Meanwhile, staff of the Kalgoorlie Boulder have provided training at the Kalgoorlie treatment plant for the Coolgardie operator and provided Coolgardie with Asset Management Information System (AMIS) software and assistance with drafting a new Asset Management Plan and other documentation.

Local Electrical and Mechanical firms have also been appointed to assist with asset maintenance and installation.

Reviewer considers that the Coolgardie sewerage and non-potable water services systems are being operated in a manner that satisfies the standard and quality requirements of its ERA and Department of Environmental Regulation (DER) licences. Health Department standards for treated effluent irrigated to the Coolgardie Park and Oval have not been consistently, achieved due to lack of disinfection. The Shire is currently installing chlorination equipment to ensure ongoing compliance.

Significant progress has been achieved in the short period since appointment of the MDS. However, much needs to be done to address the outstanding requirements associated with development of system and procedures documentation and asset condition assessment

This review is unfavourable in several areas. The large number of recommendations (set out in the Table D of this report) result mainly from the initial lack of management and operational staff and the short time period since such staff appointments.

PREVIOUS REVIEW - 2012

The recommendations of the 2012 review and subsequent actions are detailed in Table B of the report. A summary of Reviewer's assessment of the status of actions by the Shire is as follows:

1 - Asset Planning

The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.

In particular the document should contain statements of policy and procedures regarding:

- Asset Planning, Creation and Disposal. ***Mainly Resolved***
- Operations, Maintenance and performance monitoring of assets and processes ***Mainly Resolved***
- A secure Asset Management Information System (including staff training) for recording all legislative, operational, maintenance reports, correspondence etc ***Mainly Resolved***
- Operating Environment, Risk Analysis and Contingency Planning ***Outstanding***

A procedure for reviewing the AMP at intervals of not more than 2 years, (or if significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer. ***Resolved***

2 - Asset Creation / Acquisition

The AMP should include procedures for Asset Creation Acquisition. These should encompass

- A statement of the Government and Shire's procurement / purchasing protocols. ***Resolved***
- Full evaluation of capital, operating and life cycle costs. ***Partly Resolved***
- Comparison of competing asset and non-asset solutions including operating convenience and supplier / support availability. ***Resolved***

The procured / installed assets are supplied with full specifications and operating instructions as appropriate. ***Outstanding***

3 - Asset Disposal ***No Recommendation***

4 - Environmental Analysis

An analysis of the environment in which the water services are operated should be included in the AMP. The analysis should include:

- The Legislative Environment ***Outstanding***
- Levels of service and reporting requirements ***Outstanding***

- Threats and opportunities to the system including bush fire, electrical failure, blockage , toxic materials input, grease and other blockages, flooding and discharge, gaseous discharge (if chlorine gas disinfection adopted). ***Outstanding***

- Protocols for monitoring, sampling testing and reporting sewage and effluent flows and quality, blockages, overflows etc. ***Outstanding***

In order to be able to comply with the monitoring and reporting requirements the Shire should also:

- Appoint an officer to undertake the day to day inspections, reporting, recording, maintenance, sampling and monitoring of the sewerage and non-potable water system. It would be prudent to send this officer to a Water Plant Operators course conducted by the Water Corporation.

  Resolved

- Investigate the options and install flow measuring equipment to measure and record flow rates and daily flows to the treatment plant and the effluent disposal systems. It was noted that some of the pumping installations already have flow meters, and / or pressure gauges and / or hours run meters. All installations should have each of the above and should be recorded daily. ***Mainly Resolved***

5 - Asset Operations

The Shire should appoint an officer as recommended in Item 4 – Environmental Analysis ***Resolved***

The Shire should prepare a detailed set of instructions for the operation of the water services and their individual components ***Outstanding***.

The instructions should include basic drawings of the system elements supported by instructions in the operation sequence of pumps, switchboards and recording of readings from flow meters, pressure gauges and reporting of faults or malfunctions. ***Outstanding***

The operating instructions should also include a copy of the relevant safety plan for the system and a reporting procedure in the event of an emergency ***Outstanding***

6 - Asset Maintenance

The Shire should appoint an officer as recommended in Item 4 – Environmental Analysis ***Resolved***

The Shire should prepare a detailed set of instructions for the maintenance of the water services and their individual components.

- The instructions should include basic drawings of the system elements supported by instructions for inspection and maintenance and maintenance frequency ***Outstanding***

- The instructions should include pro-forma sheets for reporting faults and for verification that maintenance items have been executed. ***Outstanding***

- A list of spares held and contact information for their replacement ***Partly Resolved***

- A forward program for ongoing assessment of the condition and performance of assets.

  Outstanding

The Shire should:

- Implement an initial program of inspection and evaluation of the condition of manholes and pipework within the sewage collection system. Such a program could be undertaken over period of say 12 months- depending on cost and staff resources ***Outstanding***
- From the results, identify any elements that require replacement or maintenance. ***Outstanding***
- Prepare a program and estimates for both capital replacement and maintenance. ***Outstanding***
- Implement the programs ***Outstanding***

Grease blockages are not normally a factor in domestic sewers. Shire should check whether grease producing facilities connected to the sewer have properly maintained grease traps. ***Outstanding***

7 - Asset Management Information System

The Shire should install a "stand-alone" basic asset management software system on its computer network and train appropriate staff in its use. ***Partly Resolved***

8 - Risk Management

The Shire should undertake an analysis of the risks identified as threats in Item 4 above "Environmental Analysis " The analysis should be undertaken in accordance with Australian Standard 4360-2004.Schedule 1 - Risk Management

Depending on the risk level, existing factors mitigating the risk should be assessed and additional strategies identified and implemented as appropriate ***Mainly Resolved***

9 - Contingency Planning

The Shire should prepare and document a contingency plan for each emergency situation identified in the Risk Analysis

. Details should include:

- Detailed procedures for implementing each contingency plan ***Outstanding***
- Names and contact details for Shire and relevant Authorities affected by a given situation, eg

  Electrical Supply Authority, Fire Brigade, Police, ***Outstanding***
- Names and contact details for support trades Plumber, Electrician, Pumping /Equipment Hire /Suppliers ***Outstanding***

10 - Financial Planning ***No Recommendation***

11 - Capital Expenditure Planning

The Shire conduct an Asset condition program as recommended in Item 6 - Asset Maintenance.

Outstanding

12 - Review of AMS

The recommendations of Item (1) "Asset Planning," apply also to this area and are repeated below.

The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.

In particular the document should contain statements of policy and procedures regarding:

- Asset Planning, Creation and Disposal. ***Mainly Resolved***
- Operations, Maintenance and performance monitoring of assets and processes ***Outstanding***
- A secure Asset Management Information System (including staff training) for recording all legislative, operational, maintenance reports, correspondence etc ***Partly Resolved***
- Operating Environment, Risk Analysis and Contingency Planning ***Outstanding***
- A procedure for reviewing the AMP at intervals of not more than 2 years, (or when significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer. ***Resolved***

ERA SECTION 39 NOTICE – STATUS UPDATE

On 20th March 2013, ERA issued the Shire of Coolgardie with a Notice under Section 39 of the Water Licensing Act 1955 requiring the Shire to correct deficiencies noted in Table 1 of the Notice as set out in the following. Reviewer's assessment of the response is summarised in red.

More detail is provided in Section 4 of the accompanying report.

Asset Planning.

The Asset Management Plan (AMP) was developed in 2006 but has not been reviewed or implemented since. ***Partly Resolved***

The document is not used in managing the assets ***Outstanding***

Asset Creation

The AMP does not contain procedures for asset creation. The Manager, Technical Services determines the need for new assets on an annual basis. ***Partly Resolved***

Environmental Analysis

The AMP does not contain environmental analysis ***Outstanding***

Results of the effluent quality sampling should be reported to the Department of Health on a monthly basis but there is no evidence that this would take place as required. The water quality is not being adequately monitored. ***Mainly Resolved***

There is no flow monitoring installations to determine sewage inflow and outflow. The effluent is not being disinfected before disposal to the sports oval and parks. ***Mainly Resolved***

Asset Operations

The collection, treatment and disposal elements are essentially automatic but the system is operated without any overall daily control. There is no designated officer to undertake the daily operation, maintenance, inspections, monitoring and recording of the system. ***Resolved***

There are no operating instructions for the water services at present. ***Outstanding***

Asset Maintenance

Some regular maintenance practices have been recently introduced. There is a list of regular maintenance requirements in the AMP, but this full list is not implemented. The maintenance is not monitored or recorded. Maintenance responsibilities are not recorded. ***Outstanding***

The asset register has not been created. ***Resolved***

A list of spare parts suppliers has not been created. ***Outstanding***

Asset Management Information System (AMIS)

There is no asset management information system in place. ***Resolved***

The excel spread sheets referred to in the 2011 review are not used. ***Resolved***

The Shire has implemented a local government software package ”Synergy” but due to human error in recording the asset documents into the system, the documents cannot be sourced from the system. ***Resolved***

Risk Management

The Shire has not undertaken formal risk assessment or analysis, nor developed strategies for their mitigation or removal. ***Mainly Resolved***

Contingency Planning.

The Shire has not prepared a contingency plan as required by its operating licence. ***Outstanding***

Capital Expenditure Planning

The Shire maintains a sewerage reserve fund and has an asset replacement program. However, assets are not regularly inspected to foresee the replacement needs. ***Outstanding***

Review of Asset Management System

The AMP has not been reviewed since 2006 ***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 Coolgardie Sewerage and Non-Potable Water Services is summarised 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	**B**	**2**
2 - Asset creation / acquisition	**A**	**1**
3 - Asset Disposal	**B**	**N/A**
4 - Environmental Analysis	**C**	**3**
5 - Asset Operations	**C**	**2**
6 - Asset Maintenance	**C**	**2**
7 - Asset Management Information System	**B**	**2**
8 - Risk Management	**A**	**2**
9 - Contingency Planning	**C**	**3**
10 - Financial Planning	**C**	**2**
11 - Capital Expenditure Planning	**C**	**3**
12 - Review of Asset Management Plan	**B**	**2**

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

C = requires significant improvement **D** = inadequate **N/A =** Not Assessed

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

3 = corrective action required **4** = serious action required **N/A =** Not Assessed

SHIRE OF COOLGARDIE

REPORT

ON

2013 ASSET MANAGEMENT REVIEW

FOR

COOLGARDIE SEWERAGE & NON-POTABLE WATER SUPPLY SERVICES

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SHIRE OF COOLGARDIE

REPORT ON THE 2013 ASSET MANAGEMENT

REVIEW

COOLGARDIE SEWERAGE & NON-POTABLE WATER SUPPLY SERVICES

SECTION 1 – ASSET MANAGEMENT REVIEW

1.1 – INTRODUCTION

Under Licence No.13 issued by the Economic Regulation Authority of Western Australia, the Shire of Coolgardie (the Shire) operates and maintains the Sewerage and Non-Potable Water Services for the town of Coolgardie.

Coolgardie was established in 1893 - during the Australian "gold rush" period. At its peak, the population was in the order of 16,000 persons, making the town the third largest in Western Australia. after Perth and Fremantle.

Coolgardie, which now has a fairly stable population of about 1000 persons, is 570 km. east of Perth and 38 km. south-west of Kalgoorlie.

The sewerage system was established in 1984. Further extensions of the system occurred in 1988, 1992 and 1997.

Approximately half of sewage flows by gravity to the waste water treatment plant (WWTP). The other flows by gravity to a pumping station - from which it is pumped to the WWTP. The WWTP is comprised of two parallel trains each with a primary and secondary oxidation pond. Treated effluent is stored in a separate lagoon prior to pumping to two enclosed storage tanks, which supply non-potable water for irrigating the Coolgardie sports oval and the Coolgardie Park respectively.

The annual sewage flow to the WWTP is approximately 73,000 kl. Due to the 2.3 m. excess of evaporation over rainfall in the area, some 40% of the effluent flow is lost through evaporation in the treatment ponds and storage lagoon. Consequently, the volume of non-potable water available for irrigation is in the order of 29,000 kl per annum.

In addition to its water services licence issued by ERA, the Shire holds a Department of Environment and Conservation Licence No. L/994 for the WWTP and a Department of Health Recycled Water Scheme Approval Number C38/00000 - for the Sports Oval and Coolgardie Park irrigation systems

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 Coolgardie's Water Services Operating Licence No.13 for the Coolgardie Sewerage & Non-Potable Water Services, issued by the Economic Regulation Authority of Western Australia (ERA)

Department of Environment and Conservation – Licence No.6587/1994/10 – Coolgardie Wastewater Treatment Plant

Coolgardie Shire Recycled Water Scheme – Assessment Report and Department of Health Conditions of Approval issued by the WA Department of Health**. August 2012**

Shire of Coolgardie Annual Compliance Report to ERA for the period 1st July to 30th June for 2011/2012 and 2012/2013.

Shire of Coolgardie – Annual Report to Department of Environment and Conservation

May 2013

Proposed Budget of income and expenditure (capital works, maintenance, labour etc) for the 2013/14 financial year - by telephone discussion with Manager Administration Services

Shire of Coolgardie – Draft Asset Management Plan, July 2013.

Shire of Coolgardie – Waste Water Services – Standard Operating Procedures Manual

September 2013

Shire of Coolgardie - Operational Audit and Asset Management Review 2012

Shire of Coolgardie

- Maintenance cost record all assets 2013/14
- Customer Complaints and Actions Register 2013/14
- Monthly Water Sample Chemical and Pathological test results April to September 2013

Shire of Coolgardie - Asset Management Information Software

1.4 - REVIEW PERIOD AND DATE OF REVIEW

This Asset Management Review covers the period from 1st November 2012 to 31st October 2013.

The review was undertaken during visits to the Shire's offices at Coolgardie 4th & 5th November 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 Coolgardie

Mr P Denniston – Manager, Development Services

Ms K Dobbie – Technical Administration Officer

Ms R Evans – Manager Administration Services

Mr S Forward – Ranger / Operator, was unavailable due to illness

SECTION 2 – REVIEW OF RECOMMENDATIONS FROM PREVIOUS REVIEW

2.1 – REVIEWER'S COMMENTS ON SHIRE'S RESPONSE

Recommendations from the 2012 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	*The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.*	***The AMP has been revised and extended. However, it appears to be a first stage "cut and paste" of the previous 2006 document. Statements on future demand – which is expected to remain static for several years are included***	***As recommended in previous review***	***Outstanding***
	In particular the document should contain statements of policy and procedures regarding: • *Asset Planning, Creation and Disposal.*	***The AMP is supported by an additional document, "Standard Operating Procedures"(SOP) which sets out the Shire's approach and legal requirements for asset planning, acquisition and disposal.***	***Incorporate in the AMP***	***Mainly resolved***
	• *Operations, Maintenance and performance monitoring of assets and processes*	***Operations, Maintenance and performance monitoring has been significantly improved. However, the level of documentation can be improved***	***Upgrade documentation to reflect improved procedures***	***Mainly Resolved***
	• *A secure Asset Management Information System (including staff training) for recording all legislative, operational, maintenance reports, correspondence etc*	***Comprehensive Asset Management Information System (AMIS) software has been installed on the Shire's computer network. A considerable amount of data entry time is required before the interactive benefits of the system are fully realized Staff training has commenced.***	***Complete the task of data entry to facilitate the benefits of the software***	***Partly Resolved***
	• *Operating Environment, Risk Analysis and Contingency Planning*	***The AMIS contains a detailed and broad based risk analysis. However the operating environment statement in the AMP and the Contingency Planning document in the SOP need to be broadened***	***Update the environmental analysis in accordance with ERA***	***Outstanding***

	A procedure for reviewing the AMP at intervals of not more than 2 years, (or if significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the review	***Both the AMP and the SOP have provision for review and sign-off***	***Guidelines*** ***No Action***	***Resolved***
2 - Asset Creation / Acquisition	*The AMP should include procedures for Asset Creation Acquisition These should encompass* • *A statement of the Government and Shire's procurement / purchasing protocols.* • *Full evaluation of capital, operating and life cycle costs.* • *Comparison of competing asset and non-asset solutions including operating convenience and supplier / support availability.* *The procured / installed assets are supplied with full specifications and operating instructions as appropriate.*	***The relevant requirements and procedures for evaluation and comparison are adequately covered in the SOP***	***No Action***	***Resolved***
3 – Asset Disposal	***No Recommendation***			
4 – Environmental Analysis	*An analysis of the environment in which the water services are operated should be included in the AMP. The analysis should include* • *The Legislative Environment* • *Levels of service and reporting requirements* *Threats and opportunities to the system including bush fire,*	***The AMP's Chapter 2 – "Levels of Service and Demand Management" covers the Legislative Environment reasonably well. However, levels of service required by the Shire's ERA licence, the treatment quality requirements of Department of Environmental Regulation (DER) and Department of Health (DOH) are not provided, nor are the reporting requirements of these authorities.***	***As recommended in previous review***	***Outstanding***

	electrical failure, blockage , toxic materials input, grease and other blockages, flooding and discharge, gaseous discharge (if chlorine gas disinfection adopted).	***Threats and opportunities are not addressed.***	***As recommended in previous review***	***Outstanding***
	• *Protocols for monitoring, sampling testing and reporting sewage and effluent flows and quality, blockages, overflows etc.*	***Protocols for sampling, testing and reporting results are not provided.***	***As recommended in previous review***	***Outstanding***
	In order to be able to comply with the monitoring and reporting requirements the Shire should also: • *Appoint an officer to undertake the day to day inspections, reporting, recording, maintenance, sampling and monitoring of the sewerage and non-potable water system. It would be prudent to send this officer to a Water Plant Operators course conducted by the Water Corporation.*	***An officer has been appointed and has undergone all but one unit of the Water Corporations Sewerage Operators training program in conjunction with the City of Kalgoorlie – Boulder at the latter's sewerage facilities. The final unit is expected to be conducted early in 2014.***	***No action required***	***Resolved***
	Investigate the options and install flow measuring equipment to measure and record flow rates and daily flows to the treatment plant and the effluent disposal systems. It was noted that some of the pumping installations already have flow meters, and / or pressure gauges and / or hours run meters. All installations should have each of the above and should be recorded daily.	***The options are under investigation and equipment is being acquired***	***Complete investigations and installations and implement the monitoring program***	***Mainly Resolved***
5 – Asset Operations	*The Shire should appoint an officer as recommended in Item 4 – Environmental Analysis*	***An officer has been appointed and has undergone all but one unit of the Water Corporations Sewerage Operators training program in conjunction with the City of Kalgoorlie – Boulder at the latter's sewerage facilities. The final unit is expected to be conducted early in 2014.***	***No Action***	***Resolved***
	The Shire should prepare a detailed set of instructions for the operation of the water services and their individual components.	***Preparation of instructions has not been commenced***	***As recommended in previous review***	***Outstanding***

	The instructions should include basic drawings of the system elements supported by instructions in the operation sequence of pumps, switchboards and recording of readings from flow meters, pressure gauges and reporting of faults or malfunctions. *The operating instructions should also include a copy of the relevant safety plan for the system and a reporting procedure in the event of an emergency*	***Preparation of instructions has not been commenced*** ***Preparation of instructions has not been commenced***	***As recommended in previous review*** ***As recommended in previous review***	***Outstanding*** ***Outstanding***
6 Asset Maintenance	*The Shire should appoint an officer as recommended in Item 4 – Environmental Analysis* *The Shire should prepare a detailed set of instructions for the maintenance of the water services and their individual components.* • *The instructions should include basic drawings of the system elements supported by instructions for inspection and maintenance and maintenance frequency* • *The instructions should include pro-forma sheets for reporting faults and for verification that maintenance items have been executed.* • *A list of spares held and contact information for their replacement* • *A forward program for ongoing assessment of the condition and performance of assets.*	***An officer has been appointed and has undergone all but one unit of the Water Corporations Sewerage Operators training program in conjunction with the City of Kalgoorlie – Boulder at the latter's sewerage facilities. The final unit is expected to be conducted early in 2014.*** ***Preparation of instructions has not been commenced. A basic maintenance schedule is included in the AMIS, but should be broadened*** ***Not prepared*** ***The section on Inventory Control in the IMIS deals with spares. However no details of spares have been entered*** ***Not commenced*** ***A formal program of inspection has not been implemented***	***No Action*** ***More detail of inspection /maintenance procedures and frequency*** ***As per previous review*** ***Complete data entry*** ***As recommended in previous review*** ***As recommended in***	***Resolved*** ***Outstanding*** ***Outstanding*** ***Partly Resolved*** ***Outstanding*** ***Outstanding***

	The Shire should: • *Implement an initial program of inspection and evaluation of the condition of manholes and pipework within the sewage collection system. Such a program could be undertaken over period of say 12 months- depending on cost and staff resources* • *From the results, identify any elements that require replacement or maintenance.* • *Prepare a program and estimates for both capital replacement and maintenance.* • *Implement the programs* *Grease blockages are not normally a factor in domestic sewers. Shire should check whether grease producing facilities connected to the sewer have properly maintained grease traps*	***although the AMIS contains a section to address this area.*** ***An informal assessment of some assets has been undertaken to address obvious immediate necessity*** ***Obvious urgent works such as flow measuring and chlorination equipment installation are currently being implemented*** ***The AMIS includes software for both capital replacement and maintenance. The maintenance program requires more detail and cost estimates*** ***Shire's MDS is addressing this problem - but advises action is limited legally.***	***previous review*** ***As recommended in previous review*** ***Complete Maintenance data*** ***Persevere with investigations.***	***Outstanding*** ***Partly Resolved*** ***Outstanding*** ***Outstanding***
7 - Asset Management Information System	*The Shire should install a "stand-alone" basic asset management software system on its computer network and train appropriate staff in its use.*	***The Shire has installed a comprehensive computer based Asset Management Information System software as used at Kalgoorlie.*** ***The software is supported by collation of measurement and quality testing data entered into the Shire's Synergy system*** ***Access is limited by password*** ***A significant amount of asset condition data entry is required to gain the expected benefits of the software. Expected to be completed within 12 months – see Post Review Implementation Plan – Appendix A***	***Undertake data entry***	***Partly Resolved***
8 – Risk	*The Shire should undertake an analysis of the risks identified*	***The AMIS software installed by the Shire contains a comprehensive risk analysis program. This software has been***		

Assessment	*as threats in Item 4 above "Environmental Analysis "* *The analysis should be undertaken in accordance with Australian Standard 4360-2004.Schedule 1Risk Management* *Depending on the risk level, existing factors mitigating the risk should be assessed and additional strategies identified and implemented as appropriate*	***used to assess risks and mitigation strategies across its water services.*** ***Reviewer considers some risk to assets not considered eg, surface aerators at the treatment plant, total power failure, bush fire should also be questioned and assessed***	***Review Risks assessed***	***Mainly Resolved***
9 – Contingency Planning	*The Shire should prepare and document a contingency plan for each emergency situation identified in the Risk Analysis* *. Details should include:* • *Detailed procedures for implementing each contingency plan* • *Names and contact details for Shire and relevant Authorities affected by a given situation, eg Electrical Supply Authority, Fire Brigade, Police ,together with support trades Plumber, Electrician, Pumping /Equipment Hire /Suppliers*	***Contingency planning in Sections 8 and 9 of the Shire's SOP is very general and appears based mainly on treatment of blockages, overflows and odours from the reticulation system. The planning does not include some of the more serious items of the risk analysis or threats of the environmental analysis*** ***Procedures are not sufficiently detailed*** ***The names and contact details of relevant Shire staff, contractors authorities and suppliers affected by such emergencies are not provided***	***As recommended in previous review*** ***Provide more details*** ***Provide information***	***Outstanding*** ***Outstanding*** ***Outstanding***
10 – Financial Planning	*No Recommendation*			
11 – Capital Expenditure Planning	*That the Shire* • *Conduct an Asset condition program as recommended in Item 6 - Asset Maintenance*	***A formal program of inspection has not been implemented although the AMIS contains a section to address this area.*** ***An informal assessment of some assets has been undertaken to address obvious immediate necessity***	***As recommended in previous review***	***Outstanding***

12 – Review of Asset Management Plan	*The recommendations of Item (1) "Asset Planning," apply also to this area and are repeated below.* *The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.* *In particular the document should contain statements of policy and procedures regarding:*	***The AMP has been revised and extended. However, it appears to be a first stage "cut and paste" of the previous 2006 document. Together with the SOP some of the recommendations have been covered at least partially. Further editing input is required as set out in the main report***	***As recommended in previous review***	***Outstanding***
	• *Asset Planning, Creation and Disposal.*	***The AMP is supported by an additional document, "Standard Operating Procedures"(SOP) which sets out the Shire's approach and legal requirements for asset planning, acquisition and disposal.***	***Incorporate in the AMP***	***Mainly resolved***
	• *Operations, Maintenance and performance monitoring of assets and processes*	***Operations, Maintenance and performance monitoring has been significantly improved. However, the level of documentation should be improved***	***Upgrade documentation to reflect improved procedures***	***Mainly Resolved***
	• *A secure Asset Management Information System (including staff training) for recording all legislative, operational, maintenance reports, correspondence etc*	***Comprehensive Asset Management Information System (AMIS) software has been installed on the Shire's computer system. A considerable amount of data entry related to asset condition is required before the interactive benefits of the system are fully realized Staff training has commenced.***	***Complete the task of data entry to facilitate the benefits of the software***	***Partly Resolved***
	• *Operating Environment, Risk Analysis and Contingency Planning*	***The AMIS contains a detailed and broad based risk analysis. However the operating environment statement in the AMP and the Contingency Planning document in the SOP need to be***	***Update the environmental analysis in***	***Outstanding***

	• *A procedure for reviewing the AMP at intervals of not more than 2 years, (or when significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer.*	***broadened. And transferred to the AMP*** ***Both the AMP and the SOP have provision for review and sign-off***	***accordance with ERA Guidelines*** ***No Action***	***Resolved***

SECTION 3 - ASSET MANAGEMENT REVIEW

3.1 - EFFECTIVENESS CRITERIA

The effectiveness ratings assigned to each aspect of the review are set out in the following two Tables - 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	Process policies are documented Process & policies adequately document the required performance of assets Processes and policies are subject to regular reviews and updated where necessary. The asset management information systems(s) are adequate in relation to the assets managed
B	Requires some improvement	Process & policy documentation requires improvement. Processes & policies do not adequately document the required performance of assets. Reviews of process & policies are not conducted regularly enough. The asset management information system(s) require minor improvements (considering the assets being managed)
C	Requires significant improvement	Process & policy documentation is incomplete or requires significant improvement. Processes do not document the required performance of the assets. Processes & policies are significantly out of date. The asset management information system(s) require significant improvements (considering the assets managed)
D	Inadequate	Processes & policies are not documented. The asset management system(s) is not fit for purpose (considering the assets managed)

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.

3.2 – 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	**B**	**2**
2 - Asset creation / acquisition	**A**	**1**
3 - Asset Disposal	**B**	**Not Assessed**
4 - Environmental Analysis	**C**	**3**
5 - Asset Operations	**C**	**2**
6 - Asset Maintenance	**C**	**2**
7 - Asset Management Information System	**B**	**2**
8 - Risk Management	**A**	**2**
9 - Contingency Planning	**C**	**3**
10 - Financial Planning	**C**	**2**
11 - Capital Expenditure Planning	**C**	**3**
12 - Review of Asset Management Plan	**B**	**2**

3.3 – REVIEWER'S GENERAL COMMENTS

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

Table D – 2013 REVIEWER'S COMMENTS ON SHIRE OF COOLGARDIE ASSET MANAGEMENT SYSTEM

Key Processes & General Requirements	Reviewer's Comments and Recommendations	Process & Policy Definition Adequacy Rating	Performance Rating
1 Asset Planning Asset planning strategies should focus on meeting customer needs in an effective and efficient manner. (delivering the right service at the right price)	*The population serviced by the sewerage facilities is in the order of 980 persons and is expected to remain static in the foreseeable future. Consequently, the capacity of the system is currently adequate. New assets are therefore based on replacement of under performing assets. Currently, those required for measuring / monitoring services quantity and quality. are receiving priority. These include the installation / investigation of flow meters, a chlorination system and electrical improvements to the main pumping station* *Item 2.4 of Chapter 2 of the 2013 AMP "Demand Forecast for Wastewater Assets" is identical with the same section of the 2006 version. It includes the same statement as the 2006 version regarding Shire's consideration of the possibility of storing stormwater in disused ponds at the treatment plant – with a view to extending re-use reticulation facilities to further areas of the town. While the population is described as stagnating – requiring no new facilities, the statement should be reviewed and updated.* *The Asset Management Plan (AMP) initially prepared in 2006 as a "developing plan" has been amended and re-produced as a "2013 developing plan" This 2013 version of the AMP remains in Reviewer's opinion, more akin to a promotional document than a working plan and should be substantially edited / rewritten.* *The AMP is supported by an additional document entitled "Standard Operating Procedures" (SOP). The latter document includes material that should be contained in the AMP. These include detailed procedures for:* • *Asset Planning assessment such as asset capacity, performance, capital, maintenance and consumables costs and life* • *Asset Creation including performance requirements and monitoring, estimates and lifecycle cost comparisons, budgeting limitations, Council approvals and the Shire's tendering/ purchasing policies and inclusion of new*	**B**	**2**

	assets in the asset register. • *Asset Disposal, including assessment of refurbishment versus replacement costs, compliance with Local Government Act 1995 requirements and requirements for safe health and environmental disposal* • *The basis of the risk assessment model (included in the Asset Management Information System (AMIS)) software and a basic procedure for dealing with sewage overflows and spillages.* *Reviewer considers that the AMP should be the main document associated with asset management and that the SOP address matters related to administrative , health and safety procedures to be used by the Shire's staff.* *More detailed future long term asset planning software is provided within the "Asset Management Information System" (AMIS) described in Item 7. However, this planning software is yet to be implemented.* ***Recommendation*** ***Most recommendation of the previous 2012 review remain valid, ie,:*** ***The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.*** ***In particular the document should contain statements of policy and procedures regarding:*** • ***Asset Planning, Creation and Disposal. Transfer of appropriate statements in the SOP will suffice.*** • ***Operations, Maintenance and performance monitoring of assets and processes*** • ***Operating Environment, Risk Analysis and Contingency Planning*** ***A procedure for reviewing the AMP at intervals of not more than 2 years, (or if significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer*** ***Comments in the SOP regarding Risk Analysis and Emergency procedures should be re- located in the AMP under the headings Risk Analysis Basis and Contingency Planning respectively***		
2 Asset Creation & Acquisition The provision or improvement of an asset where the outlay can	*Asset Creation and Acquisition is adequately dealt with in the SOP. Reviewer considers the text should be transferred to the AMP as a separate chapter.* ***Recommendation*** ***Text on Asset creation and Acquisition should be transferred from the SOP to the AMP***	**A**	**1**

be expected to provide benefits beyond the year of outlay			
3 Asset Disposal 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	*Asset Disposal requirements of the Local Government Act 1995, together with requirements for assessing refurbishment versus replacement options and requirements for safe disposal are set out in the SOP. As for Asset Creation and Acquisition above, the text in the SOP regarding Asset Disposal should similarly be transferred to the AMP.* ***Recommendation*** ***Text on Asset Disposal should be transferred from the SOP to the AMP***	**B**	**N/R**
4 Environmental Analysis examines the asset system environment and assesses all external factors affecting the asset system	*Chapter 2 of the AMP – "Levels of Service and Demand Management" adequately refers to some, but not all, key service criteria required to be addressed as "Environmental Analysis" in ERA's "Audit , Guidelines – Electricity, Gas and Water Licences" – August 2010. The Legislative Environment and relevant acts are described as are the Regulatory Requirements ie the ERA, DER licences and DOH. Performance criteria for these are stated in an unrelated Table.* *Some of the existing text is considered superfluous eg, 2.6.1 – Key service criteria, 2.6.2 – Service Characteristics, 2.6.3 – Target Levels of Service. Similarly, Table 1 which is an incomplete copy of Table 16 of ERA's "Guidelines" would be more relevant if completed and included as an Appendix* *Basic maintenance and operating procedures have been regularly undertaken following the appointment of the water services operator in May 2013. The resulting improvement and activity associated with system elements is visually obvious. Over the same period, flows have been measured and samples analysed for both the chemical and biological requirements of DER and Health Department. Records of results are recorded and filed. Results to date have been in accordance with the relevant standards. Sampling procedures including chain of custody pro-forma sheets for sample transport are set out in the SOP.* ***Recommendation*** ***Chapter 2 of the AMP should be re-written under the heading " Environmental Analysis and Demand Management"*** ***The chapter should include the following topics:*** • ***Natural and Community Environment (a brief description)***	**C**	**3**

	• ***The Legislative Environment*** • ***Details of ERA, DER and Health Department licences, their key service and quality standards, testing frequency, emergency response and reporting requirements.*** • ***Threats and opportunities in the system environment.*** • ***Existing and future demand and management.*** • ***Performance measurement procedures.***		
5 Asset Operations Operations functions relate to the day to day running of assets and directly affect service levels and costs	*The appointment of the Manager Development Services (MDS) and the subsequent appointment and training of an officer to undertake the day to day operation, maintenance, recording, sampling tasks etc has resulted in a significant improvement in the management and operation of assets and the achievement of the various licence standards of quality and reporting. Reviewer considers that the Coolgardie sewerage and non-potable water services systems are now being operated in a manner that satisfies the standard and quality requirements of its ERA, Department of Environmental Regulation (DER) and Department of Health licences.* *The Shire now has an informal agreement with a local electrical contractor to undertake specialist services associated with maintenance, installation, repair and upgrading of the water services assets. The Shire is currently seeking further quotes from other electrical providers with a view to awarding a formal contract. The Shire has a formal three year contract with a local mechanical services provider to assist in this area.* *While the operation of the various system elements is generally basic, there is a practical and licence requirement for the operation of the system to be covered by detailed operating instructions. These have not been prepared pending urgent works being undertaken in the installation of flow meters, chlorination equipment, pumping station electrical and mechanical works and works at the treatment plant.* ***Recommendation*** ***Most recommendation of the previous 2012 review remain valid, ie,:*** ***The Shire should prepare a detailed set of instructions for the operation of the water services and their individual components.*** ***The instructions should include basic drawings of the system elements supported by instructions in the operation sequence of pumps, switchboards and recording of readings from flow meters, pressure gauges and reporting of faults or malfunctions.*** ***The operating instructions should also include a copy of the relevant safety plan for the system and a reporting***	**C**	**2**

	procedure in the event of an emergency		
6 Asset Maintenance Maintenance functions relate to the up keep of assets and directly affect service levels and costs	*As stated in Item 5 above, the appointment of the Manager Development Services (MDS) and the subsequent appointment and training of an officer to undertake the day to day operation, maintenance, recording, sampling tasks etc has resulted in a significant improvement in the management and operation of assets and the achievement of the various licence standards of quality and reporting. Reviewer considers that the Coolgardie sewerage and non-potable water services systems are now being operated in a manner that satisfies the standard and quality requirements of its ERA, Department of Environmental Regulation (DER) and Department of Health licences.* *The Shire now has an informal agreement with a local electrical company to undertake specialist assistance associated with servicing, installation, repair and upgrading of the water services assets. The Shire is currently seeking further quotes from other electrical providers with a view to awarding a formal contract. The Shire has a formal three year contract with a local mechanical services provider to assist in this area.* *The AMIS includes a basic planned maintenance schedule which requires some further detail and editing of some of the items. The various system elements are fairly basic. However, there is a practical and licence requirement for the maintenance of the system to be covered by detailed maintenance instructions. As stated above for Item 5 – "Asset Operations" these have not been prepared pending urgent works being undertaken in the installation of flow meters, chlorination equipment, pumping station electrical and mechanical works and works at the treatment plant.* ***Recommendation*** ***As per the previous review, that the Shire prepares detailed maintenance instructions for each element of the water services.*** ***The instructions should include;*** • ***basic drawings of the system elements supported by a reviewed schedule of the frequency of inspections, recording and details of maintenance items.*** • ***pro-forma sheets for recording maintenance undertaken, the date etc and notification of faults.*** • ***A list of spares held and contact information for their replacement*** • ***A forward program for ongoing assessment of the condition and performance of assets.*** ***As per the previous, the Shire should also:*** • ***Implement an initial program of inspection and evaluation of the condition of manholes and pipework within the sewage collection system. Such a program could be undertaken over period of say 12 months- depending on cost and***	**C**	**2**

	staff resources • ***From the results, identify any elements that require replacement or maintenance.*** • ***Prepare a program and estimates for both capital replacement and maintenance.*** • ***Implement the programs*** ***Spares that are held should be documented*** ***Grease blockages are not normally a factor in domestic sewers. Shire should check whether grease producing facilities connected to the sewer have properly maintained grease traps***		
7. Asset Management Information Systems (MIS) A combination of processes, data and software that support the asset management functions.	*The Shire has installed an Asset Management Information software package on its computer system. The system includes: An Asset Register, Inventory Control (spare parts list), Condition and Performance, Risk Assessment, Maintenance Details and Schedules and Financial Planning.* *With the exception of risk assessment, most of the software requires further input of data related to the assets before a benefit is realised. Also some review and broadening of topics is necessary.* *The software is supported on the Shire's Synergy system by complaints, blockages odour and action register, water sampling test results, maintenance jobs order forms details, a running record of maintenance expenditure and reports.* *Staff have general access to their own "user" space on the computer system. Access to certain areas of the system are limited to specific individuals eg Financial Records, confidential reports etc. Access to the computer system, which is backed up daily, is by individual password. The premises are locked outside business hours.* ***Recommendation*** ***The Shire should review the inputs and outputs of the AMIS and edit as considered necessary. Also the entry of data should be completed promptly in order to gain the benefits of the software as soon as possible.*** ***Implement staff training for recording and retrieving all legislative, operational, maintenance reports, correspondence etc***	**B**	**2**
8. Risk Management	*A comprehensive risk assessment and management strategy has been undertaken using the risk assessment package of the AMIS software. The assessment philosophy, which is set out in the AMP, includes description and conditions for identifying risks and their quantification including controls, probability of occurrence, consequences, and mitigation strategies in the*		

involves the identification of risks and their management within an acceptable level of risk	*event that existing controls lead to unacceptable risk.* *This is the initial risk assessment for the water services and was prepared by others for the Shire. Some fifty two risks were assessed and appear to exhibit a sound understanding of the water services. However, Reviewer considers a Shire "in-house" review of the risks assessed should be undertaken to ensure that the assessment and mitigation strategies are relevant to the Shire's practice. The risks associated with power failure, bushfire should also be assessed.* ***Recommendation*** ***The existing risk analysis should be reviewed "in-house" and extended if considered appropriate.*** ***The description of the Risk Analysis procedures in the SOP should be transferred to a separate chapter of the AMP***	**A**	**2**
9. Contingency Planning Contingency plans document the steps to deal with the unexpected failure of an asset	*Contingency planning in Sections 8 and 9 of the Shire's SOP is very general and based mainly on issues associated with blockages, overflows and odours from the reticulation system. The planning does not include some of the more serious items of the risk analysis. The names and contact details of relevant Shire staff, contractors, authorities and suppliers affected by such emergencies are not provided* *It is noted that a pumping station fault is indicated only by a flashing light at the pumping station. Action is reliant on a member of the public noticing the light and reporting it to the Council. Many hours could elapse between the fault occurring and reporting. In addition to the light flashing, a signal advice should be transferred to the telephone of the officer on emergency duty.* *The current Customer Charter contains the names and contact details of persons who are no longer employed by the Shire.* ***Recommendation*** ***The Shire should prepare and document a contingency plan for each emergency situation identified in the Risk Analysis*** ***. Details should include:*** • ***Procedures for implementing each contingency plan*** • ***Names and contact details of relevant Shire staff, contractors, authorities and suppliers affected by such emergencies.*** ***Review the range and detail of contingency procedures in Section 8 of the SOP and transfer to the AMP – as a separate Section titled "Contingency Planning". Text related to sampling procedures should be retained in the SOP.***	**C**	**3**

	Arrange for a signal advice of a pumping station fault to be transferred to the telephone of the officer on emergency duty Review and correct the list of staff and contact details listed in the Customer Charter.		
10. Financial Planning 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.	*The Shire's Financial papers (budgets) for 2013 /2014 relevant to the sewerage and non-potable water services were discussed during telephone conversations with the Manager Administrative Services, who was absent during the site visit. Income and expenditure for the sewerage system for the current year and actual cost and budget for the previous year are listed.* *An accompanying note to the budget papers states "The budget has been prepared in accordance with applicable Australian Accounting Standards (as they apply to local government and not-for-profit entities).* *For the current financial year, income will be fully expended. An anticipated deposit to the reserve will match the value of anticipated works funded from the reserve – which currently stands at $500,000* *The replacement costs of assets was assessed to be in the order of$1.66 M in 2005. Whether these were based on escalation of initial costs, or on actual costs in 2005 is not known. There is clearly a need to update the replacement value of the assets and to re-asses the necessary holding in, and ongoing contributions to the reserve fund.* *Assuming all assets were constructed in say, 1984 (ie, 29 years ago) and have an average life of say 50 years, the funds held in reserve should be in the order of 29/50 x $1.664 = $ 965,000 – which is significantly more than the amount actually held. Realistically, the current replacement value will be significantly higher than the figure of $ 1.664 M in 2005.* *The current budget papers have no long term (20 years or more) financial plan indicating the ongoing financial viability of the water services assets. The AMIS contains software for predicting capital expenditure for a forthcoming period of fifty years. This model would form a sound base for formulation of a financial plan.* *It is noted that the AMIS contains a detailed fifty years lifetime cost analysis (LCA). The LCA was completed after the 2013 / 2014 budget was prepared, and is therefore not reflected in the current budget. Future budget estimates, financial plans and contributions to reserve should be formulated on the basis of the LCA.* ***Recommendation*** ***Seek professional advice regarding the replacement value of the assets and re-asses the necessary holding in, and ongoing contributions to the reserve fund.*** ***Future budget estimates, financial plans and contributions to reserve should be formulated on the basis of the life cycle costs of the assets.***	**C**	**2**

11. Capital Expenditure Planning 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.	*The AMIS software includes an elaborate and finely detailed lifetime capital expenditure model (LCE) extending over a period of fifty years. Capital expenditure is based on the expected life of the assets, valuations in 2005, an interest rate of 6.5% and an escalation rate of 3.5%.* *Peak expenditure is indicated as occurring in the years 2034 and 2038 – when the bulk of civil assets reach the end of their theoretical life. Clearly, some or many of the assets will need to be replaced earlier – on the basis of condition or performance requirements. The model provides for this probability – which in practical terms also allows peak capital expenditure to be spread over many years and the expenditure graph to be "smoothed"* *A check of the Australian Bureau of Statistics data indicates that the Australian Consumer Price Index increased by some 24% between June 2005 and June 2013. However, the escalation rate of 3.5% adopted in the Shire's capital expenditure model results in an escalation in the replacement value of the assets of 32% over the same eight years period. Over a period of fifty years, use of fixed interest and escalation rates inn the model could result in a significant discrepancy between predicted and actual expenditure* *Reviewer considers the model will be useful for longer term financial planning with judicious consideration of interest and escalation rates over the longer period. However, it will be more practical for the model to be used over a period of say five to ten years for capital expenditure planning – using current values for interest and escalation rates.* *The Shire should consider obtaining a professional opinion on the current replacement value of its assets as recommended in Item 10 – Financial Planning* ***Recommendation*** ***The Shire should seek a professional engineering advice on the current replacement cost of its assets.*** ***For capital expenditure planning purposes, the Shire should use the capital expenditure model of the AMIS over a rolling forward period of five to ten years, using current rates for interest and escalation.***	**C**	**3**
12. Review of Asset Management System The asset management system is regularly reviewed and up-dated.	*The AMP has been revised and extended. However, it appears to be a first stage "cut and paste" of the previous 2006 document. The AMP is supported by an additional document, "Standard Operating Procedures"(SOP) which sets out the Shire's approach and legal requirements for asset planning, acquisition and disposal. Together with the SOP some of the recommendations have been covered at least partially. Further editing input is required as set out in the main report* *Operations, Maintenance and performance monitoring has been significantly improved. However, the level of documentation can be improved* *Comprehensive Asset Management Information System (AMIS) software has been installed on the Shire's computer network. A considerable amount of data entry time is required before the interactive benefits of the system are fully realised*	**B**	**2**

	Staff training has commenced. *The AMIS contains a detailed and broad based risk analysis. However the operating environment statement in the AMP and the Contingency Planning document in the SOP need to be broadened* *Overall, Reviewer's opinion is that whilst some of the recommendations of the previous review have been implemented in part – and both the AMP and the SOP now have provision for review and sign-off, an effective review has not been undertaken in the short period since appointment of the MDS and operations officer.* ***Recommendation*** ***That the recommendations of the previous review be implemented ie:*** ***The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.*** ***In particular the document should contain statements of policy and procedures regarding:*** • ***A procedure for reviewing the AMP at intervals of not more than 2 years, (or when significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer.*** • ***Independent Asset Management Review***		

SECTION 4 - CONCLUSIONS & RECOMMENDATIONS

4.1 - CONCLUSIONS

The Asset Management Review concluded that the recommendations of the 2012 review of the Shire of Coolgardie's Asset Management System have been only partly implemented. The Shire's failure to fully implement the recommendations of the review has been primarily due to a lack of management and operational staff for the water services during the first two months of the one year period since the 2012 review. The Manager Development Services (MDS) who has responsibility for the water services commenced his employment with the Shire in December 2012. A full time Ranger / Water Services Operator subsequently commenced his duties in May 2013

During the short period since employment of these officers, they have concentrated on identifying, prioritizing and correcting obvious shortcomings in various assets and processes - in order to raise the level of operation and reporting. The intention is to address documentation and remaining recommendations of the 2012 and (subsequently) this 2013 review. Reviewer concurs with this approach.

Input activities during the recent six to ten months include investigation of operational options at the treatment plant, installation of flow meters, monthly sampling, testing and recording of treated water and irrigation waters, investigation of process and optimum location of chlorination equipment, together with electrical and physical works at the pumping station. Meanwhile, staff of the Kalgoorlie Boulder have provided training at the Kalgoorlie treatment plant for the Coolgardie operator and provided Coolgardie with Asset Management Information System (AMIS) software and assistance with drafting a new Asset Management Plan and other documentation.

Local Electrical and Mechanical firms have also been appointed to assist with asset maintenance and installation.

Reviewer considers that the Coolgardie sewerage and non-potable water services systems are now being operated in a manner that satisfies the standard and quality requirements of its ERA, and Department of Environmental Regulation (DER licences. Health Department standards for treated effluent irrigated to the Coolgardie Park and Oval have not been consistently achieved, due to lack of disinfection. The Shire is currently installing chlorination equipment to ensure ongoing compliance

Significant progress has been achieved in the short period since appointment of the MDS. However, much needs to be done to address the outstanding requirements associated with development of system and procedures documentation and asset condition assessment

This review is unfavourable in several areas. The large number of recommendations (set out in the Table D of this report) result mainly from the initial lack of management and operational staff and the short time period since such staff appointments.

4.2 - RECOMMENDATIONS

The Reviewer's comments and recommendations are set out in foregoing Table D. Due to the inter-relationship of the key processes reviewed, many of the recommendations overlap one another. The recommendations for each process are set out in the following:

1 – Asset Planning

Most recommendation of the previous 2012 review remain valid, ie,:

The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.

In particular the document should contain statements of policy and procedures regarding:

- ***Asset Planning, Creation and Disposal. Transfer of appropriate statements in the SOP will suffice.***
- ***Operations, Maintenance and performance monitoring of assets and processes***
- ***Operating Environment, Risk Analysis and Contingency Planning***

A procedure for reviewing the AMP at intervals of not more than 2 years, (or if significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer

Comments in the SOP regarding Risk Analysis and Emergency procedures should be re- located in the AMP under the headings Risk Analysis Basis and Contingency Planning respectively

2 - Asset Creation and Acquisition

Text on Asset creation and Acquisition should be transferred from the SOP to the AMP

3 – Asset Disposal

Text on Asset Disposal should be transferred from the SOP to the AMP

4 – Environmental Analysis

Chapter 2 of the AMP should be re-written under the heading " Environmental Analysis and Demand Management"

The chapter should include the following topics:

- ***Natural and Community Environment (a brief description)***
- ***The Legislative Environment***
- ***Details of ERA, DER and Health Department licences, their key service and quality standards, testing frequency, emergency response and reporting requirements.***
- ***Threats and opportunities in the system environment.***
- ***Existing and future demand and management.***
- ***Performance measurement procedures.***

5 – Asset Operations

Most recommendation of the previous 2012 review remain valid, ie,:

The Shire should prepare a detailed set of instructions for the operation of the water services and their individual components.

The instructions should include basic drawings of the system elements supported by instructions in the operation sequence of pumps, switchboards and recording of readings from flow meters, pressure gauges and reporting of faults or malfunctions.

The operating instructions should also include a copy of the relevant safety plan for the system and a reporting procedure in the event of an emergency

6 – Asset Maintenance

As per the previous review, that the Shire prepares detailed maintenance instructions for each element of the water services.

The instructions should include;

- *basic drawings of the system elements supported by a reviewed schedule of the frequency of inspections, recording and details of maintenance items.*
- *pro-forma sheets for recording maintenance undertaken, the date etc and notification of faults.*
- *A list of spares held and contact information for their replacement*
- *A forward program for ongoing assessment of the condition and performance of assets.*

As per the previous, the Shire should also:

- *Implement an initial program of inspection and evaluation of the condition of manholes and pipework within the sewage collection system. Such a program could be undertaken over period of say 12 months- depending on cost and staff resources*
- *From the results, identify any elements that require replacement or maintenance.*
- *Prepare a program and estimates for both capital replacement and maintenance.*
- *Implement the programs*

Spares that are held should be documented

Grease blockages are not normally a factor in domestic sewers. Shire should check whether grease producing facilities connected to the sewer have properly maintained grease traps

7 – Asset Management Information System

The Shire should review the inputs and outputs of the AMIS and edit as considered necessary. Also the entry of data should be completed promptly in order to gain the benefits of the software as soon as possible.

Implement staff training for recording and retrieving all legislative, operational, maintenance reports, correspondence et

8 – Risk Management

The existing risk analysis should be reviewed "in-house" and extended if considered appropriate.

The description of the Risk Analysis procedures in the SOP should be transferred to a separate chapter of the AMP

9 – Contingency Planning

The Shire should prepare and document a contingency plan for each emergency situation identified in the Risk Analysis

. Details should include:

- *Procedures for implementing each contingency plan*
- *Names and contact details of relevant Shire staff, contractors, authorities and suppliers affected by such emergencies.*

Review the range and detail of contingency procedures in Section 8 of the SOP and transfer to the AMP – as a separate Section titled "Contingency Planning". Text related to sampling procedures should be retained in the SOP.

Arrange for a signal advice of a pumping station fault to be transferred to the telephone of the officer on emergency duty Review and correct the list of staff and contact details listed in the Customer Charter.

10 - Financial Planning

Seek professional advice regarding the replacement value of the assets and re-asses the necessary holding in, and ongoing contributions to the reserve fund.

Future budget estimates, financial plans and contributions to reserve should be formulated on the basis of the life cycle costs of the assets.

11 – Capital Expenditure Planning

The Shire should seek a professional engineering advice on the current replacement cost of its assets.

For capital expenditure planning purposes, the Shire should use the capital expenditure model of the AMIS over a rolling forward period of five to ten years, using current rates for interest and escalation.

12 – Review of AMS

That the recommendations of the previous review be implemented ie:

The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.

In particular the document should contain statements of policy and procedures regarding:

- ***A procedure for reviewing the AMP at intervals of not more than 2 years, (or when significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer.***
- ***Independent Asset Management Review***

4.3 – REVIEWER'S PROFESSIONAL TIME INPUT

Barry Robbins spent 50 hours preparing for, and conducting this review and preparing the report document

4.4 – POST REVIEW IMPLEMENTATION PLAN

The Post Review Implementation Plan prepared by the Shire is attached as Appendix A

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APPENDIX A

POST REVIEW IMPLEMENTATION PLAN

REVIEW ITEM	RECOMMENDATION	POST REVIEW IMPLEMENTATION PLAN	SHIRE OFFICER RESPONSIBLE / DATE OF IMPLEMENTATION
1 – Asset Planning	***Most recommendation of the previous 2012 review remain valid, ie,:*** ***The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.*** ***In particular the document should contain statements of policy and procedures regarding:*** • ***Asset Planning, Creation and Disposal. Transfer of appropriate statements in the SOP will suffice.*** • ***Operations, Maintenance and performance monitoring of assets and processes*** • ***Operating Environment, Risk Analysis and Contingency Planning*** ***A procedure for reviewing the AMP at intervals of not more than 2 years, (or if significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer*** ***Comments in the SOP regarding Risk Analysis and Emergency procedures should be re- located in the AMP under the headings Risk Analysis Basis and Contingency Planning respectively***	Consultant to address this Consultant to address this Consultant to address this Consultant to address this Consultant to address this	Manager Development Services

2 – Asset Creation & Acquisition	***Text on Asset creation and Acquisition should be transferred from the SOP to the AMP***	Consultant to address this	
3 - Asset Disposal	***Text on Asset Disposal should be transferred from the SOP to the AMP***	Consultant to address this	Manager Development Services
4 – Environmental Analysis	***Chapter 2 of the AMP should be re-written under the heading " Environmental Analysis and Demand Management"*** ***The chapter should include the following topics:*** • ***Natural and Community Environment (a brief description)*** • ***The Legislative Environment*** • ***Details of ERA, DER and Health Department licences, their key service and quality standards, testing frequency, emergency response and reporting requirements.*** • ***Threats and opportunities in the system environment.*** • ***Existing and future demand and management.*** • ***Performance measurement procedures.*** •	Consultant to address this Consultant to address this	Manager Development Services
5 – Asset Operations	***Most recommendation of the previous 2012 review remain valid, ie,:*** ***The Shire should prepare a detailed set of instructions for the operation of the water services and their individual components.*** ***The instructions should include basic drawings of the system elements supported by instructions in the operation sequence of pumps, switchboards and recording of***	Consultant to address this Consultant to address this Consultant to address this	Manager Development Services

	readings from flow meters, pressure gauges and reporting of faults or malfunctions. ***The operating instructions should also include a copy of the relevant safety plan for the system and a reporting procedure in the event of an emergency***	Consultant to address this	
6 – Asset Maintenance	***As per the previous review, that the Shire prepares detailed maintenance instructions for each element of the water services.*** ***The instructions should include;*** • ***basic drawings of the system elements supported by a reviewed schedule of the frequency of inspections, recording and details of maintenance items.*** • ***pro-forma sheets for recording maintenance undertaken, the date etc and notification of faults.*** • ***A list of spares held and contact information for their replacement*** • ***A forward program for ongoing assessment of the condition and performance of assets.*** ***As per the previous, the Shire should also:*** • ***Implement an initial program of inspection and evaluation of the condition of manholes and pipework within the sewage collection system. Such a program could be undertaken over period of say 12 months- depending on cost and staff resources*** • ***From the results, identify any elements that require replacement or maintenance.*** • ***Prepare a program and estimates for both capital replacement and maintenance.*** • ***Implement the programs*** ***Spares that are held should be documented*** ***Grease blockages are not normally a factor in domestic sewers. Shire should check whether grease producing facilities connected to the sewer have properly maintained***	Already started but consultant to streamline Consultant to address this Consultant to address this Already started but consultant to streamline Already selectively started but the whole program will take a number of years for both financial reasons and the relatively good state of many lines. Consultant to address this Consultant to address this Consultant to address this Partially done Already done	Manager Development Services

	grease traps		
7- Asset Management Information System	***The Shire should review the inputs and outputs of the AMIS and edit as considered necessary. Also the entry of data should be completed promptly in order to gain the benefits of the software as soon as possible.*** ***Implement staff training for recording and retrieving all legislative, operational, maintenance reports, correspondence et***	Already started but consultant to streamline Already started but consultant to streamline	Manager Development Services
8 – Risk Management	***The existing risk analysis should be reviewed "in-house" and extended if considered appropriate.*** ***The description of the Risk Analysis procedures in the SOP should be transferred to a separate chapter of the AMP***	Already started but consultant to streamline Already started but consultant to streamline	Manager Development Services
9 – Contingency Planning	***The Shire should prepare and document a contingency plan for each emergency situation identified in the Risk Analysis*** ***. Details should include:*** • ***Procedures for implementing each contingency plan*** • ***Names and contact details of relevant Shire staff, contractors, authorities and suppliers affected by such emergencies.*** ***Review the range and detail of contingency procedures in Section 8 of the SOP and transfer to the AMP – as a separate Section titled "Contingency Planning". Text related to sampling procedures should be retained in the SOP.*** ***Arrange for a signal advice of a pumping station fault to be transferred to the telephone of the officer on emergency duty Review and correct the list of staff and contact details listed in the Customer Charter.***	Already started but consultant to streamline Already started but consultant to streamline Already started but consultant to streamline Already started but consultant to streamline Already done.	Manager Development Services

10 – Financial Planning	***Seek professional advice regarding the replacement value of the assets and re-asses the necessary holding in, and ongoing contributions to the reserve fund.*** ***Future budget estimates, financial plans and contributions to reserve should be formulated on the basis of the life cycle costs of the assets.***	Already started but consultant to streamline Already started but consultant to streamline	Manager Development Services
11 – Capital Expenditure Planning	***The Shire should seek a professional engineering advice on the current replacement cost of its assets.*** ***For capital expenditure planning purposes, the Shire should use the capital expenditure model of the AMIS over a rolling forward period of five to ten years, using current rates for interest and escalation.***	Already started but consultant to streamline Already started but consultant to streamline	Manager Development Services
12 – Review of Asset Management System	***That the recommendations of the previous review be implemented ie:*** ***The AMP should be reviewed, substantially broadened in scope and re-written to reflect the legislative requirements of the water services licence and the basis of operating, maintaining and monitoring the performance of the water services.*** ***In particular the document should contain statements of policy and procedures regarding:*** • ***A procedure for reviewing the AMP at intervals of not more than 2 years, (or when significant changes are made to assets), together with a front cover or similar recording of the review date, amendments made and sign off by the reviewer.*** • ***Independent Asset Management Review***	Already started but consultant to streamline Already started but consultant to streamline Already started but consultant to streamline	Manager Development Services