



Bridge to Opportunity

The Rural
MURRAY
BRIDGE



Water Supply and Waste Water Asset Management Plan

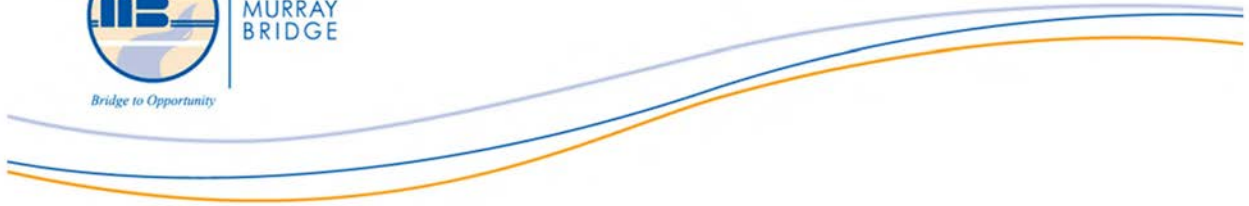
2017 - 2021

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Date: February 2017



The Rural City of
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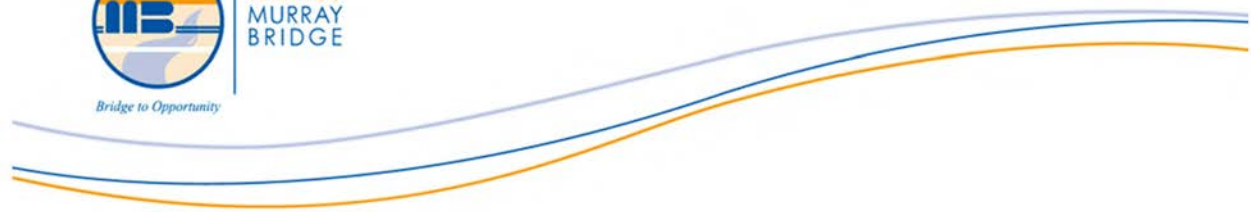
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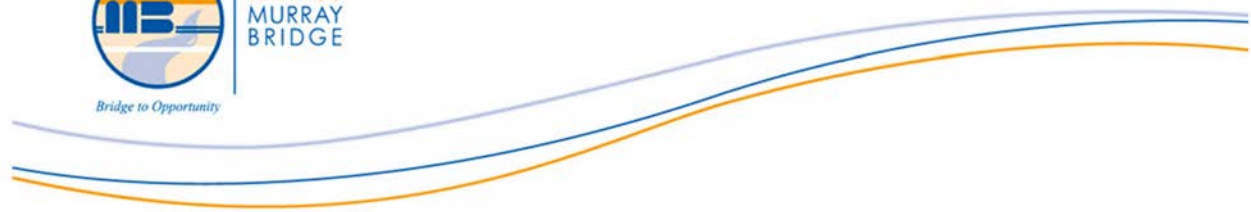
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1. EXECUTIVE SUMMARY

The Rural City of Murray Bridge's vision is to be connected with and working towards the aims and aspirations of its community.

In order to achieve this Council must service and maintain its current asset inventory

"FOR EVER"

At a cost the community can afford.

The Water Supply and Waste Water Asset Management Plan provides a strategic road map and framework for the successful achievement of this vision.

1.1. What Council Provides

The Rural City of Murray Bridge (RCMB) delivers a variety of services to the community and in doing so, must ensure that the assets supporting these services are managed in a way that guarantees maximum performance for the lowest 'whole of life' cost.

The RCMB Water Supply and Waste Water assets represent an investment that supports modern living in the community. Hundreds of thousands of dollars are spent annually managing and maintaining the City's Water Supply and Waste Water and it is imperative that the City employs the most appropriate management skills and practices to ensure that related services are delivered economically and sustainably.

RCMB has demonstrated a strong commitment to asset management. This is shown through the strategies contained in the Strategic Plan and the adoption of Asset Management and Asset Accounting Policies in 2013. These policies present the RCMB Asset Management key principles which are:

- Undertake a whole of organisation approach to asset management
- Provide sustainable Water Supply and Waste Water assets
- Engage the community to ensure the most appropriate Water Supply and Waste Water assets are provided to an agreed level of service that they can afford
- Adequately fund the renewal of identified Water Supply and Waste Water assets
- Understand and minimise whole of life costs for Water Supply and Waste Water assets through long term planning
- Continually improve our knowledge of the assets we manage

- Minimise risk through a co-ordinated approach to asset management

Included in this plan are the assets associated with RCMB's two Community Waste Water Management Systems (CWMS) located at Riverglen and Woodlane:

- Pipes – Water Supply and Sewer
- Pumps
- Water Filtration Plant
- Sub Water Meters
- Communications Modules
- Tanks
- Valves, Pits and Inspection Points
- Treatment Facilities

Included in separate Asset Management Plans are:

- Civil & Transport Infrastructure
- Buildings
- Stormwater
- Recreational Facilities

1.2. What does it Cost?

There are 2 key indicators used to determine the cost to provide the services delivered by Council assets:

- The life cycle cost, being the average cost over the life cycle of an asset
- The total maintenance and capital renewal expenditure required to deliver existing service levels in the next 10 years covered by Council's Long Term Financial Plan

1.3. Plans for the Future

RCMB plans to operate and maintain the Water Supply and Waste Water assets as above to achieve the following strategic objectives:

- Ensure that its infrastructure is maintained at a safe and functional standard as set out in this asset management plan
- Ensure that its infrastructure is renewed or replaced as appropriate in order to achieve best asset productivity
- Ensure that Council achieves acceptable service delivery and financial sustainability

1.4. Measuring our Performance

1.4.1 Quality

RCMB's Water Supply and Waste Water assets will be maintained in a 'reasonably' usable condition. Defects found or reported that are outside our service standard will be prioritised based on risk and repaired.

RCMB will aim to maintain a baseline Overall Condition Index (OCI) of 2 for its Water Supply and Waste Water assets at all times. Details of the current OCI are given in Section 6.

1.4.2 Function

RCMB's intent is that our Water Supply and Waste Water assets are maintained in partnership with neighbouring local government authorities, other levels of government and stakeholders to ensure a safe and functional network for the general public.

We need to ensure key functional objectives are met:

- To provide Water Supply and Waste Water assets to agreed targets of safety and function.
- To provide and maintain Water Supply and Waste Water services to community requirements within the resources available
- To manage Water Supply and Waste Water assets to statutory requirements and community needs

1.4.3 Safety

RCMB will inspect all Water Supply and Waste Water assets regularly and prioritise and repair defects in accordance with our inspection schedule using conventional risk management practices (likelihood versus consequence) to ensure they are safe.

1.5. The Next Steps

The actions resulting from this Asset Management Plan are:

- Condition assessments for all Water Supply and Waste Water assets will be conducted on a regular basis (3-5 years). The development of Condition Assessment Manuals and a rolling 3-5 program for assessments are included as Improvement Actions in this Plan.
- Revaluation of non-current assets (12 months)
- Move towards proactive works with less reactive maintenance
- Align whole of life costs with depreciation (funding a level of service)
- Develop a 10 year works program
- Lifecycle management cost calculations at capital project conception
- Risk Management Plan

2. INTRODUCTION

2.1. Background

2.1.1. The Rural City of Murray Bridge

The Rural City of Murray Bridge is a thriving region located on the banks of the Murray River well placed in terms of its geographic location and just a short drive from Adelaide. Being on the national road network with road and rail access to the eastern states and Adelaide, its proximity to metropolitan Adelaide, connection to the South Eastern Freeway, land affordability, investment opportunities and river connection make the Rural City of Murray Bridge an appealing place to live, work and visit.

As a major agricultural district, the Council area supports irrigated horticulture and dairying along the river as well as cropping and intensive animal keeping throughout the rural areas. Primary and secondary industries are clustered around Murray Bridge and Monarto with the area offering significant opportunity for expansion outside of metropolitan Adelaide.

Murray Bridge is a bustling vibrant regional centre, offering a wide range of facilities and services to the local and regional community including residents of the Murraylands, Adelaide Hills and Fleurieu Peninsula.

The Rural Communities of Callington, Jervois, Wellington, Monarto, Mypolonga, Woodlane, Riverglen, White Sands, Monteith and Woods Point have a unique identity, maintaining their rural character whilst providing diverse housing options and community support services.

The Council area has a rich heritage; situated on the traditional lands of the Ngarrindjeri people and the location of the first bridge to cross the Murray River that was completed in 1879.

Monarto Zoo is a major tourist attraction and along with water based activities and house boating on the Murray River there are many key attractions for locals and visitors to the area.

A map of the Rural City of Murray Bridge is shown in Figure 1.



Figure 1: Rural City of Murray Bridge Map

2.1.2. Purpose of Asset Management Plans

Asset Management Plans are a means for documenting management, financial, engineering and technical practices to ensure that the level of service required by the community for a class of infrastructure assets is provided at the lowest long term cost.

The identification of future needs, management options and cash flows provides the ability to even out peak funding demands. In this way, Asset Management Plans assist the Council and Executive in making informed decisions in relation to the allocation of resources and to communicate this information to the public.

2.1.3. Scope of this Asset Management Plan

This Water Supply and Waste Water Asset Management Plan provides the framework to deliver optimum operation performance of the Council's Water Supply and Waste Water assets at the lowest lifecycle cost and to agreed levels of service. For the purposes of this plan, Water Supply and Waste Water assets are:

- Pipes and Rising Mains – Water Supply and Sewer
- Pumps

- Filtration Plant
- Sub Water Meters
- Communications Modules
- Tanks
- Valves, Pits and Inspection Points
- Treatment Facilities

Assets on Council's land such as Buildings, Stormwater, Footpaths, Signs and Recreational Facility assets are excluded from this Plan as they are covered in separate Asset Management Plans.

The break-up of the Water Supply and Waste Water assets that Council is responsible for is shown in Table 1.

At 1 July 2016 the total Replacement Value of Council's Water Supply and Waste Water assets was estimated to be **\$1,475,651.41**.

Asset Category	Quantity	Replacement Value (\$)
Water Mains	4789m	362,133.86
Water Nodes (Tanks, Valve)	7	152,216.90
Water Plant and Equipment	200	59,642.33
Water Treatment Facilities	1	11,490.69
Sewer Mains	6165m	539,209.98
Sewer Nodes (Tanks, Valves etc.)	15	68,660.47
Sewer Plant and Equipment	20	265,634.80
Sewer Treatment Facilities	1	16,662.38
TOTAL		\$1,475,651.41

Table 1: Replacement Values of Council Assets

2.2. Linkages to the RCMB Strategic Plan

The Rural City of Murray Bridge is required by the Local Government Act 1999 to apply a strategic planning approach to all activities. The Strategic Plan is a high level document connected to a number of other plans which contain more detailed actions. Achievement of our goals depends on us working collaboratively with our strategic partners and the community. Table 2 details the Water Supply and Waste Water Asset Management Plan links to Council's Strategic Goals, Objective and Strategies.

The Asset Management Plan provides guidance to Council's Financial Strategy and to the Council Annual Business Plan. From this, the Capital Works Program for infrastructure maintenance and renewals is developed. Figure 2 details how Asset Management Plans fit within Council's strategic framework.



Objectives	Strategies	Indicators
GOAL 1: Economic		
To build on the strengths of the region and create competitive advantages and grow jobs.		
1.2 - Improve regional and local infrastructure	1.2.1 - Partner with Regional Development Australia (Murraylands and Riverland) to: <ul style="list-style-type: none"> Advocate and plan for the timely provision of enhanced land, rail and air transport infrastructure. Engage in cross regional partnership to ensure the Murraylands is well positioned to be an exemplar for fresh food production and processing 	<ul style="list-style-type: none"> Number of Developments Approvals in industrial zone Number of Development Approvals – major developments New Infrastructure projects – number/type/cost
GOAL 2: Environmental		
To develop, protect and strengthen our natural and built environments		
2.2 – Improve the quality and diversity of the built environment and public realm	2.2.3 – Plan for, manage and facilitate transport and traffic management initiatives within urban and rural areas 2.2.6 – Maintain Council's assets and infrastructure through the implementation of Council's Asset Management Plans	<ul style="list-style-type: none"> Maintaining a level of service the community can afford
2.3 – Facilitate sustainable opportunities for wastewater use and reuse	2.3.1 – Facilitate water independence through development of integrated Water Management plans including identifying, addressing and implementing water harvesting/balancing re-use and recycling opportunities. 2.3.2 – Promote opportunities for innovative water sensitive design principles in all developments 2.3.3 – Investigate and implement innovative water sensitive management practices through key partnerships	<ul style="list-style-type: none"> Reduction in Stormwater into the river Amount (kilolitres) of mains water used to irrigate public open space
GOAL 3: Social		
A healthy, safe and connected community that celebrates diversity, heritage and culture		
3.1 – Provide appropriate open space for the community and visitors	3.1.2 – Continue to develop and maintain parks, gardens, reserves and other open spaces in an economic and environmentally sustainable manner	<ul style="list-style-type: none"> Open Space strategy to be completed % of land devoted to open space that is accessible to the public
3.2 – Ensure leisure, recreation and sporting activities and facilities are available for the community and visitors	3.2.3 – Develop and maintain recreational trails	<ul style="list-style-type: none"> Recreation and Sports Plan to be completed Length of recreation trails planned designed and developed.
GOAL 4: Organisation		
A progressive, responsive and innovative organisation that supports its customers whilst maintaining a high standard of governance and accountability		
4.4 – Develop a	4.4.1 – Improve and monitor organisational	<ul style="list-style-type: none"> Number of service reviews completed



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Objectives	Strategies	Indicators
sustainable organisation	performance and quality of service delivery 4.4.4 – Develop and implement a financial sustainability framework 4.4.5 – Implement national frameworks to report on asset planning and management	<ul style="list-style-type: none">• Procurement road map completed• Financial sustainability framework completed• Asset management plans completed• Communication strategy completed

Table 2: Council Goals and How They are Addressed in this Plan



Figure 2: Linkages to Key Strategic Documents and Strategies

2.3. Key Stakeholders

In developing any Asset Management Plan it is important to understand the role of the key stakeholders that have an interest in the management of the assets class.

Table 3 details the key groups that have an interest or involvement in the management and use of the Water Supply and Waste Water network and related assets.

Stakeholder Group	Asset Management Functions
Elected Members	<p>Endorsement of the asset management policy, strategy and plans.</p> <p>Setting high level direction through the development of asset management principles in the Community Strategic Plan.</p>
Executive Management	<p>Endorse the development of asset management plans and provide the resources required to complete this task.</p> <p>Set high level priorities for asset management development in Council and raise the awareness of this function among Council staff and contractors.</p> <p>Support the implementation of actions resulting from this plan and prepare to make changes to a better way of managing assets and delivering services.</p> <p>Support for an asset management driven budget and Long Term Financial Plan</p>
Corporate Services and Infrastructure & Assets Staff	<p>Managing the Asset Register and ensuring the asset valuations are accurate.</p> <p>Development of supporting policies such as capitalisation and depreciation.</p> <p>Preparation of asset sustainability and financial reports incorporating asset depreciation in compliance with current Australian Accounting Standards.</p>
Operations Staff	<p>Providing local knowledge and detail on all infrastructure assets.</p> <p>Performing repairs and maintenance on assets.</p> <p>Undertaking selected capital works projects.</p>
Assetic Pty Ltd	<p>Providing support for the development of asset management plans and effective asset management principles within Council.</p> <p>Independently endorsing asset revaluation methodology.</p>
External Parties	<p>Community residents & businesses</p> <p>Tourists and Visitors (as occasional users)</p> <p>Neighbouring Councils</p> <p>Road Users</p> <p>Emergency services</p> <p>Developers & Utility companies</p> <p>Local Businesses</p> <p>Federal and State Government authorities.</p>

Table 3: Key Stakeholders in Council's Assets

2.4. Asset Management Maturity

A detailed analysis of Council "Asset Management Health" has been undertaken in order to determine where gaps in current information, processes and policies lie. In developing the Water Supply and Waste Water Asset Management Plan some of these gaps will be filled and others will be earmarked for rectification in an ongoing Improvement Plan.

As Council continues to develop its strategic asset management processes and practices, key improvements in the past two years include:

- Asset Register 95% accurate for all Water Supply and Waste Water.
- Asset Management Plans 90% complete.
- Asset Management Working Group (AMWG) established and operational.
- Revaluation of all Road, Footpath, Kerb, Bridge, Car Park, Sign and Stormwater assets.

2.5. Asset Management Plan Framework Applicable to this Plan

In March 2007 the Local Government and Planning Ministers' Council (LGPMC) agreed to a nationally consistent approach to asset planning and management, financial planning and reporting and assessing financial sustainability. Each State Minister endorsed the National Framework for Financial Sustainability in Local Government for implementation in the context of their relationships with their local government sectors.

The National Frameworks consist of three main components as follows:

- Asset Planning and Management which incorporates:
 - Asset Management Policy
 - Asset Management Strategy
 - Governance and Management
 - Levels of Service
 - Data and Systems
 - Continuous Improvement Program
 - Evaluation of effectiveness
- Financial Planning and Reporting which incorporates:
 - Long-term Strategic Plan
 - Annual budget
 - Annual Financial Statements and Annual Report
- Criteria for Assessing Financial Sustainability:
 - A council's long-term financial performance and position is defined as sustainable when "planned long term services and infrastructure standards are met without unplanned increases in rates and charges, or disruptive cuts to services"

2.5.1. Plan Framework

The key elements of this plan are:

- Levels of service – specifies the types and levels of service the council provides.
- Future demand – how this will impact on future service delivery and how this is to be met.
- Life cycle management – how Council will manage its existing and future assets to provide the required services.
- Financial summary – what funds are required to provide the required services that meet both Technical standards and Community expectations
- Asset management practices.
- Monitoring – how the plan will be monitored to ensure it is meeting Council's objectives.
- Asset Management Improvement Plan.

The structure of an Asset Management Plan is shown in Figure 3. It also shows the process flow in developing a Plan.

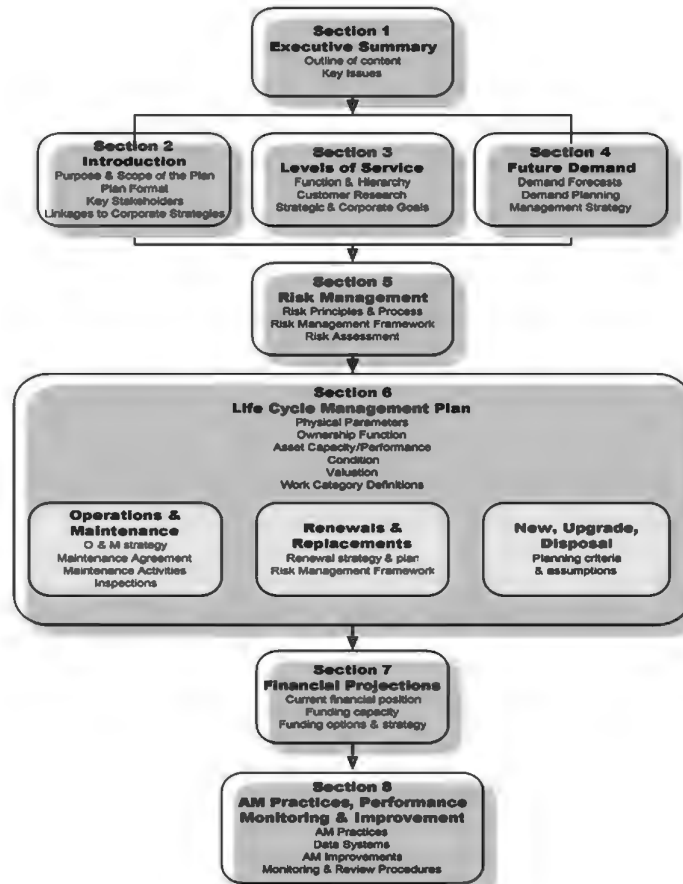


Figure 3: Structure of an Asset Management Plan (Source: IIMM¹ Fig 1.5.1, p 1.11)

¹ International Infrastructure Management Manual

2.5.2. Core and Advanced Asset Management

This Asset Management Plan is prepared as a 'Core' or basic asset management plan in accordance with the International Infrastructure Management Manual. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting.

Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level. Future revisions of this asset management plan will move towards 'Advanced' asset management using a 'bottom up' approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels.

3. ASSET FUNCTION AND LEVELS OF SERVICE

Levels of Service relate to outcomes the customer receives in terms of quality, quantity, responsiveness and performance as provided by the asset.

To achieve and sustain acceptable standards of service, Council's Water Supply and Waste Water assets require an annual commitment of funds. These funds provide for regular and responsive maintenance and for timely renewal or replacement of the assets. The provision of adequate financial resources ensures that the assets are appropriately managed and preserved.

Maintenance and renewal funding below the levels required impacts directly on community development and if prolonged, results in substantial needs for "catch up" expenditure imposed on ratepayers in the future. Additionally, deferred renewal results in increased and escalating reactive maintenance as aged assets deteriorate at increasing rates.

In developing the levels of service, Council has given due regard to the strategic goals and objectives set out in the Council's Strategic Plan. Additionally, due regard has been given to legislative requirements, Australian Standards and stakeholder expectations.

The levels of service documented in this Plan therefore reflect the best assumptions of current levels of service provided by Council, for the benefit of the community, in the context of Council's financial and human resources.

3.1. Asset Hierarchy

Applying an Asset Hierarchy assists in the prioritisation of funding, maintenance scheduling, response times and intervention levels for repairing minor defects and attending to other issues with the Water Supply and Waste Water network.

The production of an hierarchy for Council's Water Supply and Waste Water assets has been included as one of the Improvement Actions to be carried out under this Plan.

3.1.1. Community Expectations and Consultation

The Rural City of Murray Bridge will initially carry out extensive consultation sessions with Elected Members on its entire Water Supply and Waste Water asset inventory in order to set levels of service that meet the community's expectation. The first step towards this is to investigate the most effective option for researching and measuring the community expectations. Once the methodology has been determined, a timetable for the consultation process can be established.

These actions have been included as Improvement Actions to be carried out under this Plan.

The level of community expectation and aspirations, and the process of managing these is an integral part of the ongoing maintenance of the Water Supply and Waste Water Asset Management Plan.

In implementing this Plan, it is the goal of Council to achieve a state of equilibrium where by the level of service desired by the community is met, but at a level they can afford.

3.2. Legislative Requirements

The Rural City of Murray Bridge must meet many legislative requirements including Australian and State legislation and State regulations. These key requirements are set out in Table 4.

Legislation	Requirement
Local Government Act, 1999	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Australian Accounting Standards	Prescribes requirements for recognition and depreciation of property, plant and equipment assets.
Environment Protection Act, 1993 Environment Protection Regulations, 2009	Places a 'duty of care' on Council to not undertake activities that will cause environmental harm.
Work Health and Safety Act, 2012 Work Health and Safety Regulation, 2012 Australian Drinking Water Guidelines	The responsibility of the Council to provide safe work practices and work site.

Table 4: Key Legislative Requirements

In addition, RCMB complies with the following legislation, codes, standards, criteria and guidelines specific to Water Supply and Waste Water schemes.

- Water Industry Act 2012 and Regulations 2012
- Work Health and Safety Act 2012 and Regulations 2012
- Workers Rehabilitation and Compensation Act 1986
- South Australian Public Health Act 2011 and Regulations (Waste water) 2013
- Water Resources Act 1997
- Natural Resources Management Act 2004 and associated Regulations
- Local Government Act 1999
- Environment Protection Act 1993
- Environment Protection (Water Quality) Policy 2003
- Dangerous Substances Act 1979 and associated Regulations 2008
- Livestock Act 1997 (specifically Section 3.6)
- Guidelines, Design Criteria and Standards for Community Waste water Management Schemes (LGA)
- Community Wastewater Management System Codes 2013 (DHA)
- Sewerage Code of Australia (WSA 02) and any SA Water supplementary documentation
- Water Supply Code of Australia (WSA 03)
- Dual Water Supply Systems First Edition Version 1.2. A Supplement (WSA 03- 2002)

- Sewage Pumping Station Code of Australia (WSA 04)
- Vacuum Sewerage Code of Australia (WSA 06)
- Pressure Sewerage Code of Australia (WSA 07)
- AS/NZS 3500: Plumbing and drainage
- AS/NZS 4020: Testing of products for use in contact with drinking water
- AS/NZS 5667: Water quality - Sampling - Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
- AS/NZS 2031: Water quality - Sampling for microbiological analysis (ISO 19458:2006, MOD)
- AS/NZS ISO 3100: Risk management - Principles and Guidelines
- The National Construction Code (NCC) Volume 3 Plumbing Code of Australia (PCA)
- Standard Form: Technical Specification-Construction of Septic Tank Effluent Drainage Schemes (DH, LGA)
- Septic Tank Effluent Drainage Scheme Design Criteria (DH, LGA)
- South Australian Biosolids Guidelines for the Safe Handling, Reuse or Disposal of Biosolids (EPA)
- South Australian Recycled Water Guidelines (DHA)
- Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase 1) (NRMMC, EPHC)

3.3. Current Levels of Service

3.3.1. Level of Service Description

The 'level of service' is the defined service quality for a particular activity or service area against which service performance can be measured. They provide the basis for the life cycle management strategies and works programme identified within the Asset Management Plan.

Levels of service support the Organisation's strategic goals and are based on customer expectations and statutory requirements.

Levels of service can be broken down into three basic aspects:

- Function – its purpose for the community.
- Design Parameters – what is required of the asset?
- Performance & Presentation - the effectiveness of the asset and the service it provides.

3.4. Technical Levels of Service

The Community based Service Levels provide high level targets for asset portfolio performance. Detailed Technical Levels of Service are required to assess performance on a day-to-day basis to guide decision making and work flows. The prime objective in setting the Technical Levels of Service is to set targets that will lead to achieving the desired Community based Service Levels.

Technical Levels of Service can be assessed based on 3 specific measures:

- Network Condition Assessment

- Defect Assessment
- Hazard Assessment

3.4.1. Network Condition Assessment

The Network Condition Assessment is an overall measure of a network's health and is used as a tool to develop long term works programmes and assists in financial modelling.

In order to measure the health of RCMB's Water Supply and Waste Water assets and develop an overall condition index (OCI) a detailed assessment of each component is undertaken periodically. Each component is given a rating out of 5 which is fed into Council's corporate asset management software package to determine the OCI.

As part of the ongoing improvement plan, Council will develop a Water Supply and Waste Water Condition Assessment Manual detailing the following:

- Criteria and Components to be assessed
- Measurement Criteria (what to measure and how to measure it)
- Minimum service levels linked to asset hierarchy

Asset condition assessments to determine OCI and revaluations (to determine "fair Value") are to be undertaken every 3 years and need to be funded as part of the asset management process.

3.4.2. Asset Defect Inspections

Defect inspections are a medium term assessment of the network and are considered "Responsive Works". They are undertaken on an agreed frequency linked to the park hierarchy and legislative requirements. For example, playgrounds are inspected monthly in addition to an annual condition audit.

Defects found on these inspections are risk assessed and programed for rectification.

3.4.3. Asset Hazard Inspections

Hazard Inspections are reactive; they are a short term assessment of an asset's condition based on reports made by the public or Council. Hazard Inspections are undertaken on an as needs basis where a risk assessment will be undertaken to determine the need and time for rectification.

3.5. Community Levels of Service

Community Levels of Service communicate the philosophies of Council in relation to the management of the asset classes including the rehabilitation and renewal of these assets as they deteriorate due to age and use.

An Asset Management Working Group (AMWG) has been formed in order to provide Council wide input into the development of asset management performance standards and procedures. An early task for AMWG is to review these levels of service. Following a review by the AMWG, it is intended to have the Community-based Service Levels adopted by Council.

The community based levels of service must be directly linked to Council's technical levels of service.

3.6. Desired Levels of Service

In general most Councils have historically set the level of service targets using past customer requests and complaints as the prime reference. This has not always resulted in targets that were both achievable and affordable.

The development of desired levels of service targets through appropriate consultation will result in aspirational goals that are deliverable and affordable.

Levels of Service need to be developed considering the following criteria in order of priority:

- Legislative requirements
- Technical Standards (Australian Standards)
- Economic feasibility
- Community requirements

Target groups for the consultative process are:

- Councillors
- Council staff
- RCMB community
- Industry representatives operating within the council

The development and ongoing review of Desired Levels of Service has been included as an Improvement Action to be carried out under this Plan.

4. FUTURE DEMAND

4.1. Demand Forecast

Factors affecting demand include major development, population change, changes in demographics, seasonal factors, consumer preferences and expectations, economic factors, agricultural practices, projects in the region, environmental awareness, etc.

Key factors influencing the demand for Water Supply and Waste Water assets in the Rural City of Murray Bridge include:

- Increased tourism promoted in the towns
- Development including major residential land subdivisions

Forecasting future population levels is very difficult to do with any confidence as the population growth (or loss) is so dependent on the industry and development which is directly linked to the economy.

4.1.1. Gifford Hill

Gifford Hill is a proposed equine and residential village development to be built on greenfield land incorporating the new Murray Bridge Racing Club.

The 809 hectare Gifford Hill lies within the Murraylands Region and sits just south of the Murray Bridge Town Centre, bounded by the South Eastern freeway to the north, Brinkley Road to the east, Usher road to the South and Koehler Road to the West.

The west-east sloping land has been utilized for farming, with pockets of dense vegetation that will be retained as part of the natural open-space areas of the new site. Gifford Hill has been identified as a new township growth area as part of the State Government's 30 Year Urban Growth Plan.

The proposed development will generate a forecasted population growth of between 7,000 to 10,000 people over the next 10 years in both rural living and residential style allotments.

Gifford Hill will have a significant impact on RCMB's current asset inventory, in particular Brinkley Road, Old Swanport Road and the White Hill Interchange as well as other services such as waste collection and community services.

RCMB will also become responsible for the assets built within the Gifford Hill development. All roads, stormwater, parks and gardens will have an impact not only on Council's short term budgets, but for all Council budgets for ever more.

4.1.2. Newbridge

Newbridge is a proposed residential development located on the current Murray Bridge Race Course between the Murray Bridge Golf Club, Maurice Road, Mulgundawah Road and Melville Terrace.

Over the next 3 to 7 years it is proposed to accommodate approximately 275 residential allotments, although proposed designs have seen figures as high as 370 allotments proposed with additional facilities such as tourist accommodation, a local centre and Water Supply and Waste Water such as AFL ovals.

The progression of Newbridge is reliant on the successful relocation of the Murray Bridge Race Course to Gifford Hill.

Newbridge will also have significant impact on Council's current asset inventory. The most significant impact will be the stormwater generated and potential runoff. Detailed stormwater management plans will need to be developed as part of the design process. Road infrastructure will also be impacted, in particular the intersection of Brinkley Road, Maurice Road and Mulgundawah Road where a major upgrade will be necessary.

4.1.3. Monarto

There is potential for substantial long term growth at Monarto – particularly for industrial and commercial development.

A Development Plan Amendment has recently been completed for Monarto which has created an Urban Employment Zone. The Zone aims to encourage further industrial and commercial development in association with an intermodal facility taking advantage of existing, established transport corridors including the Adelaide to Melbourne rail line and the South Eastern Freeway. Provision has also been made for a Freeway Service Centre to accommodate road freight using the South Eastern Freeway, and a local service centre to provide facilities for workers in and around Monarto.

The Development Plan Amendment has now been accompanied by an endorsed Master Plan for the Monarto area which sets the long term vision and framework for the future of Monarto. The Master Plan notes the potential for significant future industrial and commercial growth in the area and recommends a number of actions for further investigation including streetscape improvements, an airport and infrastructure requirements.

The Monarto Zoological Park is also set for an expansion to include accommodation facilities and further exhibits.

The pace of industrial and commercial growth will be dictated by the market but the planning policies are now in place to support the progression of this growth.

4.1.4. Mypolonga

Current levels of service within the Mypolonga region are considered to be adequate for any potential growth and therefore are considered negligible.

4.1.5. Callington

Much of the township of Callington is contained within the District Council of Mt Barker.

It is anticipated that over the next 30 years an additional 130 dwelling sites will be required to meet demand. With the current level of infrastructure in Callington future growth is considered to have a negligible impact on council's assets.

Hillgrove Resources currently operate the Kanmantoo Copper Mine to the north of Callington. This mine operates within the District Council of Mt Barker but transportation of ore via road transport utilises the Old Princess Highway located within RCMB.

4.1.6. Monteith

Limited scope for future development therefore considered negligible.

4.1.7. Woods Point

Fully developed with no potential to contribute to further land supply.

4.1.8. Jerois

Future demand and potential growth in Jerois is considered negligible. Analysis indicated that over the next 15 years current supply will meet demand.

4.1.9. Wellington

Wellington has an extensive area containing approximately 130 undeveloped allotments in southern portion of the Country Township zone, although planning and environmental issues may restrict the extent of development.

The Rural Communities study suggests that there is sufficient supply of dwelling sites to meet demand over the next 30 years.

Similarly, future demand for RCMB infrastructure in Wellington is considered negligible

4.1.10. White Sands

The current River Murray Settlement Zone located at White Sands has significant land available for development. This could allow for 233 additional residential allotments having a reasonable impact on council infrastructure, in particular the generation of new assets that will come under the ownership of RCMB.

4.2. Changes in Technology

Council is continuously monitoring new asset treatments or changes within the industry that may be available to adopt or implement to increase the life of its assets. Technology changes that could affect the delivery of services covered by this Water Supply and Waste Water Asset Management Plan are documented in Table 5.

Technology Change	Effect on Service Delivery
New technology for purification of water and sewerage	Reduction in pre-treatment plant, reduction in power and chemical requirements, reduction in costs.
Improvements to Solar Power	Reduction in emissions from current power generation, reduction in power bills, renewable energy, no need to connect to existing power source which may be some distance away. Require battery to store power for peak and low sun times.
Microbiological pond de-sludging processes	Reduce the need to manually excavate sludge from Oxidation Lagoon, reducing the risk of damaging the lining of the lagoon
High Rate Algal Pond (HRAP)	Gives the same performance as a standard lagoon but in one quarter of the area.

Table 5: Technology Changes that have a potential impact on Council's Water Supply and Waste Water Assets

4.3. Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand

management. Opportunities for demand management including non-asset solutions will be developed in future revisions of this Asset Management Plan.

4.4. New Assets from Growth

The new assets required to meet growth will be acquired from land developments or will be constructed by Council. Acquiring these new assets will commit Council to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required.

Future versions of this Asset Management Plan will consider the impacts of growth in greater detail.

5. RISK MANAGEMENT

The Rural City of Murray Bridge recognises that risk management is an integral part of good management practice and an essential element of good corporate governance.

In this regard, risk management should be embedded into the organisation's philosophy and form part of the continuous improvement process to mitigate against risks and maximise opportunities in our business. Although the concept of risk is often interpreted in terms of hazards or negative impacts, the current Risk Standard ISO 31000-2009 is concerned with risk as exposure to the consequences of uncertainty, or potential deviations from what is planned or expected and the impact this may have on an Organisation's objectives. Organisations that manage risk effectively and efficiently are more likely to achieve their objectives and to do so at a lower overall cost.

All levels of staff have a role to play in integrating risk management activities into their Business Unit environment.

This framework aims to cover five (5) areas across the organisation:

- Strategic – risks associated with high level goals, objectives and strategies
- Operational – risks associated with functions / operations on a daily basis
- Reporting – the reliability of reporting, its effectiveness and the assurance it provides
- Compliance – risks associated with regulatory and compliance risks
- Project – risks associated with projects

Successful implementation of the framework will demonstrate that risks and opportunities are being systematically identified, rigorously analysed and effectively managed on an organisational wide basis. This will provide an increased level of assurance to the Council, the Audit Committee and Executive Management that the organisation's business objectives are being achieved.

5.1. Risk Principles and Process

Risk Management requires more than simply adopting a policy. It requires embedding risk management into every aspect of Council's operations.

The organisational risk management framework aims to:

- Align risk appetite/tolerance with strategy
- Enhance risk response decisions, identify opportunities for business improvement
- Identify and manage business unit and whole of organisation risks

The organisations risk appetite / tolerance is:

- The level of risk the business unit and whole of organisation is prepared to tolerate
- Individual and composite risks falling within pre-determined acceptable tolerances

It is determined by:

- Assessing the nature and extent of the risks associated with business unit operations
- Deciding an acceptable level of risk
- Monitoring and reporting the level of risk exposure
- Evaluating the need for insurance

The risk appetite/tolerance is monitored by Council's Audit Committee and may be subject to change as the organisation's risk management culture and capability develops or as a result of changing circumstances. Risk management is applied to all levels in the life of a process, service, project or asset. Maximum benefit is usually obtained by integrating and applying the risk management process at the start of all processes.

In summary, all parts of the organisation must review their business activities to identify any opportunities for business improvement. Identify each risk, their cause(s) and existing controls then analyse each risk against likelihood and consequence values to determine a risk rating, and where required, develop treatments to mitigate against the risk. The aim is to capture opportunities and manage residual risk within the organisation's overall risk appetite/tolerance.

The organisation's primary risk management process follows the Australian/New Zealand Standard – Risk Management AS/NZS ISO 31000 seven-step process (refer to Figure 4). These generic processes provide a structured framework for managing strategic, operational and project management risks across business unit and organisation levels.

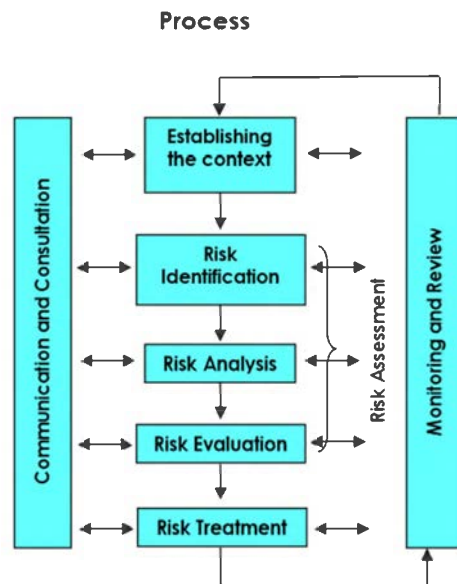


Figure 4: Australian/New Zealand Standard ISO 31000 Risk Management Process

5.2. Risk Management Framework

5.2.1. Objectives

Council's risk management framework (refer to Figure 5) enables the organisation to achieve:

- A more confident and rigorous basis for business planning (both strategic and operational), project management and decision-making
- Better identification of opportunities and threats to achieving our business objectives and delivering on priorities for the community
- More effective allocation of physical, human and financial resources in delivering services
- Improved business resilience by recognising the value of taking an holistic and integrated approach to risk management, compliance, security, emergency and crisis management, business continuity and disaster recovery
- Improved compliance with relevant legislation
- Ensuring a continuous improvement regime across Council
- The community having increased confidence in Council's operations

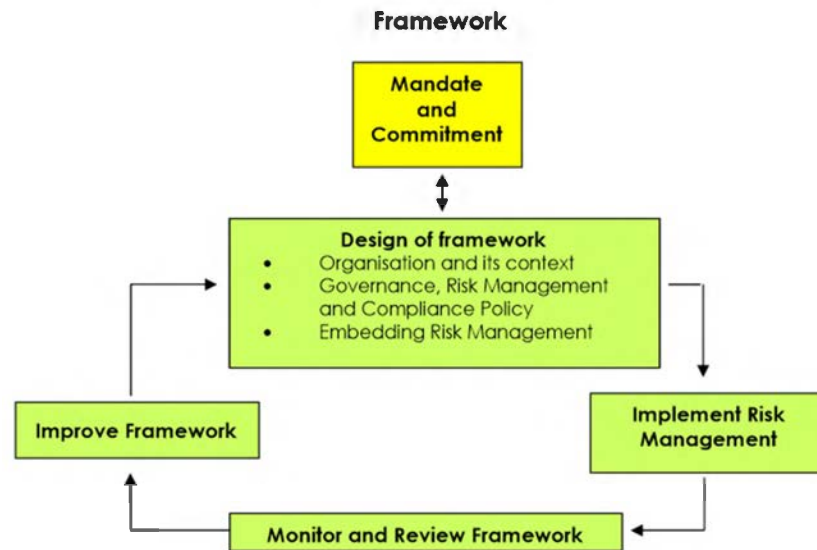


Figure 5: Council's Risk Management Framework

5.3. Risk Assessment

The key risk management criteria relating to Council's Water Supply and Waste Water assets include:

- Operations/IT (Activities or Service Delivery)
- Financial
- Environmental Impact
- Safety & People (Staff & Public)
- Public Image & Reputation
- Governance/Compliance
- Project Consequences – Time, Quality, Cost

See Table 6 for details about the different levels of risk that can occur for each criteria.

RISK ASSESSMENT MATRIX



RISK ASSESSMENT MATRIX		CONSEQUENCE					
		Insignificant Consequences are not important	Minor Consequences are somewhat important	Moderate Consequences are important & significant	Major Consequences are very important & very significant	Extreme Consequences are extremely serious or catastrophic	
RISK ACTIONS	Operations/IT (Activities or Service Delivery)	Insignificant disruption to non critical /core service activities. Short term inconvenience. Negligible impact on service provision usually site specific only	Medium to large disruption to non critical/core service activities for short term. Medium to large percentage of customers inconvenienced may receive some complaints across several service locations	Significant disruption to critical/core services (less than 24 hrs). Medium to large percentage of customers significantly inconvenienced across large area. Will receive complaints across many services locations	Severe disruption to critical core services. Continuing difficulties in servicing customers over a prolonged period (1 to 2 days) across majority of service locations that will result in a large amount of complaints	Severe long term disruption or permanent loss of capability to provide critical core services to customers for 2 days or more across all service locations	
	Financial	1% of budget or <\$5K	2.5% of budget or <\$50K	>5% of budget or <\$500K	>10% of budget or <\$5M	>25% of budget or >\$5M	
S	Environmental Impact	Superficial environmental damage with cosmetic remediation required	Environmental damage, reversible with short term remediation	Environmental damage, reversible with medium term remediation	Major environmental damage, reversible with long term remediation	Major long term irreversible environmental damage	
	Safety & People (Staff & Public)	Local First Aid may be required	Minor injury that may require medical attention and limited ongoing treatment	Serious injury requiring ongoing medical treatment and/or lost time	Extensive injuries that are life threatening injuries or multiple serious injuries and require hospitalisation	Death(s) or Permanent Total Disability or ill health	
	Public Image & Reputation	No impact on reputation/staff morale or Council with little or no public/local interest	Minimal customer/morale sensitivity and damage to Council name.	Moderate customer/morale sensitivity and damage to Council name impacting noticeably on business activities	Significant customer/staff morale sensitivity and damage to Council name	Very High public/staff morale sensitivity and irreparable damage to Council name	
H	Governance/ Compliance	Nil regulatory consequence. Contractual non-compliance or breach of legislation with nil litigation or prosecution and/or penalty.	Minor regulatory consequence with formal warning/ instruction. Contractual non-compliance or breach of legislation with unlikely litigation or prosecution and/or penalty.	Moderate regulatory consequence which may result in fines. Contractual non-compliance or breach of legislation with threat of litigation or prosecution and/or penalty.	Major regulatory consequence resulting in material fines, penalties and restrictions on Council Operations. Contractual non-compliance or breach of legislation with probable litigation or prosecution and/or penalty.	Extreme regulatory consequence which could result in Dismissal of Council. Contractual non-compliance or breach of legislation with litigation or prosecution and/or penalty with fines.	
M	Project Consequences	Time	Insignificant impact on project milestones	Minimal impact on project milestones	Significant impact on project milestones.	Severe impact on project milestones	Vital impact on project milestones
		Quality	Some non key requirements not met	A key requirement may not be met	Some key requirements may not be met	A majority of key requirements may not be met	Major deficiencies with all project deliverables. No requirements met.
L	Cost	Justifiable additional costs that can be absorbed in the project's budget	Additional costs requiring reprioritisation and/ or reallocation of project funds with delegation from Project Manager	Additional costs requiring submission for supplementary funding with delegation by Project Executive or Board	Significant additional costs to be approved by CEO/ Executive	100% of budget expended without achieving any key deliverables. To be approved by Council.	

Table 6: Risk Consequences



5.4. Identify risks

The next step in the process is to identify and list all risks that may influence the process or service action or project under assessment through Council's electronic risk management program (CAMMS Risk Manager). Identify where, when, why and how events could prevent, degrade, delay or enhance the achievement of the objectives.

A comprehensive identification of all potential risks is essential in order that they can be properly analysed and assessed in terms of the adequacy of controls in the remaining steps of the assessment process.

When identifying risks it is important to also consider the causes of each risk. It may be that a particular risk may have more than one potential cause, which may in turn require different controls. For example, the risk of unauthorised access to confidential information may be caused by poor physical security, carelessness on the part of a staff member, poor knowledge of procedures or deliberate release. Each possible cause requires a different control measure. It is important that no significant causes be overlooked when identifying risks.

5.5. Analyse risks

- Risk analysis aims to establish an understanding of the risk
- Identify and evaluate existing control measures
- Determine consequences and likelihood to assess the level of risk.

5.6. Evaluate Risks

The purpose of risk evaluation is to make decisions, based on outcomes of the risk analysis, about which risk treatment, whether an activity should be undertaken, and treatment priorities. Compare estimated levels of risk against the criteria and consider the balance between potential benefits and adverse outcomes. This enables decisions to be made about the extent and nature of treatments required and about priorities.

The evaluation is to consider whether the current control measures are sufficient and the risk is appropriately managed and therefore acceptable. This will often be the case for lower level risks and in such cases, it may be sufficient to simply monitor the risk to ensure any change in the risk status is identified and reacted to early.

Identify and prioritise business improvement opportunities when undertaking an analysis of a risk. Accordingly, give a high priority to those significant business improvements which lead to a high performance outcome for the community. A balance needs to be struck between the costs to implement business improvement opportunities and the benefits to be gained.

5.7. Likelihood

The likelihood rating refers to the potential for the risk to happen, for example its probability or frequency. The likelihood that an event will occur is not always easy to assess. Subjective biases may give rise to different assessments by different people. To avoid this situation, and in order to provide a degree of consistency across the organisation in assessing likelihood, the Table 7 is to be used as a guide.



Rating Name	Rating Description
Rare	Event may occur only in exceptional circumstances (< 10% chance of occurring)
Unlikely	The event may occur at some time, say once in 10 years (10-30% chance of occurring)
Possible	The event may occur at some time, say once in 10 years (10-30% chance of occurring)
Likely	The event may occur in most circumstances - once a year (50-80% chance of occurring)
Almost Certain	Event is expected to occur in most circumstances - more than once per year, or is already happening (>80% chance occurring)

Table 7: Likelihood Ratings for Risk Management

5.8. Consequences

The consequences, i.e. the outcome or impact of an event, are to be determined against the relevant category of criteria for a consistent approach to determine a level. Consequence Ratings are listed in Table 8.

Name	Description
Insignificant	Effect is minimal
Minor	Event requires minor levels of resource and input for easy remediation
Moderate	Some objectives affected
Major	Some important objectives affected or cannot be achieved
Extreme	Disaster with potential to lead to collapse or having a profound effect

Table 8: Consequences Ratings for Risk Management

5.9. Risk Rating

The overall risk rating is determined by finding the point of intersection between the likelihood rating (vertical axis) and the consequence rating (horizontal axis) shown in Figure 6.

	Consequence				
	Level 1 Insignificant	Level 2 Minor	Level 3 Moderate	Level 4 Major	Level 5 Extreme
Almost Certain	Moderate	High	High	Severe	Severe
Likely	Moderate	Moderate	High	High	Severe
Possible	Low	Moderate	Moderate	High	Severe
Unlikely	Low	Low	Moderate	Moderate	High
Remote	Low	Low	Low	Moderate	High

Figure 6: Risk Matrix



5.10. Control measures

A control can be defined as an existing process, policy, device, practice or other action that acts to minimise negative risk or enhance positive opportunities. The effectiveness of controls can be rated as either:

- **Adequate** – Controls address the risk, little scope for improvement. No convincing cost / benefit justification to change approach.
- **Opportunities for Improvement** – Controls have inadequacies, improvements identified. Some cost / benefit justification to change approach.
- **Inadequate** – Controls do not appropriately address the risk, immediate need for improvement actions. Significant cost / benefit justification to change approach.

5.11. Treat Risks

If the current control measures are not sufficient, additional risk treatments are to be identified and considered. Treatments are to be designed to either reduce the likelihood of the risk occurring or to reduce the consequences of the risk were it to occur. Ensure the proposed treatment(s) will reduce the risk level to an acceptable level, i.e. medium or low. If, even with proposed additional treatments, it is assessed the risk level will remain at an unacceptable level, serious consideration is to be given as to whether the activity that will create the risk is to be commenced, or continued if already in progress.

A further important consideration in considering risk treatments is the balancing of cost associated with the treatment against the benefit derived from it. In general, the cost incurred in managing risks needs to be commensurate with the benefits gained. Also, consider how risk avoidance regarding one activity can affect the significance of risk in other activities and the total risk profile.

On completion of the risk assessment process a risk treatment plan is to be developed. The plan will prioritise the risks that require treatment, identify the treatments that require implementation, and identify who is responsible for implementing particular treatments. Where appropriate the plan should also identify critical implementation milestones and how these will be measured.

When determining the most appropriate treatment options, all risks need to be considered and their priority levels compared to each other. The resources available to treat these risks also need to be determined. The aim is to effectively identify and prioritise risks and to treat risks according to their priority in the most effective manner with the resources available.

There are five treatment options for managing risk:

- **Avoiding the risk**, by deciding not to start or continue with the activity that creates the succession risk (for example, deciding not to commence a new project that requires a role with rare technical expertise)
- **Changing the likelihood of the situation**, by reducing the misalignments between the demands of the organisation's critical roles and the potential of the workforce to meet these demands
- **Changing the consequence of the situation**, by minimizing the nature and severity of the impact if the critical role does become vacant



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- **Sharing the risk** by collaborating with, for example, another organisation
- **Tolerating the risk** without further treatment (in other words, making an explicit decision to retain the risk)



6. LIFE CYCLE MANAGEMENT PLAN

The life cycle management plan details how Council plans to manage its Water Supply and Waste Water assets at the agreed levels of service while optimising life cycle costs.

Life Cycle Management is recognised by Council as an essential component of this Water Supply and Waste Water Asset Management Plan. This section of the plan provides details of RCMB's data and the processes required to effectively manage, renew and upgrade Council's Water Supply and Waste Water assets. It also documents the analysis that RCMB undertakes regularly to predict and monitor expected future expenditures required to effectively manage Council's assets.

Undertaking lifecycle asset management means considering all management options and strategies as part of the asset lifecycle, from planning to disposal. The objective of managing the assets in this manner is to look at long-term cost impacts (or savings) when making asset management decisions. Figure 7 provides a graphical representation of the asset lifecycle including each of the stages an asset passes through during its life.



Figure 7: Life Stages of Infrastructure Assets

The Rural City of Murray Bridge uses **Assetic myData** for its Asset Register. It contains a listing of all Water Supply and Waste Water Assets and has the ability to include the following details for each:

- Year of construction
- Material type
- Length, width, height, diameter, depth
- Hierarchy classification
- Most recent valuation
- Most recent condition rating



6.1. Background Data

6.1.1. Data Quality

The quality of the currently available data for Water Supply and Waste Water assets is considered to be "Medium-High".

Both of the Water Supply and Waste Water (CWMS) schemes were constructed by developers and gifted to Council; Riverglen in 1991 and Woodlane in 1997. The asset register and GIS were developed from the As Constructed plans supplied by the developers.

6.1.2. Asset Details

The assets covered by this Asset Management Plan are shown in the table below.

Asset Category	Description	Quantity
Riverglen		
Water Mains	PVC Rising Main, Pipe	2983m
Water Nodes	2 x Tanks, Valve	3
Water Plant and Equipment	2 x Pumps, 132 x Sub Water Meters, 1 x Water Filtration Plant	138
Water Treatment Facilities	Backwash Drain	1
Sewer Mains	PVC Pipe	3326m
Sewer Nodes	3 x Tanks, 3 x Valves, 1 x Pit	7
Sewer Plant and Equipment	5 x Pumps, Pump Controller System including Sensors, Switchboard, Communications Module, Antenna and Modem	10
Sewer Treatment Facilities	Series of Soakage Trenches	1
Woodlane		
Water Mains	Polyurethane Pipe	1806m
Water Nodes	4 x Tanks	4
Water Plant and Equipment	2 x Pumps, 60 x Sub Water Meters	62
Water Treatment Facilities	N/A	0
Sewer Mains	PVC Pipe	2839m
Sewer Nodes	1 x Tank, 7 x Inspection Openings	8
Sewer Plant and Equipment	5 x Pumps, Pump Controller System including Sensors, Switchboard, Communications Module, Antenna and Modem	10
Sewer Treatment Facilities	N/A	0

Table 9: Assets Covered by this Asset Management Plan



6.1.3. Asset Condition Assessment

The essence of good asset management is to understand the condition of Council's assets and the various types of distresses that affect them and to use this data to assist in maintaining the level of service the community desires in the context of affordability, intergenerational equity and minimised risk of asset failure.

With nearly 700 Water Supply and Waste Water assets, Council requires a rigorous Condition Assessment process that is repeatable and reliable. Most importantly, it must allow for comparisons between similar assets to enable prioritisation of remedial works. These requirements are most efficiently fulfilled using a numerical scoring system.

The condition scoring scale used by Council follows internationally accepted good practice² of starting with 1 for new or near new and the values increasing to 5 as the asset condition deteriorates. The Table below provides a general description of asset condition for each score in the scheme that is currently used.

Condition Score	Condition	Description
1	New or Near New	Asset is New or Near New with minimal signs of wear or use.
2	Good	Asset has limited signs of wear and use that only require routine maintenance.
3	Fair	Asset has numerous signs of wear and use. While the condition is still acceptable for normal use, minor capital works are needed to prevent further deterioration.
4	Poor	Asset has considerable signs of wear and use. The condition is impacting on the use of the asset and major capital works are required to return the asset to an acceptable condition.
5	Very Poor	Asset is near the end of its useful life and only provides a severely degraded service. It requires replacement in the near future.
End of Life	Unserviceable	Asset can no longer provide the service it is intended to provide. It is beyond practical renewal and requires replacement.

Table 10: Council's Condition Scoring Scheme

The Condition Scoring Schemes used to assess the condition of Council's Water Supply and Waste Water network are to be detailed in Council's Data Collection Manuals. The manual will provide guidance to the assessor that takes the form of advisory notes and photographic examples. This is included as an Improvement Action to be carried out under this Plan. An example of a Data Collection Manual is shown in the Figure below.

² International Infrastructure Maintenance Manual 2006.

Picnic Settings and Seating	
timber, metal or other material, placed throughout council's parks and reserves.	
1	Sound table or seat, well constructed and maintained with no defects.
2	As above but showing minor wear, tear and deterioration e.g. slight cracking/weathering of timber or concrete, slight staining of metal, minor impact damage, but no loss of protective coatings or corrosion of fastenings. Deterioration has no significant impact on strength and appearance of the table or seat.
3	Table or seat functionally sound, but appearance affected by minor defects e.g. impact damage, loss of protective coatings, staining of steel, splitting of timber, <2mm cracking in concrete, minor spalling, slight joint displacement, corrosion and loosening of fastenings. Some deterioration beginning to affect the strength and appearance of the table or seat.
4	Table or seat functioning but with problems due to significant defects e.g. loss of protective coatings, corrosion of steel, welds and fastenings, impact damage, decay/splitting of timber, 2-5mm cracking in concrete, spalling, joint displacement, loose fastenings and supports, likely to cause a marked deterioration in strength, and appearance.
5	Picnic Table or seat has serious problems and has failed or is about to fail in the near future, causing unacceptable levels of strength, safety and appearance.



Figure 8: Example of a Condition Data Collection Manual

Barring natural disasters or vandalism, the condition of Water Supply and Waste Water assets generally change slowly. Consequently the usefulness of condition scores is usually considered to be 3-5 years. While there is reasonable confidence in the quality of the condition data used for the preparation of the Plan, Council should be planning for a new condition survey for its Water Supply and Waste Water assets to be completed on a rolling 3-5 year plan. This is included as an Improvement Action to be carried out under This Plan.

6.1.4. Infrastructure Work Expenditure Categories

Historically, expenditure on Water Supply and Waste Water assets has generally been considered to be Capital when the asset is being provided from new or is subject to some major change, or Maintenance when the expenditure is minor during the life of the asset.

Strategic Asset Management requires more clarity about the effect any expenditure is having on an asset, especially its expected life-cycle. As a consequence, infrastructure asset expenditure is better classified into one of five categories. These categories are set out in Table 11.

Expenditure Type	Description	Typical Work	Effect on Life-cycle
Capital - New	Provision of a new asset.	Construction of a new road.	Commences the asset on its life-cycle path.
Capital - Renewal	Renews a degraded asset back to New or Near New condition.	Reconstruction of an existing road.	Resets the asset back to the start of its life-cycle path.
Capital - Upgrade	Improves the functionality of an asset.	Sealing an unsealed road.	Resets the asset back to the start of its life-cycle path.
Capital - Expansion	Improves the capacity of an asset.	Adding an additional traffic lane.	Commences the expanded portion on its life-cycle path. Any effect on the original portion of the asset depends on any work done on that portion.
Maintenance	Minor repairs.	Repairing potholes.	Keeps asset on its expected life-cycle path.

Table 11: Infrastructure Work Expenditure Categories

6.2. Current Asset Condition

A comprehensive condition assessment has not been undertaken on the Water Supply and Waste Water assets. As many of the assets are relatively new compared to their useful life, the Overall Condition Index of the combined Riverglens and Woodlane Water Supply and Waste Water networks is estimated to be 1.8.

Undertaking a condition assessment of the Water Supply and Waste Water assets is included as an Improvement Action in this Plan.

6.3. Routine Maintenance Plan

As noted in Table 11, maintenance are those minor works necessary to keep assets on their expected life-cycle path. Failing to carry out necessary maintenance when it is required will result in assets deteriorating faster than expected.

Not achieving the expected life from assets costs an organisation in the long run as it will be forced to renew its assets earlier resulting in higher annual capital renewal expenditures. In addition, as the overall condition of the assets deteriorates the annual maintenance cost will rise as assets in poorer condition require more maintenance.

Council uses both its own staff and external contractors to carry out routine maintenance on its Water Supply and Waste Water assets. Figure 9 shows a typical inspection and repair decision process. Intervention levels take into account asset preservation and community risk reduction factors. Council will develop a manual detailing the procedure, intervention levels and appropriate actions. This is noted as an action in the Improvement Plan.

Council's maintenance budget for Water Supply and Waste Water assets for the 2017-2018 Financial Year is \$123,945.00. This figure includes operational costs such as regular servicing of equipment, purchase of replacement parts and equipment and running costs such as purchase of chemicals for the Water Filtration Plant and SCADA fees.

The actual historical expenditure has been estimated from an assessment of financial reports and the figures are shown in Table 12.

Year	Average Annual Expenditure
2011	\$146,659.18
2012	\$178,107.31
2013	\$146,024.39
2014	\$128,394.53
2015	\$181,589.93
2016	\$144,730.35
Average	\$154,250.95

Table 12: Average Annual Maintenance Expenditure

For Strategic Asset Management purposes, it would be advantageous for Council's financial accounting system to separately record maintenance expenditure on individual asset categories at the separate Water Supply and Waste Water locations. This will enable Council to identify assets requiring unusually high amounts of maintenance and to resolve any issues at that location.

A review of the procedures used for recording asset expenditure is included as an Improvement Action to be carried out under this Plan.

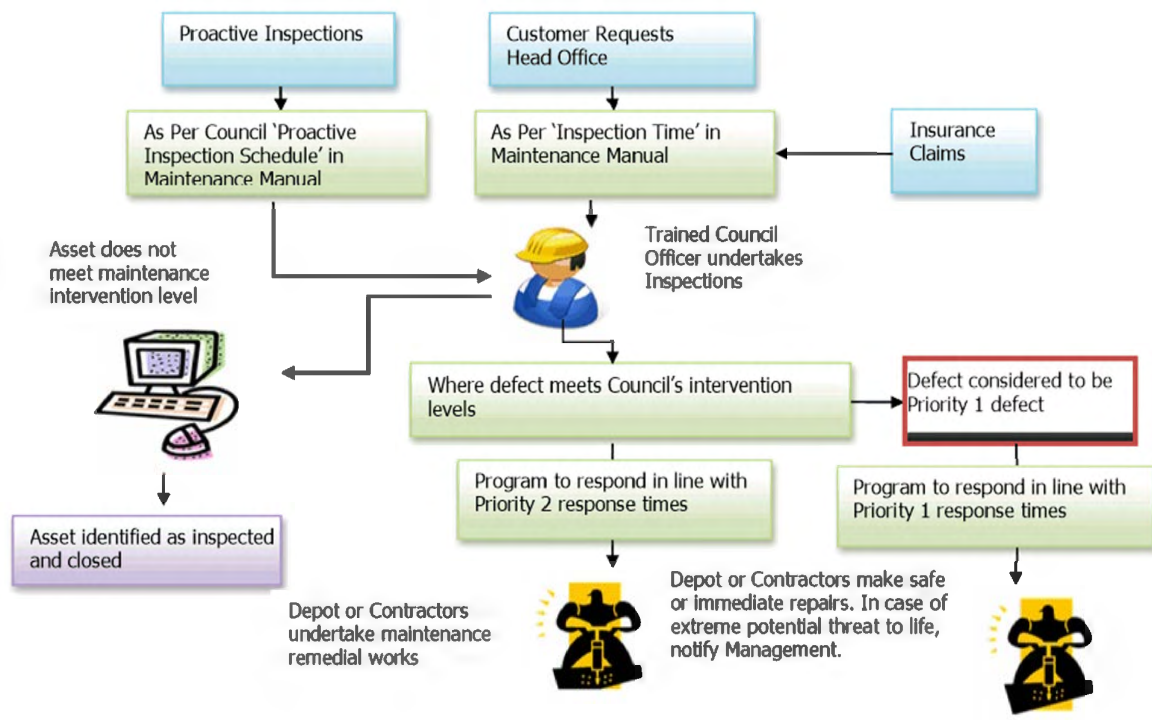


Figure 9: Sample Maintenance Inspection Flow Chart



6.4. Renewal & Replacement Plan

Council has adopted the following useful lives for Water Supply and Waste Water assets.

Asset Type		Useful Life (years)
Infrastructure		
Water Mains	Pipes, Rising Mains	100
Water Nodes	Tanks, Valves	25-80
Water Treatment Facilities	Soakage Trench	100
Sewer Mains	Pipes, Rising Mains	100
Sewer Nodes	Tanks	25-80
	Valves	25
	Pits	100
Sewer Treatment Facilities	Soakage Trench	30
Equipment		
Water Plant and Equipment	Water Filtration Plant	12
	Pumps	12
	Sub Water Meters	20
Sewer Plant and Equipment	Antenna, Modem & Communications Modules	7
	Pump Controller	4
	Pumps	12

Table 13: Useful Lives for Water Supply and Waste Water Assets

Sound asset management dictates that Water Supply and Waste Water assets are renewed before they have deteriorated to the point that they are unserviceable. The practice of RCMB is to do that.

While past practice has been successful for Council, keeping the *status quo* does not guarantee ideal outcomes into the future. As the Water Supply and Waste Water assets age, the pattern of renewal work can be expected to change. The annual Capital Renewal budget needs to track these changes, especially when the level of work required increases.

To assist with Council's long term financial planning Council will use Assetic's *myPredictor* modelling software to produce a 10-year forecast for Council's Water Supply and Waste Water assets. The software uses a wide range of inputs including details of construction, current condition, expected life-cycles, renewal intervention practices and current budgets, both Renewal and Maintenance. The prime outputs from *myPredictor* are forecasts of changes in asset condition and the corresponding budget requirements.

This will be undertaken after the condition assessment is complete and is included in the Improvement Plan.

As a minimum, Council should be funding the depreciation of Water Supply and Waste Water assets to maintain the level of service. Table 14 shows the Annual Depreciation Expense, and therefore required capital spending, for Council's Water Supply and Waste Water assets.



Asset Category	Annual Depreciation Expense
Water Mains	3,621.34
Water Nodes	5,125.43
Water Plant and Equipment	4,534.13
Water Treatment Facilities	114.91
Sewer Mains	5,392.10
Sewer Nodes	1,401.01
Sewer Plant and Equipment	6,480.07
Sewer Treatment Facilities	555.41
Total	\$27,224.40

Table 14: Annual Depreciation for Water Supply and Waste Water Assets

6.5. Creation, Expansion and Upgrade Plan

A major upgrade of the Water Filtration Plant at Riverlgen is currently underway and will be completed during the 2017-2018 Financial Year. The budgeted cost is \$240,000. An independent valuation of the Plant will be sought once it is completed and functioning.

The construction of new Water Supply and Waste Water assets occurs as a response to the development of new land and changed land use. Typically, Water Supply and Waste Water assets are acquired by RCMB as assets "Gifted" from developers who have constructed new subdivisions, especially if the development is outside of urban areas where connection to existing services is impractical.

As discussed in Section 4, future versions of this plan will properly consider the impact of new development. Until that time Council, will continue to monitor its Water Supply and Waste Water assets and initiate creation, expansion and upgrade projects when the needs are recognised.

7. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as further information becomes available on the desired levels of service, environmental condition and current and projected future asset performance.

For this version of the Water Supply and Waste Water Asset Management Plan, only the Renewal & Replacement Plan has been developed sufficiently to enable 10-year forecasts to be made. Consequently, the funding strategy will cover Capital Renewal and Maintenance forecasts only.

7.1. Financial Statements

The next full valuation of all Water Supply and Waste Water assets is due in the 2021-2022 Financial Year. The Written Down Value for Council's Water Supply and Waste Water Assets at 1 July 2016 is estimated to be:

Asset Category	Written Down Value (\$)
Water Mains	313,246.74
Water Nodes	148,045.08
Water Plant and Equipment	23,577.37
Water Treatment Facilities	8,180.89
Sewer Mains	517,053.68
Sewer Nodes	53,213.65
Sewer Plant and Equipment	57,364.51
Sewer Treatment Facilities	12,912.20
TOTAL	\$1,133,594.12

Table 15: Water Supply and Waste Water Written Down Values at 1 July 2016

Depreciation was calculated on a "straight line" basis using the condition of the asset to determine its remaining useful life for all assets in this plan.

Depreciation using condition was calculated by:

$$\text{Accumulated Depreciation} = (\text{CRC} - \text{Residual Value}) \times \left(\frac{\text{Condition Score}}{\text{End Of Life Condition Score}} \right)$$

Residual values, useful lives and unit rates are to be reviewed and adjusted if appropriate at the end of each Financial Year.

While calculating depreciation using condition instead of age requires more rigour it can provide significant benefit in comparison to traditional straight-line methods. When assets are in good condition, such as they are in RCMB, the traditional methods may result in over

depreciating those assets which then results in carrying higher depreciation charges in the operating accounts.

Documentation of financial procedures has been included as an Improvement Action to be carried out under this Plan.

7.2. 10-Year Funding Requirements

The 10-Year funding requirements for Council's Water Supply and Waste Water assets are set out in Table 16. These requirements are made up of:

- Annual Capital Renewal expenditures for recommendations set out in this plan
- Capital Upgrade expenditure identified by Council officers
- Annual maintenance expenditures

It is recognised that consideration of factors outside the scope of this Plan will influence the extent to which the funding requirements are implemented.

Year	Maintenance	Capital	Total
1	\$160,000	\$268,000	\$428,000
2	\$160,000	\$27,225	\$187,225
3	\$160,000	\$27,225	\$187,225
4	\$160,000	\$27,225	\$187,225
5	\$160,000	\$27,225	\$187,225
6	\$160,000	\$27,225	\$187,225
7	\$160,000	\$27,225	\$187,225
8	\$160,000	\$27,225	\$187,225
9	\$160,000	\$27,225	\$187,225
10	\$160,000	\$27,225	\$187,225

Table 16: 10 Year Funding Requirements for Council's Water Supply and Waste Water Assets



7.3. Key Financial Forecasting Assumptions

The key financial forecasting assumptions made to prepare this Plan are:

- The current levels of service will remain constant over the life of this Plan
- No growth has been accounted for in the asset stock
- The treatment and maintenance costs are based on Council's current schedule of rates and may not directly compare to Council's internal service provision actual costs
- All predicted financial figures are based on 2012-2013 rates and are not adjusted by the inflation rate for the particular year of works
- Continued use of current construction techniques and materials in alignment with current standards
- Current maintenance funding levels are meeting service level requirements
- Capital renewal is generally 'like for like'
- Depreciation is in accordance with Council Policy
- Proposed capital renewal program will be funded as per the model adopted

Council considers that these financial forecasts can further be improved in future revisions of this Plan by the following actions:

- Further refinement and improvement of the prediction modelling life-cycle paths and decisions
- Refinement of the levels of service currently being delivered via consultation with the community

8. ASSET MANAGEMENT SYSTEMS & IMPROVEMENT PLAN

8.1. Asset Management Systems

The asset information systems used by Council include:

- *myData* as a central asset management registry
- *myPredictor* for generating forecasts of asset performance and budget requirements
- *Authority* accounting software for, among other functions, trial balance, ledgers and journals. In terms of asset management, this program relies on information from the asset register.

8.2. Information Flow Requirements and Processes

The key information flows *into* this Asset Management Plan are:

- The asset register data on size, age, value, and remaining life of the network
- The unit rates for categories of work/material
- The adopted service levels
- Projections of various factors affecting future demand for services
- Correlations between maintenance and renewal, including decay models
- Data on new assets acquired by the Council

The key information flows *from* this Asset Management Plan are:

- The assumed Works Program and trends
- The resulting budget, valuation and depreciation projections
- The useful life analysis

These will impact the Long Term Financial Plan, Strategic Business Plan, annual budget and departmental business plans and budgets.

The financial reports generated by the asset information system, with valuations based upon actual asset condition (where available) are generated for Council's Financial Services staff. Works programs generated are adopted by the Engineering and Assets Business Unit for future expenditure programs.

8.3. Improvement Actions

During the course of the preparation of this Plan, aspects of Council's asset management practices were identified as requiring improvement. The specific actions required are set out in Table 17 together with the Council unit responsible for leading the action and a target date for completion.

Completing these Improvement Actions will improve Council's Asset Management Maturity and will enable future versions of this Plan to be more soundly based.



8.4. Performance Measures

The effectiveness of an Asset Management Plan can be measured in the following ways:

- The degree to which the required cash flows identified in this Asset Management Plan are incorporated into the Council's Long Term Financial Plan and Strategic Management Plan.
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the Asset Management Plan.
- The degree to which Asset Management Maturity is improved through changed practices adopted as an outcome of completing the identified Improvement Actions in Table 17.

Task No.	Task	Responsibility	Target
1	Review existing Water Supply and Waste Water Hierarchy.	E&A Business Unit	
2	Investigate costs and options for researching community satisfaction in relation to Council's road network.	E&A Business Unit	
3	Determine community satisfaction in relation to Council's Water Supply and Waste Water network.	E&A Business Unit	
4	Review draft Desired Level of Service targets for Council's Water Supply and Waste Water network using Councillor and staff input.	E&A Business Unit	
5	Finalise Desired Level of Service targets following community consultation.	E&A Business Unit	
6	Define Community-based Service Levels with appropriate performance measures and standards.	E&A Business Unit	
7	Define Technical Levels of Service with appropriate performance measures and standards that support delivering the Community-based Service Levels.	E&A Business Unit	
8	Develop Condition Assessment Manuals.	E&A Business Unit	
9	Develop a rolling 3-5 year program for condition assessments	E&A Business Unit	
10	Undertake Condition Assessment	E&A Business Unit	
11	Develop Business Rules: <ul style="list-style-type: none"> • Asset information guidelines 	E&A Business Unit	



Task No.	Task	Responsibility	Target
	<ul style="list-style-type: none"> • Logic for OCI • Segmentation and componentisation rules • Asset hierarchy • Condition Assessments • Maintenance and Renewal Treatments 		
12	Develop Procedure and Manuals for Asset Defect Inspection.	E&A Business Unit	
13	Develop Procedure and Manuals for Asset Hazard Inspection.	E&A Business Unit	
14	Develop and document process for Capital Works Planning.	E&A Business Unit	
15	Review and Document Financial Procedures including but not limited to: <ul style="list-style-type: none"> • Capitalisation • Depreciation • Useful Lives • Unit Rates • Recording WIP and Capital Expenditure 	E&A Business Unit	
16	Develop procedures for sign off or hand over of assets from internal council works, developers, gifted assets and other.	E&A Business Unit	
17	Produce myPredictor Models	E&A Business Unit	
18	Review and update Water Supply and Waste Water Asset Management Plan	E&A Business Unit	

Table 17: Recommended Improvement Actions



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9. REFERENCES

Local Government Act 1999, South Australia

International Infrastructure Maintenance Manual