CONTENTS

1. EXECUTIVE SUMMARY ................................................................................................................................. 1
  1.1. What Council Provides .................................................................................................................................... 1
  1.2. What does it Cost? ......................................................................................................................................... 2
  1.3. Plans for the Future .................................................................................................................................... 2
  1.4. Measuring our Performance .......................................................................................................................... 2
    1.4.1. Quality ............................................................................................................................................ 2
    1.4.2. Function ........................................................................................................................................ 2
    1.4.3. Safety ........................................................................................................................................... 3
  1.5. The Next Steps .......................................................................................................................................... 3

2. INTRODUCTION .................................................................................................................................................. 4
  2.1. Background ................................................................................................................................................ 4
    2.1.1. The Rural City of Murray Bridge .................................................................................................. 4
    2.1.2. Purpose of Asset Management Plans .......................................................................................... 5
    2.1.3. Scope of this Asset Management Plan ..................................................................................... 5
  2.2. Linkages to the RCMB Strategic Plan ......................................................................................................... 6
  2.3. Key Stakeholders ........................................................................................................................................ 9
  2.4. Asset Management Maturity .................................................................................................................... 9
  2.5. Asset Management Plan Framework Applicable to this Plan .................................................................. 10
    2.5.1. Plan Framework .......................................................................................................................... 10
    2.5.2. Core and Advanced Asset Management .................................................................................. 11

3. ASSET FUNCTION AND LEVELS OF SERVICE ............................................................................................... 12
  3.1. Asset Hierarchy ......................................................................................................................................... 12
  3.2. Community Expectations and Consultation ............................................................................................ 13
  3.3. Legislative Requirements ......................................................................................................................... 13
  3.4. Current Levels of Service .......................................................................................................................... 14
    3.4.1. Level of Service Description ........................................................................................................... 14
  3.5. Technical Levels of Service ...................................................................................................................... 14
    3.5.1. Network Condition Assessment .................................................................................................. 14
    3.5.2. Asset Defect Inspections ............................................................................................................... 14
    3.5.3. Asset Hazard Inspections ............................................................................................................. 15
  3.6. Community Levels of Service .................................................................................................................... 15
  3.7. Shared Use of Road Reserves ................................................................................................................... 15
  3.8. Desired Levels of Service .......................................................................................................................... 15

4. FUTURE DEMAND .............................................................................................................................................. 16
  4.1. Demand Forecast ..................................................................................................................................... 16
4.1.1. Gifford Hill ..................................................................................................................... 16
4.1.2. Newbridge ..................................................................................................................... 16
4.1.3. Monarto ........................................................................................................................ 17
4.1.4. Mypolonga .................................................................................................................... 17
4.1.5. Callington ...................................................................................................................... 17
4.1.6. Monteith ....................................................................................................................... 17
4.1.7. Woods Point .................................................................................................................. 17
4.1.8. Jervois ............................................................................................................................ 17
4.1.9. Wellington ..................................................................................................................... 17
4.1.10. White Sands .................................................................................................................. 17

4.2. Changes in Technology ......................................................................................................... 18
4.3. Demand Management Plan .................................................................................................. 18
4.4. New Assets from Growth ...................................................................................................... 18

5. RISK MANAGEMENT ...................................................................................................... 19
5.1. Risk Principles and Process ................................................................................................... 19
5.2. Risk Management Framework .............................................................................................. 20
5.2.1. Objectives ...................................................................................................................... 20
5.3. Risk Assessment .................................................................................................................... 21
5.4. Identify risks ........................................................................................................................ 23
5.5. Analyse risks ....................................................................................................................... 23
5.6. Evaluate Risks ..................................................................................................................... 23
5.7. Likelihood ............................................................................................................................ 23
5.8. Consequences ....................................................................................................................... 24
5.9. Risk Rating ............................................................................................................................ 24
5.10. Control measures ............................................................................................................... 24
5.11. Treat Risks ......................................................................................................................... 25

6. LIFE CYCLE MANAGEMENT PLAN .................................................................................. 26
6.1. Background Data ................................................................................................................... 27
6.1.1. Asset Details .................................................................................................................. 27
6.1.2. Asset Condition Assessment ......................................................................................... 28
6.1.3. Infrastructure Work Expenditure Categories ................................................................ 31
6.2. Roads ..................................................................................................................................... 32
6.2.1. Current Condition ......................................................................................................... 32
6.2.2. Routine Maintenance Plan ............................................................................................ 33
6.2.3. Renewal & Replacement Plan ....................................................................................... 36
6.2.4. Creation, Expansion and Upgrade Plan ......................................................................... 44
6.3. Kerbs ..................................................................................................................................... 45
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 Civil & Transport Infrastructure 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 infrastructure assets represent a vast investment over many generations that support modern living in the community. Millions of dollars are spent annually managing and maintaining the City’s infrastructure 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 infrastructure
- Engage the community to ensure the most appropriate infrastructure is provided to an agreed level of service that they can afford
- Adequately fund the renewal of identified infrastructure assets
- Understand and minimise whole of life costs for infrastructure through long term planning
- Continually improve our knowledge of the assets we manage
- Minimise risk through a co-ordinated approach to asset management

RCMB provides an extensive infrastructure and asset network to enable delivery of Council services in an effective and efficient manner.

Included in this plan are;

- Roads (sealed and unsealed)
- Footpaths
- Kerb & Gutter
- Bridges and Causeways
• Car Parks
• Signs and Street Furniture

Included in separate Asset Management Plans are:
• Stormwater
• Buildings
• Open Space

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 network of infrastructure 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 Civil and Transport Infrastructure 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) between 2 and 2.5 for its Civil and Transport Infrastructure network at all times. Details of the OCI are given in Section 6.

1.4.2. **Function**
RCMB’s intent is that our Civil and Transport Infrastructure network is maintained in partnership with neighbouring local government authorities, other levels of government and stakeholders to ensure a safe and functional transport network for the travelling public.

We need to ensure key functional objectives are met:
• To provide a transport network to agreed targets of safety and function.
• To provide and maintain infrastructure to community requirements within the resources available
• To manage traffic on Council’s road network to statutory requirements and community needs
1.4.3. Safety
RCMB will inspect all Civil and Transport Infrastructure 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 Civil and Transport Infrastructure 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.
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 Civil & Transport Infrastructure Asset Management Plan provides the framework to deliver optimum operation performance of the Council’s Civil and Transport Infrastructure assets at the lowest lifecycle cost and to agreed levels of service. For the purposes of this plan, Civil and Transport Infrastructure assets are:

- Roads (sealed and unsealed)
- Footpaths
- Kerb & Gutter
- Bridges and Causeways
- Car Parks
- Signs and Street Furniture
Other assets within the road reserve such as underground drainage, water supply and effluent disposal are excluded from this plan as they will be covered by separate asset management plans. Roads which are the responsibility of the State Government or are on private land are also excluded from this Plan.

The break-up of the civil & transport infrastructure assets that Council is responsible for is shown in Table 1.

As at 31 December 2013, the total Replacement Value of Council’s civil and transport infrastructure assets was $206,597,524.02.

<table>
<thead>
<tr>
<th>Asset category</th>
<th>Quantity</th>
<th>Replacement Value $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unsealed Sheeted</td>
<td>3,483,326.81m²</td>
<td>27,942,332.62</td>
</tr>
<tr>
<td>Formed</td>
<td>447,120.13m²</td>
<td>Not valued</td>
</tr>
<tr>
<td>Unformed</td>
<td>70,535.12m²</td>
<td>Not valued</td>
</tr>
<tr>
<td>Hotmix</td>
<td>203,850.43m²</td>
<td>3,361,356.00</td>
</tr>
<tr>
<td>Spray Seal</td>
<td>2,982,857.85m²</td>
<td>18,221,041.10</td>
</tr>
<tr>
<td>Pavement under seal</td>
<td>3,186,708.27m²</td>
<td>88,934,173.09</td>
</tr>
<tr>
<td>Kerbs</td>
<td>242,640.22m</td>
<td>41,455,539.03</td>
</tr>
<tr>
<td>Constructed Footpaths</td>
<td>84,858 m²</td>
<td>8,483,395.66</td>
</tr>
<tr>
<td>Scalp Footpaths</td>
<td>865,032 m²</td>
<td>5,605,406.93</td>
</tr>
<tr>
<td>Car Parks</td>
<td>55,832.49m²</td>
<td>1,879,831.47</td>
</tr>
<tr>
<td>Road Bridges</td>
<td>6</td>
<td>2,359,896.00</td>
</tr>
<tr>
<td>Pedestrian Bridges</td>
<td>18</td>
<td>1,902,360.00</td>
</tr>
<tr>
<td>Causeways</td>
<td>20</td>
<td>5,582,777.12</td>
</tr>
<tr>
<td>Signs</td>
<td>4708</td>
<td>869,415.00</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>$ 206,597,524.02</strong></td>
</tr>
</tbody>
</table>

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 Civil & Transport Infrastructure 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 a council’s strategic framework.
<table>
<thead>
<tr>
<th>Objectives</th>
<th>Strategies</th>
<th>Indicators</th>
</tr>
</thead>
</table>
| **GOAL 1: Economic**<br>To build on the strengths of the region and create competitive advantages and grow jobs. | 1.2.1 - Partner with Regional Development Australia (Murraylands and Riverland) to:  
- 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 | Number of Developments  
- Approvals in industrial zone  
- Number of Development Approvals - major developments  
- New Infrastructure projects - number/type/cost |
| **GOAL 2: Environmental**<br>To develop, protect and strengthen our natural and built environments | 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 | Maintaining a level of service the community can afford  
- Reduction in stormwater into the river  
- Amount (kilolitres) of mains water used to irrigate public open space |
| **GOAL 3: Social**<br>A healthy, safe and connected community that celebrates diversity, heritage and culture | 3.1.2 - Continue to develop and maintain parks, gardens, reserves and other open spaces in an economic and environmentally sustainable manner | Open Space strategy to be completed  
- % of land devoted to open space that is accessible to the public  
- Recreation and Sports Plan to be completed  
- Length of recreation trails planned designed and developed. |
| **GOAL 4: Organisation**<br>A progressive, responsive and innovative organisation that supports its customers whilst maintaining a high standard of governance and accountability | 4.4.1 - Improve and monitor organisational 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 | Number of service reviews completed  
- 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 Civil and Transport Infrastructure network and related assets.

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

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 Civil and Transport Infrastructure 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 Civil and Transport Infrastructure.
• 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:
  o Asset Management Policy
  o Asset Management Strategy
  o Governance and Management
  o Levels of Service
  o Data and Systems
  o Continuous Improvement Program
  o Evaluation of effectiveness

• Financial Planning and Reporting which incorporates:
  o Long-term Strategic Plan
  o Annual budget
  o Annual Financial Statements and Annual Report

• Criteria for Assessing Financial Sustainability:
  o 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.

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.

---

1 International Infrastructure Management Manual
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 Civil and Transport Infrastructure 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

To assist in the prioritisation of funding and response times, Council has an established hierarchy of importance for its Civil and Transport Infrastructure based on a road segment being adopted and the “Parent Asset”.

Use is made of the hierarchy in setting intervention levels and response times for repairing minor defects and attending to other issues with the road network.

Table 4 is an example of the Maintenance Hierarchy and how it is applied to intervention level and response time standards.

An ongoing review of the adopted hierarchy has been included as one of the Improvement Actions to be carried out under this Plan. This will ensure that the status of each road segment and where it sits within the hierarchy structure matches the Council’s and the region’s strategic transport plan.

<table>
<thead>
<tr>
<th>Maintenance Hierarchy</th>
<th>Road Hierarchy</th>
<th>Road Hierarchy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Rural Link</td>
<td>Provides direct linkage between significant population centres or regions. Typically carry high percentages of heavy vehicles. Generally a sealed surface but may have unsealed sections.</td>
</tr>
<tr>
<td>3</td>
<td>Rural Collector</td>
<td>Predominately local users and provides linkage to State or Rural Link roads. Provides access to Rural Minor or Rural Access roads. Generally unsealed but may be sealed.</td>
</tr>
<tr>
<td>4</td>
<td>Rural Minor</td>
<td>Provides access to Rural Link &amp; Rural Collector roads as well as access to adjoining properties. Little through traffic. Generally unsealed.</td>
</tr>
<tr>
<td>5</td>
<td>Rural Access</td>
<td>Provides access to properties only. Usually less than 5 properties and/or a no through road. Generally unsealed but may be formed gravel or natural surface.</td>
</tr>
<tr>
<td>6</td>
<td>Rural Track</td>
<td>Emergency access or movement of agricultural machinery. Unformed surface.</td>
</tr>
</tbody>
</table>
### Maintenance Hierarchy vs. Road Hierarchy

<table>
<thead>
<tr>
<th>Maintenance Hierarchy</th>
<th>Road Hierarchy</th>
<th>Road Hierarchy Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Urban Link</td>
<td>State roads providing for through traffic. Not under Council care.</td>
</tr>
<tr>
<td>3</td>
<td>Urban Collector</td>
<td>Provides links to State roads and between suburbs or residential/business nodes. Heavy vehicle use. Sealed road.</td>
</tr>
<tr>
<td>4</td>
<td>Urban Minor</td>
<td>Primarily provides access to residential or commercial premises. Has some through traffic. Generally sealed but may be unsealed.</td>
</tr>
<tr>
<td>5</td>
<td>Urban Access</td>
<td>Local access only, no through traffic. Typically Cul-de-sac, Court etc. Generally sealed but may be unsealed.</td>
</tr>
<tr>
<td>1</td>
<td>Urban Business</td>
<td>CBD. Heavy traffic concentrations and some freight/delivery vehicles. Includes ancillary services to State roads. Typically sealed kerb to kerb, may be Hotmix.</td>
</tr>
</tbody>
</table>

#### Table 4: Example of Road Maintenance Hierarchy

### 3.2. Community Expectations and Consultation

The Rural City of Murray Bridge will initially carry out extensive consultation sessions with Elected Members on its entire infrastructure 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 Civil and Transport Infrastructure 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.

### 3.3. 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 5.

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government Act, 1999</td>
<td>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.</td>
</tr>
<tr>
<td>Australian Accounting Standards</td>
<td>Prescribes requirements for recognition and depreciation of property, plant and equipment assets.</td>
</tr>
<tr>
<td>Commonwealth Disability Discrimination Act, 1992</td>
<td>The responsibilities and power of the Council in providing equitable access for a person with disability</td>
</tr>
<tr>
<td>Work Health and Safety Act, 2012</td>
<td>The responsibility of the Council to provide safe work practices and work site.</td>
</tr>
<tr>
<td>Work Health and Safety Regulation, 2012</td>
<td></td>
</tr>
</tbody>
</table>

#### Table 5: Key Legislative Requirements
3.4. **Current Levels of Service**

3.4.1. **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.

3.5. **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**

3.5.1. **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 Civil and Transport Infrastructure 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 Civil and Transport Infrastructure 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 road 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.

3.5.2. **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 road hierarchy. For example, inspections of urban roads are currently undertaken every 2 months, and every 3 months for rural roads.
Defects found on these inspections are risk assessed and programmed for rectification or used to recondition rate road segments in terms of local defects.

### 3.5.3. 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.

### 3.6. Community Levels of Service

Community Levels of Service communicate the philosophies of Council in relation to the management of the road network 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.

### 3.7. Shared Use of Road Reserves

Council is not the only organisation to have assets within the road reserve. The works carried out by utility/service authorities can have a major effect on Council’s road pavements as activities such as saw cutting and digging of trenches weakens the base layer.

Detailed engineering standards will be developed to ensure utilities and other third parties reinstate council’s Civil and Transport Infrastructure in a manner that does not affect its overall performance.

### 3.8. Desired Levels of Service

In general most Council 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 and Engineering Standards (Australian Standards)
- Economic feasibility
- Community requirements

Target groups for the consultative process are:

- Councillors
- Council staff
- RCMB community
- Industries 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 regions, environmental awareness, etc.

The key factors influencing the demand for Civil and Transport Infrastructure and changes to the existing road network in the Rural City of Murray Bridge are:

- Expansion of agriculture and associated industry
- 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. This population will accommodate the approximately 55 rural living and 250 residential 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 recreational facilities 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

Future demand and potential growth is considered ‘negligible’ and demand has been identified as very difficult to gauge as there is no specific township environment established at Monarto. It is considered premature to plan for residential development, although small scale residential development could be combined with the expanded zoo area. A future Development Plan Amendment has been identified as a high priority; however this will focus on expanding the Light Industry Zone and enhancing environmental and tourism assets.

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.

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. Jervois

Future demand and potential growth in Jervois 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 Civil and Transport Infrastructure Asset Management Plan are documented in Table 6.

<table>
<thead>
<tr>
<th>Technology Change</th>
<th>Effect on Service Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicle safety</td>
<td>Improved vehicle design and quality will mean that the road condition will become less important as the vehicles will be able to accommodate minor shape loss/deforations better.</td>
</tr>
<tr>
<td>Material quality and Technology</td>
<td>Material manufacturers are constantly developing new products to suit modern day applications to cope with increased traffic volumes, increased solar radiation and environmental cracking. These improvements may mean roads have a longer useful life and require less maintenance over their life.</td>
</tr>
<tr>
<td>Trenchless Technologies</td>
<td>By using trenchless methodologies, this will have a better impact on Council's assets as the soundness of the road pavements is not compromised when installing new services within the road reserve.</td>
</tr>
<tr>
<td>Recycled Materials</td>
<td>By exploring the option of using recycled materials, this will have a dual impact in terms of reduction in greenhouse gas emissions and reduction in initial asset construction costs, thereby enabling more assets to be renewed with the same allocation of annualised funds.</td>
</tr>
<tr>
<td>Pavement Stabilisation Technologies</td>
<td>New technology in pavement stabilisation could extend the life of the pavement and seal.</td>
</tr>
</tbody>
</table>

Table 6: Technology Changes that have a potential impact on Council's road 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.

Given the long life-cycle of road assets, the impact of this growth on future renewal costs is only likely to be material after ten years. For the purpose of completing this core Asset Management Plan, the impacts of these future costs are not considered to be highly significant and are excluded in developing forecasts of future operating and maintenance costs.

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 organisation’s 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 a 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

![Diagram of Council’s Risk Management Framework]

### 5.3. Risk Assessment

The key risk management criteria relating to Council’s Civil & Transport Infrastructure assets include:

- Corporate Governance
- Workers Health and Safety / Public Safety
- Environmental
- Financial Management
- Information Technology
- Infrastructure and Assets
- Legal
- Political
- Reputation (Goodwill)
- Service Delivery

See Table 7 for details about the different levels of risk that can occur for each criteria.
<table>
<thead>
<tr>
<th>Risk Categories</th>
<th>Consequences</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corporate Governance</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Negligible impact - impact can be managed through routine activities</td>
</tr>
<tr>
<td>Minor</td>
<td>Additional internal management efforts required to manage impact</td>
</tr>
<tr>
<td>Moderate</td>
<td>Minor impact of critical RCMB's corporate governance and accountability strategic objectives. Significant adjustment to manage impact</td>
</tr>
<tr>
<td>Major</td>
<td>Major impact on RCMB's ability to achieve its corporate governance and accountability strategic objectives. Impact cannot be managed within RCMB framework</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Significant impact on RCMB's ability to achieve its corporate, governance and accountability strategic objectives.</td>
</tr>
<tr>
<td><strong>Workers Health and Safety / Public Safety</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Staff issue cause negligible impact. Injuries requiring first aid or incidence of non-treatment injuries</td>
</tr>
<tr>
<td>Minor</td>
<td>General morale and attitude problems. Injury involving lost time in the workplace.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Widespread staff issues cause failure to deliver several minor strategic objectives and recoverable failure of day to day service. Hospital admission for 1-2 days</td>
</tr>
<tr>
<td>Major</td>
<td>Staff issues cause widespread failure to deliver essential services. Temporary disability or hospital admission for &lt;3 days</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Death or permanent disability or long term hospital admissions</td>
</tr>
<tr>
<td><strong>Environmental</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Minor adverse event that can be remedied immediately.</td>
</tr>
<tr>
<td>Minor</td>
<td>Isolated instances of environmental damage requiring effort to fix in the short term</td>
</tr>
<tr>
<td>Moderate</td>
<td>Adverse events that cause widespread damage but reversible in the short to medium term. May incur cautionary notice of infringement notice.</td>
</tr>
<tr>
<td>Major</td>
<td>Significant adverse event causing widespread damage which may be reversed through appropriate remedial action in the medium term. Penalties may apply.</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Major adverse environmental event requiring continual long term remedial action. Significant penalties may apply.</td>
</tr>
<tr>
<td><strong>Financial Management</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Financial impact (expenditure or revenue) &lt;$20,000</td>
</tr>
<tr>
<td>Minor</td>
<td>Financial impact (expenditure or revenue) between $20-$250k</td>
</tr>
<tr>
<td>Moderate</td>
<td>Financial impact (expenditure or revenue) between $250-$500k</td>
</tr>
<tr>
<td>Major</td>
<td>Financial impact (expenditure or revenue) between $500-$1 million</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Financial impact (expenditure or revenue) between $1-$2 million</td>
</tr>
<tr>
<td><strong>Information Technology</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Interruption to a service not requiring any further remedial action and with minimal impact on customers.</td>
</tr>
<tr>
<td>Minor</td>
<td>Interruption to a service requiring further remedial action and with moderate impact on customers.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Interruption to core business function or essential service for up to 48 hours</td>
</tr>
<tr>
<td>Major</td>
<td>Interruption to core business function or essential service for 2-7 days</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Interruption to core business function or essential service for more than 7 days</td>
</tr>
<tr>
<td><strong>Infrastructure and Assets</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Some damage where repairs are required however facility or infrastructure is still operational.</td>
</tr>
<tr>
<td>Minor</td>
<td>Short term loss or damage where repairs required to allow the infrastructure to remain operational using existing internal resources.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Short to medium term loss of key assets and infrastructure where repairs required allowing the infrastructure to remain operational. Cost outside of budget allocation.</td>
</tr>
<tr>
<td>Major</td>
<td>Widespread, short term to medium term loss of key assets and infrastructure. Where repairs required allowing the infrastructure to remain operational. Cost significant and outside of budget allocation.</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Widespread, long term loss of substantial key assets and infrastructure. Where infrastructure requires total rebuild or replacement.</td>
</tr>
<tr>
<td><strong>Legal</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Dispute resolved through internal process or expertise.</td>
</tr>
<tr>
<td>Minor</td>
<td>Dispute resolved through legal advice</td>
</tr>
<tr>
<td>Moderate</td>
<td>Corporation directed to undertake specific activities to remedy breaches in legislation that may require the involvement of legal firms.</td>
</tr>
<tr>
<td>Major</td>
<td>Deliberate breach or gross negligence / formal investigations from third party (Ministerial Involvement, Ombudsman or ICAC).</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Major breach of legislation resulting in major corporation penalties, fines, ICAC investigation that may result in imprisonment of corporation staff, or class action</td>
</tr>
<tr>
<td><strong>Political</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Political activity that requires minor changes in operations</td>
</tr>
<tr>
<td>Minor</td>
<td>Political activity that requires changes in operations</td>
</tr>
<tr>
<td>Moderate</td>
<td>Political activity that requires changes in operations with budget and resource implications.</td>
</tr>
<tr>
<td>Major</td>
<td>Political activity that requires changes in operations with significant ongoing budget or resource implications.</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Political activity that results in imparable damage.</td>
</tr>
<tr>
<td><strong>Reputation “Goodwill”</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Issue may result in a number of adverse local complaints</td>
</tr>
<tr>
<td>Minor</td>
<td>Issue may attract limited media coverage</td>
</tr>
<tr>
<td>Moderate</td>
<td>Issue may attract regional and state media coverage through various mediums with minimal consequence</td>
</tr>
<tr>
<td>Major</td>
<td>Issue may attract significant State and National media coverage with some effect on Council’s reputation</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Prolonged adverse media attention. Staff and Elected members forced to resign.</td>
</tr>
<tr>
<td><strong>Service Delivery</strong></td>
<td></td>
</tr>
<tr>
<td>Insignificant</td>
<td>Interruption to a service not requiring any further remedial action and with minimal impact on customers.</td>
</tr>
<tr>
<td>Minor</td>
<td>Interruption to a service requiring further remedial action and with moderate impact on customers.</td>
</tr>
<tr>
<td>Moderate</td>
<td>Interruption to core business function or essential service with significant customer impact for up to 48 hours</td>
</tr>
<tr>
<td>Major</td>
<td>Interruption to core business function or essential service for 2-7 days</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Interruption to core business function or essential service for more than 7 days</td>
</tr>
</tbody>
</table>

Table 7: 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 8 is to be used as a guide.
<table>
<thead>
<tr>
<th>Rating Name</th>
<th>Rating Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remote</td>
<td>May occur only in exceptional circumstances</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Could occur at some time but is considered unlikely to occur at any time in the future</td>
</tr>
<tr>
<td>Possible</td>
<td>Might occur at some time in the future</td>
</tr>
<tr>
<td>Likely</td>
<td>Probably occur in most circumstances</td>
</tr>
<tr>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances</td>
</tr>
</tbody>
</table>

Table 8: 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 9.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insignificant</td>
<td>Effect is minimal</td>
</tr>
<tr>
<td>Minor</td>
<td>Event requires minor levels of resource and input for easy remediation</td>
</tr>
<tr>
<td>Moderate</td>
<td>Some objectives affected</td>
</tr>
<tr>
<td>Major</td>
<td>Some important objectives affected or cannot be achieved</td>
</tr>
<tr>
<td>Catastrophic</td>
<td>Disaster with potential to lead to collapse or having a profound effect</td>
</tr>
</tbody>
</table>

Table 9: 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.

5.10. CONTROL MEASURES

A control can be defined as an existing process, policy, device, practice or other action that acts to minimize 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

• **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 Civil & Transport Infrastructure network at the agreed levels of service while optimising life cycle costs.

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

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 infrastructure Asset Register. It contains a listing of all Civil and Transport Infrastructure Assets and has the ability to include the following details for each:

- Year of construction
- Pavement and surface type
- Road width and length
- Hierarchy classification
- Most recent valuation
- Most recent condition rating
- Traffic count data
6.1. BACKGROUND DATA

6.1.1. Asset Details

The assets covered by this Asset Management Plan are shown in Table 10. The quantities of these assets are shown in Table 11.

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealed Roads</td>
<td>Urban and rural roads with a bitumen surface typically spray seal, asphalt or recycled bitumen.</td>
</tr>
<tr>
<td>Unsealed Roads²</td>
<td>Roads formed and surfaced with imported granular material. Unsealed roads are mostly rural roads with a limited quantity of urban roads.</td>
</tr>
<tr>
<td>Kerbs</td>
<td>Typically constructed from concrete on the edge of sealed roads to formalise the traffic corridor.</td>
</tr>
<tr>
<td>Footpaths</td>
<td>Constructed footpaths are typically concrete or brick paved. There is also an extensive network of scalp footpaths. Landscaped and untreated footpaths are excluded from this plan.</td>
</tr>
<tr>
<td>Car Parks</td>
<td>On street parking, Off street parking, parking infrastructure.</td>
</tr>
<tr>
<td>Bridges and Causeways</td>
<td>There are six vehicular bridges in the Local Government Area. Three of the bridges are owned and managed in partnership with the District Council of Mt Barker. Council also owns 18 Pedestrian Bridges and 20 Causeways.</td>
</tr>
<tr>
<td>Signs and Street Furniture</td>
<td>Includes over 4700 road signs plus traffic islands, guard rails, posts etc.</td>
</tr>
</tbody>
</table>

Table 10: Assets Covered by this Asset Management Plan

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Length</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealed Roads</td>
<td>425km</td>
<td>3,186,708 m²</td>
</tr>
<tr>
<td>Unsealed Roads</td>
<td>567 km</td>
<td>4,000,982 m²</td>
</tr>
<tr>
<td>Kerbs</td>
<td>243 km</td>
<td></td>
</tr>
<tr>
<td>Constructed Footpaths</td>
<td>50 km</td>
<td>84,858 m²</td>
</tr>
<tr>
<td>Scalp Footpaths</td>
<td>176 km</td>
<td>865,032 m²</td>
</tr>
<tr>
<td>Car Parks</td>
<td></td>
<td>55,779 m²</td>
</tr>
<tr>
<td>Vehicular Bridges</td>
<td>0.313 m</td>
<td>691 m²</td>
</tr>
<tr>
<td>Pedestrian Bridges</td>
<td>0.552 m</td>
<td>761 m²</td>
</tr>
<tr>
<td>Causeways</td>
<td>0.362 m</td>
<td>2214 m²</td>
</tr>
<tr>
<td>Signs and Street Furniture: Traffic Islands</td>
<td></td>
<td>3140 m²</td>
</tr>
</tbody>
</table>

Table 11: Quantities of Council Civil and Transport Infrastructure Assets²

² Excludes private roads constructed by property owners or others and other roads not constructed by Council.
6.1.2. **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 a large group of assets like Council’s Civil and Transport Infrastructure network, it is necessary to break the assets down into manageable elements. While it may be convenient to consider each individual road as a separate asset, there can be too much variance along a single road for this to be practical. Good practice therefore is to break each road into segments. There are a variety of factors that determine the desirable length of each segment and these include type of construction, road topography, traffic volumes and intersecting roads.

Council’s Sealed Road network has been broken into 1,273 segments of an average length of 334 metres and the Unsealed Road network has been broken into 484 segments of an average length of 1,172 metres.

With 1,757 road segments to assess, Council requires a rigorous Condition Assessment process that is repeatable and reliable. Most importantly, it must allow for comparisons between similar segments 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 practice of starting with 1 for new or near new and the values increasing to 5 as the asset condition deteriorates. Table 12 provides a general description of asset condition for each score in the scheme that is currently used.

<table>
<thead>
<tr>
<th>Condition Score</th>
<th>Condition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>New or Near New</td>
<td>Asset is New or Near New with minimal signs of wear or use.</td>
</tr>
<tr>
<td>2</td>
<td>Good</td>
<td>Asset has limited signs of wear and use that only require routine maintenance.</td>
</tr>
<tr>
<td>3</td>
<td>Fair</td>
<td>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.</td>
</tr>
<tr>
<td>4</td>
<td>Poor</td>
<td>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.</td>
</tr>
<tr>
<td>5</td>
<td>Very Poor</td>
<td>Asset is near the end of its useful life and only provides a severely degraded service. It requires replacement in the near future.</td>
</tr>
<tr>
<td></td>
<td>End of Life</td>
<td>Asset can no longer provide the service it is intended to provide. It is beyond practical renewal and requires replacement.</td>
</tr>
</tbody>
</table>

Table 12: Council’s Condition Scoring Scheme

---

The Condition Scoring Schemes used to assess the condition of Council’s Civil and Transport Infrastructure network are to be detailed in Council’s Data Collection Manuals. A separate manual will be developed by Council Officers for each asset category and 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 Figure 8.

The last condition assessments for Civil and Transport Infrastructure assets are detailed in Table 13:

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Date of Assessment</th>
<th>Assessor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealed Roads</td>
<td>March 2012</td>
<td>ARRB</td>
</tr>
<tr>
<td>Unsealed Roads</td>
<td>February 2013</td>
<td>Council</td>
</tr>
<tr>
<td>Kerbs</td>
<td>March 2013</td>
<td>Council</td>
</tr>
<tr>
<td>Footpaths</td>
<td>May 2013</td>
<td>Council</td>
</tr>
<tr>
<td>Car Parks</td>
<td>May 2013</td>
<td>Council</td>
</tr>
<tr>
<td>Vehicular Bridges</td>
<td>February 2013</td>
<td>GHD</td>
</tr>
<tr>
<td>Pedestrian Bridges</td>
<td>June 2008</td>
<td>Maloney Field Services</td>
</tr>
<tr>
<td>Causeways</td>
<td>June 2013</td>
<td>Council</td>
</tr>
<tr>
<td>Signs</td>
<td>January 2013</td>
<td>Council</td>
</tr>
</tbody>
</table>

Table 13: Most Recent Condition Assessments

Barring natural disasters, the condition of Civil and Transport Infrastructure 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 this Plan, Council should be planning for new condition surveys of its Civil and Transport Infrastructure assets to be completed on a rolling 3-5 year program. This is included as an Improvement Action to be carried out under this Plan.
Linear Cracking

Linear cracking can have many different geometries (Transverse, Longitudinal, Diagonal) but there should be little if any interconnection between individual cracks. Generally indicates that the pavement may have contracted or moved, but not failed. The difference between dormant and active cracks should be recognised. Active cracks have opened up recently, have sharp clean edges, and should not have any dirt or sediment lying in them. Conversely, dormant cracks were created some time ago, have more rounded edges, and have been partially filled with sediment. Dormant cracks are considered a lower priority for treatment, as further deterioration is unlikely.

<table>
<thead>
<tr>
<th>Rating</th>
<th>Considered to be</th>
<th>Extent Affected</th>
<th>Severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nil</td>
<td>Cracking affecting &gt;0 &amp; &lt;1% of segment area</td>
<td>Slight (S) - Cracks displaying a predominant width less than 2mm.</td>
</tr>
<tr>
<td>2</td>
<td>Negligible</td>
<td>Cracking affecting &gt;1% &amp; &lt;2% of segment area</td>
<td>Medium (M) - Cracks displaying a predominant width between 2mm and 5 mm.</td>
</tr>
<tr>
<td>3</td>
<td>Minor</td>
<td>Cracking affecting &gt;2% &amp; &lt;5% of segment area</td>
<td>Extreme (X) - Cracks displaying a predominant width greater than 5 mm.</td>
</tr>
<tr>
<td>4</td>
<td>Moderate</td>
<td>Cracking affecting &gt;5% &amp; &lt;10% of segment area</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Extreme</td>
<td>Cracking affecting &gt;20% of segment area</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8: Example of a Sealed Road Data Collection Manual
6.1.3. **Infrastructure Work Expenditure Categories**

Historically, expenditure on infrastructure 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 14.

<table>
<thead>
<tr>
<th>Expenditure Type</th>
<th>Description</th>
<th>Typical Work</th>
<th>Effect on Life-cycle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital - Renewal</td>
<td>Renews a degraded asset back to New or Near New condition.</td>
<td>Reconstruction of an existing road.</td>
<td>Resets the asset back to the start of its life-cycle path.</td>
</tr>
<tr>
<td>Capital - Upgrade</td>
<td>Improves the functionality of an asset.</td>
<td>Sealing an unsealed road.</td>
<td>Resets the asset back to the start of its life-cycle path.</td>
</tr>
<tr>
<td>Capital - Expansion</td>
<td>Improves the capacity of an asset.</td>
<td>Adding an additional traffic lane.</td>
<td>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.</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Minor repairs.</td>
<td>Repairing potholes.</td>
<td>Keeps asset on its expected life-cycle path.</td>
</tr>
</tbody>
</table>

Table 14: Infrastructure Work Expenditure Categories
6.2. ROADS

6.2.1. Current Condition

Figure 9 shows the breakup of the Overall Condition scores for Council’s Sealed Road network. As can be seen, generally the condition of the Sealed Road network is very good with almost 20% of the road area being assessed as New or Near New condition and almost 75% as being Good.

While this result could be construed as meaning no work is required, detailed analysis shows that some road components currently require renewal. As discussed in Section 6.2.3, timely renewal of failing road components is vital if asset life and value are to be maximised.

Figure 10 presents a similar breakup but this time for Council’s Unsealed Road network. This shows that overall the unsealed network is in reasonable condition with just over 30% in New or Near New condition and 32% as Fair. However, 24% of unsealed roads are in Very Poor condition and require renewal in the near future.

While at first glance this may seem to be an acceptable position, the life-cycle of an unsealed road is much shorter than that of a sealed road. This, when taken in conjunction with the much larger unsealed road network, means that forecasting the future work and budget requirement for the unsealed road network is as important, if not more so.
6.2.2. Routine Maintenance Plan

As noted in Table 14, 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 road network. Figure 11 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 current maintenance budget for roads is approximately $815,000 per annum. This figure includes operational costs such as filling pot holes, street sweeping and patrol grading.

The actual expenditure on road maintenance has been estimated from an assessment of financial reports and the figures are shown in Table 15.

<table>
<thead>
<tr>
<th>Maintenance Group</th>
<th>Estimated Annual Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealed Roads</td>
<td>$302,000</td>
</tr>
<tr>
<td>Unsealed Roads</td>
<td>$513,000</td>
</tr>
</tbody>
</table>

Table 15: Estimated Annual Maintenance Expenditure for Roads
For Strategic Asset Management purposes, it would be advantageous for Council’s financial accounting system to separately record maintenance expenditures on Sealed and Unsealed Roads and to have the ability to see the expenditure on individual roads. This will enable Council to identify roads 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 11: Sample Maintenance Inspection Flow Chart
6.2.3. Renewal & Replacement Plan

6.2.3.1. Sealed Roads

At their simplest, sealed roads comprise three components:

- **Seal**: this is the top layer of the road which is driven on by the traffic. While from a road user perspective it has the role of providing a skid resistant driving surface, from an asset management perspective it also has an important role of providing an impervious barrier to protect the Pavement from water. The life of the Seal is dependent on many factors including traffic volumes, environment and type of material. For accounting purposes, Council has adopted 20 years as the life of its Spray Seals and 30 years as the life of Hotmix seals.

- **Pavement**: this is the structural load carrying base of the road. It is vital that the pavement has the strength to take and dissipate the load of the vehicles on the road or else longitudinal rutting and other defects will occur. Pavement failure is accelerated as the Seal allows water to soak into the Pavement. For accounting purposes, Council has adopted 70 years as the life of Pavements on Urban Roads and 80 years for Pavements on Rural Roads.

- **Formation**: this is the excavated natural ground and embankments that provide a firm base on which the Pavement is constructed. By their nature, Formations are considered to have an indefinite life and thus for accounting purposes Council does not depreciate its Formations.

Sound asset management dictates that road seals are renewed before they have deteriorated to the point that pavement damage is occurring due to water entry through the seal. The practice of RCMB is to do that. As a consequence, Council has had little historical need to undertake pavement renewal works.

While past practice has been successful for Council, keeping the status quo does not guarantee ideal outcomes into the future. As the road network ages, 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 in Council’s long-term financial planning, myPredictor modelling software has been used to generate 10-year forecasts for Council’s sealed roads. The software uses a wide range of inputs including details of road construction, current road condition, expected life-cycles, renewal intervention practices and current budgets, both Renewal and Maintenance. The prime outputs from myPredictor are forecasts of changes in road condition and the corresponding budget requirements.

Four scenarios have been considered:

- **Scenario 1**: Capital Renewal Expenditure of $0.9 million
- **Scenario 2**: Capital Renewal Expenditure of $1.2 million
- **Scenario 3**: Capital Renewal Expenditure of $1.5 million
- **Scenario 4**: Capital Renewal Expenditure of $1.9 million

Figures 12 to 15 show the forecast changes in sealed roads condition over the next 10 years for the four scenarios.
Figure 12: Forecast Changes in Average Condition of Council’s Sealed Roads for Capital Expenditure of $0.9 million

Figure 13: Forecast Changes in Average Condition of Council’s Sealed Roads for Capital Expenditure of $1.2 million
Figure 14: Forecast Changes in Average Condition of Council’s Sealed Roads for Capital Expenditure of $1.5 million

Figure 15: Forecast Changes in Average Condition of Council’s Sealed Roads for Capital Expenditure of $1.9 million
The initial impression given by these forecasts is that Council is underspending on its sealed roads renewal and that the overall condition is being allowed to deteriorate. However, it must be kept in mind that the current condition of the road network is very good as it is relatively new.

If the community is going to gain the maximum value from the investment in its sealed road network, the overall condition must be allowed to fall to around 2. It is worth noting that most Councils with a mature road network aim for an overall condition of 3 as their Level of Service.

The Capital Renewal funding required for the four scenarios are set out in Table 16.

In Scenario 1 the overall condition of the sealed roads falls to around 2.3 after 10 years. This overall condition level is lower than Council is aiming for at this time and almost out of the acceptable limit of condition 2 – 2.5. The funding for Scenario 1 is therefore a little low.

Scenario 2 allows the overall condition to fall to condition 2, indicating sufficient funding.

While the additional expenditure of Scenario 3 will result in a lesser fall in condition to Scenario 2 it is only a minor benefit for a considerable increase in expenditure.

Scenario 4 maintains the average condition of roads at their current level. As can be seen this requires far greater expenditure than Scenario 2.

While there may be a risk of some community dissatisfaction if the overall condition of roads is allowed to fall to condition 2, this is unlikely as they will still be in Very Good condition. Therefore it is unnecessary to incur the expense of Scenario 4 to maintain the roads at their current overall condition.

**Recommendation:** The annual Capital Renewal budget for Sealed Roads should be set at $1.2 million for the life of this plan.
<table>
<thead>
<tr>
<th>Year</th>
<th>Capital Expenditure of $0.9 million</th>
<th>Capital Expenditure of $1.2 million</th>
<th>Capital Expenditure of $1.5 million</th>
<th>Capital Expenditure of $1.9 million</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Capital</td>
<td>Maintenance</td>
<td>Total</td>
<td>Capital</td>
</tr>
<tr>
<td>1</td>
<td>898,018.18</td>
<td>282,515.20</td>
<td>1,182,515.21</td>
<td>1,199,936.21</td>
</tr>
<tr>
<td>2</td>
<td>898,424.34</td>
<td>314,404.54</td>
<td>1,214,828.88</td>
<td>1,199,492.63</td>
</tr>
<tr>
<td>3</td>
<td>898,989.11</td>
<td>344,358.78</td>
<td>1,244,347.89</td>
<td>1,190,915.27</td>
</tr>
<tr>
<td>4</td>
<td>897,742.78</td>
<td>374,770.61</td>
<td>1,274,513.39</td>
<td>1,199,902.25</td>
</tr>
<tr>
<td>5</td>
<td>898,159.26</td>
<td>410,372.39</td>
<td>1,310,531.65</td>
<td>1,198,560.39</td>
</tr>
<tr>
<td>6</td>
<td>898,658.20</td>
<td>441,668.99</td>
<td>1,341,327.19</td>
<td>1,199,473.52</td>
</tr>
<tr>
<td>7</td>
<td>899,763.99</td>
<td>491,714.83</td>
<td>1,393,478.82</td>
<td>1,200,006.04</td>
</tr>
<tr>
<td>8</td>
<td>897,904.50</td>
<td>541,787.31</td>
<td>1,441,691.81</td>
<td>1,199,280.57</td>
</tr>
<tr>
<td>9</td>
<td>899,380.61</td>
<td>592,453.27</td>
<td>1,491,833.88</td>
<td>1,199,480.15</td>
</tr>
<tr>
<td>10</td>
<td>898,922.53</td>
<td>638,958.99</td>
<td>1,538,881.52</td>
<td>1,198,905.52</td>
</tr>
<tr>
<td>Ave</td>
<td>899,576.34</td>
<td>443,500.49</td>
<td>1,343,076.83</td>
<td>1,199,207.75</td>
</tr>
<tr>
<td>Total</td>
<td>8,985,763.50</td>
<td>4,435,004.91</td>
<td>13,435,068.41</td>
<td>11,992,077.50</td>
</tr>
</tbody>
</table>

Table 16: Sealed Roads Renewal Funding Options
6.2.3.2. Unsealed Roads

Unsealed roads comprise two components:

Pavement

Formation

These two components are not unlike the corresponding components in a sealed road except that, without a seal, the pavement of an unsealed road is much more susceptible to damage and has a shorter life. For accounting purposes Council has adopted the useful lives listed in Table 17 for its unsealed roads.

<table>
<thead>
<tr>
<th>Road Hierarchy</th>
<th>Useful Life (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Link</td>
<td>25</td>
</tr>
<tr>
<td>Rural Collector</td>
<td>30</td>
</tr>
<tr>
<td>Rural Minor</td>
<td>40</td>
</tr>
<tr>
<td>Rural Access</td>
<td>45</td>
</tr>
<tr>
<td>Rural Track</td>
<td>50</td>
</tr>
<tr>
<td>Urban Minor</td>
<td>30</td>
</tr>
<tr>
<td>Urban Access</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 17: Useful Lives if Unsealed Roads

Sound asset management dictates that unsealed road pavements are renewed before they have deteriorated to the point where damage is occurring in the formation. The practice of RCMB is to do that.

The myPredictor modelling software has also been applied to Council’s unsealed roads. Two scenarios have been considered:

**Scenario 1:** Capital Renewal Expenditure of $600,000

**Scenario 2:** Capital Renewal Expenditure of $900,000

Figures 16 and 17 show the forecast change in overall condition of the unsealed roads over the next 10 years for the two scenarios.

The forecast for Scenario 1 shows a fall in condition to greater than 2.5. This is outside Council’s current estimate of an acceptable level of service. The core reason for this result is that insufficient renewal expenditure has been allowed for in the forecast.

Scenario 2 forecasts a relatively stable overall condition of around 2 with only a slight reduction in overall condition near the end of the 10 year period, but still within acceptable limits.

The funding levels required for these three scenarios are set out in Table 18.

Although Scenario 2 shows an expenditure of almost $3 million more over the 10 years than Scenario 1, it is clear from the overall condition forecasts that this expenditure is required if the unsealed roads are to be maintained in an acceptable condition.

**Recommendation:** The annual Capital Renewal budget for Unsealed Roads should be set at $900,000 for the life of this plan.
**Figure 16:** Forecast Changes in Average Condition of Council’s Unsealed Roads for Capital Expenditure of $600,000

**Figure 17:** Forecast Changes in Average Condition of Council’s Unsealed Roads for Capital Expenditure of $900,000
<table>
<thead>
<tr>
<th>Year</th>
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<th>Capital Expenditure of $900,000</th>
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<td>145,387.43</td>
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<tr>
<td>Total</td>
<td>5,988,808.35</td>
<td>1,453,874.26</td>
</tr>
</tbody>
</table>

Table 18: Unsealed Roads Renewal Funding Options
6.2.4.  Creation, Expansion and Upgrade Plan

6.2.4.1.  Sealed Roads

The construction of new sealed roads occurs as a response to the development of new land and changed land use. The expansion and upgrading of existing sealed roads occurs as a response to changes in traffic levels and vehicle loads. The triggers for these changes are driven by changes in future demand.

As discussed in Section 4, future versions of this plan will properly consider the impact of such changes. Until that time, Council will continue to monitor its sealed road network and initiate creation, expansion and upgrade projects when the needs are recognised.

6.2.4.2.  Unsealed Roads

Upgrading unsealed roads to sealed roads has considerable benefit for the community. The roads are more durable, ride quality is improved and annual maintenance is decreased.

Due to limited funding resources, Council is dependent on grant funding for upgrade works to proceed. Until grant funding becomes available, Council’s unsealed road upgrading will be held in abeyance.
6.3. Kerbs

6.3.1. Current Condition

Figure 18 shows the breakup of the Overall Condition scores for Council’s Kerb network. As can be seen, generally the condition of the kerb network is very good with over 55% of the kerb length being assessed as in Good condition and almost 20% being in New or Near New condition.

While this result could be construed as meaning no work is required, detailed analysis shows that some road components currently require renewal. As discussed in Section 6.3.3, timely renewal of failing kerb components is vital if asset life and value are to be maximised.

![Kerb Condition Diagram](image)

**Figure 18: Condition of Council’s Kerb Network – 2013**

6.3.2. Routine Maintenance Plan

As noted in Table 14, 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 its own staff to carry out routine maintenance on its kerb network. Figure 11 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 current kerb maintenance budget is estimated to be $80,000 per annum. This figure includes operational costs such as repairs to small sections of kerb damaged by tree roots causing lifting or sinking due to pavement movement.

6.3.3. Renewal & Replacement Plan

Council has adopted a useful life of 80 years for kerbs. Sound asset management dictates that kerbs 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 kerb network ages, 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.

The majority of Council’s kerb network is far less than 80 years old. This means that no intensive renewal of the current kerb network is required during the term of this Asset Management Plan provided regular maintenance is maintained. However, Council should be aware of, and plan for, renewal works in the future. It is estimated that a budget of $500,000 per year will be required to renew kerbs once many of them begin to reach the end of their useful lives.

Kerbs may also be replaced as part of the road reconstruction program if they are becoming old or are in poor condition. Any current kerb renewal costs are included in the cost of reconstructing the road.

To assist with Council’s long term financial planning Council will use myPredictor modelling software to produce a more accurate 10-year forecast of changes in the average condition of kerbs and required renewal funding. 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. This is included as an Action in the Improvement Plan. As a minimum Council should be funding the depreciation of kerb assets to maintain the level of service.

6.3.4. Creation, Expansion and Upgrade Plan

The construction of new kerbs occurs as a response to the development of new land and changed land use. The expansion and upgrading of existing kerbs occurs as a response to changes in traffic levels and vehicle loads. The triggers for these changes are driven by changes in future demand.

As discussed in Section 4, future versions of this plan will properly consider the impact of such changes. Until that time, Council will continue to monitor its kerb network and initiate creation, expansion and upgrade projects when the needs are recognised.
6.4. Footpaths

6.4.1. Current Condition

Figure 19 shows the breakup of the Overall Condition scores for Council’s Constructed Footpath network. Generally the condition of the Constructed Footpath network is very good with almost 60% of the footpath area being assessed as New or Near New condition and almost 30% in Good condition.

While this result could be construed as meaning no work is required, detailed analysis shows that some footpath components currently require renewal. As discussed in Section 6.4.3, timely renewal of failing footpath components is vital if asset life and value are to be maximised.

Figure 20 presents a similar breakup but this time for Council’s Scalp Footpath network. This shows that overall the scalp network is in fair to good condition with almost 50% of the scalp footpath area assessed as being in Fair condition and almost 30% as Good.

While at first glance this may seem to be a comfortable position, the life-cycle of a scalp footpath is much shorter than that of a constructed footpath. This, when taken in conjunction with the much larger scalp footpath network, means that forecasting the future work and budget requirement for the scalp footpath network is as important, if not more so.
6.4.2. Routine Maintenance Plan

As noted in Table 14, 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 its own staff to carry out routine maintenance on its footpaths. Figure 11 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 current footpath maintenance budget is estimated to be $180,000.00 to 200,000.00 per annum. This figure includes both sealed and unsealed footpaths. Operational costs for sealed footpaths includes repairing cracks and small sections damaged by tree roots lifting the footpath, damage caused by heavy vehicles driving over them or service trenches cutting through them. Maintenance on unsealed footpaths includes backfilling of material eroded by storm weather, topping up after long term erosion or vehicle damage and weed control. Footpath maintenance costs vary due to environmental circumstances, e.g. a wet year requires extra weed control, excess heat may cause lifting in concrete, or storm damage.

For Strategic Asset Management purposes, it would be advantageous for Council’s financial accounting system to separately record maintenance expenditures on constructed and
scalp footpaths. A review of the cost centres used for recording asset expenditure is included as an Improvement Action to be carried out under this Plan.

6.4.3. **Renewal & Replacement Plan**

The useful life of a footpath depends on its construction material. Council has adopted useful lives of 50 years for brick paved and concrete footpaths, 30 years for Hotmix, 20 years for bitumen and 15 years for Scalp footpaths.

Sound asset management dictates that footpaths 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 footpath network ages, 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.

Much of Council’s constructed footpath network is much younger than its useful life. This means that no intensive renewal of the current constructed footpath network is required during the term of this Asset Management Plan provided regular maintenance is maintained. However, Council should be aware of, and plan for, renewal works in the future.

Council conducts a program of rehabilitation of scalp footpaths each year. This program costs an estimated $50,000 per year.

To assist with Council’s long term financial planning Council will use myPredictor modelling software to produce a more accurate 10-year forecast of changes in the average condition of footpaths and required renewal funding. 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. This is included as an Action in the Improvement Plan. As a minimum Council should be funding the depreciation of footpath assets to maintain the level of service.

6.4.4. **Creation, Expansion and Upgrade Plan**

6.4.4.1. **Constructed Footpaths**

The construction of new constructed footpaths may occur as a response to the development of new land and changed land use or as a response to changes in pedestrian traffic levels. For example, the development of Gifford Hill and Newbridge may result in a significant increase of pedestrian traffic near schools and shops.

As discussed in Section 4, future versions of this plan will properly consider the impact of such changes. Until that time, Council will continue to monitor its footpath network and initiate creation, expansion and upgrade projects when the needs are recognised.

6.4.4.2. **Scalp Footpaths**

In previous years Council has undertaken the upgrade of scalp footpaths to new constructed footpaths with the aim of having a constructed footpath on one side of every urban road. Upgrading scalp footpaths to constructed footpaths has benefit to the community as the surface is smoother and more durable and annual maintenance is decreased. In recent years this program has been suspended due to financial restraints. Until funding becomes available this program is in abeyance.
6.5. Car Parks

6.5.1. Current Condition

Figure 21 shows the breakup of the Overall Condition scores for Council’s Sealed Car Parks. Generally the condition of the Sealed Car Parks is very good with over 50% of the car park area being assessed as New or Near New condition and over 20% as being Good.

While this result could be construed as meaning no work is required, detailed analysis shows that some car parks currently require major capital works to return them to an acceptable condition. As discussed in Section 6.5.3, timely renewal of failing car park components is vital if asset life and value are to be maximised.

Figure 22 presents a similar breakup but this time for Council’s Unsealed Car Parks. This shows that overall the unsealed network is in very good condition with just over 25% in New or Near New condition and 33% as Good.

While at first glance this may seem to be a comfortable position, the life-cycle of an unsealed car park is much shorter than that of a sealed car park. This means that forecasting the future work and budget requirement for the unsealed car park network is just as important.

![Sealed Car Park Condition](image)

**Figure 21: Condition of Council’s Sealed Car Parks - 2013**
6.5.2. **Routine Maintenance Plan**

As noted in Table 14, 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 generally uses its own staff to carry out routine maintenance on its car parks. Figure 11 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 current car park maintenance budget is estimated to be $1,100.00 per annum. This figure includes operational costs such as filling pot holes.

6.5.3. **Renewal & Replacement Plan**

6.5.3.1. **Sealed Car Parks**

At their simplest, sealed car parks comprise three components:

**Seal:** this is the top layer of the car park which is driven on by the traffic. While from a car park user perspective it has the role of providing a skid resistant driving surface, from an asset management perspective it also has an important role of providing an impervious barrier to protect the Pavement from water. The life of the Seal is dependent on many factors including traffic volumes, environment and type of material. For accounting purposes,
Council has adopted 20 years as the life of its Spray Seals and 30 years as the life of Hotmix seals.

**Pavement:** this is the structural load carrying base of the car park. It is vital that the pavement has the strength to take and dissipate the load of the vehicles on the car park or else longitudinal rutting and other defects will occur. Pavement failure is accelerated as the Seal allows water to soak into the Pavement. For accounting purposes, Council has adopted 70 years as the life of Car Park Pavements.

**Formation:** this is the excavated natural ground and embankments that provide a firm base on which the Pavement is constructed. By their nature, Formations are considered to have an indefinite life and thus for accounting purposes Council does not depreciate its Formations.

Sound asset management dictates that car park seals are renewed before they have deteriorated to the point that pavement damage is occurring due to water entry through the seal. The practice of RCMB is to do that. As a consequence, Council has had little historical need to undertake pavement renewal works.

While past practice has been successful for Council, keeping the status quo does not guarantee ideal outcomes into the future. As the car park network ages, 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.

Currently there are no sealed car parks requiring immediate renewal or replacement, however those in Poor condition will be monitored through regular inspections and action taken when appropriate.

To assist with Council’s long term financial planning Council will use myPredictor modelling software to produce a more accurate 10-year forecast of changes in the average condition of sealed car parks and required renewal funding. 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. This is included as an Action in the Improvement Plan. As a minimum Council should be funding the depreciation of sealed car park assets to maintain the level of service.

### 6.5.3.2. Unsealed Car Parks

Unsealed car parks comprise two components:

- **Pavement**
- **Formation**

These two components are not unlike the corresponding components in a sealed car park except that, without a seal, the pavement of an unsealed car park is much more susceptible to damage and has a shorter life. For accounting purposes Council has adopted a useful life of 30 years for its unsealed car parks.

Sound asset management dictates that unsealed road pavements are renewed before they have deteriorated to the point where damage is occurring in the formation. The practice of RCMB is to do that.

Currently there are no unsealed car parks requiring immediate renewal or replacement. Council will monitor the condition of these car parks through regular inspections and take action if needed.

To assist with Council’s long term financial planning Council will use myPredictor modelling software to produce a more accurate 10-year forecast of changes in the average condition of unsealed car parks and required renewal funding. 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. This is included as an Action in the Improvement Plan. As a minimum Council should be funding the depreciation of unsealed car park assets to maintain the level of service.
6.5.4. Creation, Expansion and Upgrade Plan

6.5.4.1. Sealed Car Parks

The construction of new sealed car parks occurs as a response to the development of new land and changed land use. The triggers for these changes are driven by changes in future demand.

As discussed in Section 4, future versions of this plan will properly consider the impact of such changes. Until that time, Council will continue to monitor its sealed car parks and initiate creation, expansion and upgrade projects when the needs are recognised.

6.5.4.2. Unsealed Car Parks

Upgrading unsealed car parks to sealed car parks has considerable benefit for the community. The car parks are more durable, ride quality is improved and annual maintenance is decreased.

Council drawn up plans to upgrade the car parks at Woodlane Reserve and the Murray Bridge Swimming Centre, however due to limited funding resources it is not known when sealing of the car parks will occur.
6.6. BRIDGES

6.6.1. Current Condition

Figure 23 shows the breakup of the Overall Condition scores for Council’s Vehicular Bridges. As can be seen, generally the condition of the Vehicular Bridges is good with four of the six bridges (72%) being assessed as in Good condition and the remaining 2 bridges as being in Fair condition.

While this result could be construed as meaning no work is required, detailed analysis shows that at least one vehicular bridge currently requires further assessment. As discussed in Section 6.6.3, timely renewal of failing bridge components is vital if asset life and value are to be maximised.

Figure 24 shows the breakup of the Overall Condition scores for Council’s Pedestrian Bridges. As can be seen, generally the condition of the Pedestrian Bridges is very good with over 25% of the bridges being assessed as New or Near New condition and over 50% as being in Good condition.

Figure 25 shows the breakup of the Overall Condition scores for Council’s Causeways. As can be seen, generally the condition of the Causeways is fair to good with 55% of them being assessed as in Good condition and over 25% as being in Fair condition. However, over 15% of the Causeways are assessed as being in Poor condition and require major capital works to return the asset to an acceptable condition.

Figure 23: Condition of Council’s Vehicular Bridges - 2013
Pedestrian Bridge Condition

20.87% New or Near New
52.93% Good
26.20% Fair

Figure 24: Condition of Council’s Pedestrian Bridges - 2013

Causeway Condition

3.52% New or Near New
15.77% Good
25.71% Fair
55.00% Poor

Figure 25: Condition of Council’s Causeways - 2013
### 6.6.2. Routine Maintenance Plan

As noted in Table 14 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 deteriorate; 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 bridges, depending on the risk and skills required. Figure 11 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.

An estimate of Council’s current annual bridge maintenance budget is shown in Table 19. This figure includes operational costs such as cleaning decks and scuppers, inspections and crack sealing. For pedestrian bridges operational costs include risk inspections of the decking, repairing decking, painting etc.

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<th>Maintenance Group</th>
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<td>Road Bridges</td>
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<td>Pedestrian Bridges</td>
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<tr>
<td>Causeways</td>
<td>$0</td>
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</table>

*Table 19: Estimated Annual Maintenance Expenditure for Footpaths*

A Level 2 Inspection of the Road Bridges was undertaken in 2013. The report recommends some maintenance work and further investigation to Level 3 for one of the bridges.

### 6.6.3. Renewal & Replacement Plan

Vehicular Bridges are comprised of many components and many materials, and the useful life of each component is different, varying from 20 to 100 years.

For Pedestrian Bridges, Council has adopted a useful life of 50 for bridges constructed from timber or recycled plastic, and 100 years for bridges constructed from modwood & galvanised steel or concrete.

For Causeways Council has adopted a useful life of 100 years.

Sound asset management dictates that bridge components 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 asset ages, 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 myPredictor modelling software to produce a more accurate 10-year forecast of changes in the average condition of bridges and required renewal funding. 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. This is included as an Action in the Improvement Plan. As a minimum Council should be funding the depreciation of bridge assets to maintain the level of service.
The majority of Council's bridges and causeways are in Good condition and well below their useful lives. This means that no intensive renewal of bridges or causeways is required during the term of this Asset Management Plan provided regular maintenance is maintained. However, Council should be aware of, and plan for, renewal works in the future.

6.6.4. Creation, Expansion and Upgrade Plan

The construction of new vehicular bridges or causeways occurs as a response to the need for one being identified. Currently no such needs are evident and consequently there are no plans to construct new Vehicular Bridges or Causeways.

New pedestrian bridges may be constructed for recreational purposes. Due to its limited funding resources, Council is dependent on grant funding for any new programs to proceed.
6.7. **Signs and Street Furniture**

6.7.1. **Current Condition**

Figure 26 shows the breakup of the Overall Condition scores for Council's Signs. As can be seen, the condition of the Signs is spread from New to Near New to Very Poor. Almost 30% of the signs are assessed as New or Near New condition and almost 30% as being in Fair condition. However just over 10% of the signs are in Very Poor condition and need replacement in the near future.

![Sign Condition Diagram]

**Figure 26: Condition of Council's Signs - 2013**

6.7.2. **Routine Maintenance Plan**

As noted in Table 14, 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.

Council uses its own staff to carry out routine maintenance on its signs and street furniture. Figure 11 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.

Maintenance on signs occurs when signs are damaged through vandalism or vehicular accidents, or when signs go missing. Such events vary from year to year and it is difficult to estimate how much funding is required to repair or replace these signs. Council's current sign maintenance budget is estimated to be $122,000.00 per annum.
6.7.3. Renewal & Replacement Plan

Council has adopted a useful life of 12 years for signs. Sound asset management dictates that signs are renewed before they have deteriorated to the point that they are unserviceable. The practice of RCMB is to do that.

Council’s current renewal programme replaces approximately 12% of the signs in worst condition each year. This prevents the deterioration of signs to condition 5 or worse and maintains the overall condition of the sign network at current or better condition level. This is undertaken as an operational cost as the cost of a sign is below Council’s capitalisation threshold specified in Council’s Asset Accounting Policy.

Council has over 4,710 signs, therefore approximately 400 need to be replaced each year. At an average cost per sign of $55.00 the funding required for Signs Renewal & Replacement is $22,000.00 per year plus labour and vehicle costs.

6.7.4. Creation, Expansion and Upgrade Plan

The installation of new signs occurs as a response to the need for one being identified. This need may arise from the construction of new sub-divisions or to changes in traffic levels or land use. The triggers for these changes are driven by changes in future demand.

As discussed in Section 4, future versions of this plan will properly consider the impact of such changes. Until that time, Council will continue to monitor its sign network and initiate the installation of new signs 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 Civil and Transport Infrastructure 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

In early 2013 Council undertook a revaluation of the Civil and Transport Infrastructure assets. The results are shown in Table 20.

<table>
<thead>
<tr>
<th>Asset Category</th>
<th>Balance after Revaluation</th>
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<tbody>
<tr>
<td>Roads</td>
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<tr>
<td>Kerbs</td>
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<tr>
<td>Footpaths</td>
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<td>Car Parks</td>
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<tr>
<td>Bridges</td>
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<tr>
<td>Signs</td>
<td>$531,869.70</td>
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<td>TOTAL</td>
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</tr>
</tbody>
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Table 20: Civil Infrastructure Written Down Values from 2013 Revaluation

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 except pedestrian bridges, where the age of the bridge was used.

Depreciation using condition was calculated by:

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

Depreciation using age was calculated by:

\[
\text{Accumulated Depreciation} = (CRC - \text{Residual Value}) \times \left( \frac{\text{Age}}{\text{Useful Life}} \right)
\]

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

While the process 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.

Moving to using condition to determine remaining useful life for pedestrian bridges has been included as an Improvement Action to be carried out under this Plan.

Documentation of financial procedures has also 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 Civil and Transport Infrastructure Network are set out in Table 21. 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 road 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.
<table>
<thead>
<tr>
<th>Year</th>
<th>Sealed Roads</th>
<th>Unsealed Roads</th>
<th>Kerbs</th>
<th>Footpaths</th>
<th>Sealed Footpaths</th>
<th>Scalp Footpaths</th>
<th>Car Parks</th>
<th>Road Bridges</th>
<th>Pedestrian Bridges</th>
<th>Causeways</th>
<th>Signs &amp; Street Furniture</th>
<th>Total Maint. $</th>
<th>Total Capital $</th>
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</table>

Table 21: 10 Year Funding Requirements for Council’s Civil and Transport Infrastructure Assets

NB: Capital Values for Kerbs, Sealed Footpaths, Car Parks, Vehicular Bridges, Pedestrian Bridges and Causeways are taken from the Total Annual Depreciation Forecast in the 2013 Valuation Report from Tonkin Consulting.
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 22 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 well 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 22.

<table>
<thead>
<tr>
<th>Task No.</th>
<th>Task</th>
<th>Responsibility</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Review existing Roads Hierarchy.</td>
<td>E&amp;A Business Unit</td>
<td>Sept 14</td>
</tr>
<tr>
<td>2</td>
<td>Investigate costs and options for researching community satisfaction in relation to Council’s road network.</td>
<td>E&amp;A Business Unit</td>
<td>Dec 14</td>
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<tr>
<td>3</td>
<td>Determine community satisfaction in relation to Council’s road network.</td>
<td>E&amp;A Business Unit</td>
<td>Sept 15</td>
</tr>
<tr>
<td>4</td>
<td>Review draft Desired Level of Service targets for Council’s road network using Councillor and staff input.</td>
<td>E&amp;A Business Unit</td>
<td>Oct 14</td>
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<tr>
<td>5</td>
<td>Finalise Desired Level of Service targets following community consultation.</td>
<td>E&amp;A Business Unit</td>
<td>Apr 15</td>
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<tr>
<td>6</td>
<td>Define Community-based Service Levels with appropriate performance measures and standards.</td>
<td>E&amp;A Business Unit</td>
<td>Dec 14</td>
</tr>
<tr>
<td>7</td>
<td>Define Technical Levels of Service with appropriate performance measures and standards that support delivering the Community-based Service Levels.</td>
<td>E&amp;A Business Unit</td>
<td>June 15</td>
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<tr>
<td>8</td>
<td>Develop Condition Assessment Manuals for each asset category.</td>
<td>E&amp;A Business Unit</td>
<td>July 15</td>
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<tr>
<td>9</td>
<td>Develop a rolling 3-5 year program for condition assessments.</td>
<td>E&amp;A Business Unit</td>
<td>Jun 14</td>
</tr>
<tr>
<td>10</td>
<td>Undertake a new condition survey of Council’s sealed road network.</td>
<td>E&amp;A Business Unit</td>
<td>July 14</td>
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<tr>
<td>11</td>
<td>Undertake a new condition survey of Council’s unsealed road network.</td>
<td>E&amp;A Business Unit</td>
<td>Aug 14</td>
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<tr>
<td>12</td>
<td>Prepare new forecasts of Capital Renewal funding requirements for Roads using revised input data.</td>
<td>E&amp;A Business Unit</td>
<td>Feb 15</td>
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<tr>
<td>13</td>
<td>Review segmentation criteria for Roads, Kerbs and Footpaths.</td>
<td>E&amp;A Business Unit</td>
<td>Sept 14</td>
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<tr>
<td>14</td>
<td>Develop Business Rules for each asset category including but not limited to:</td>
<td>E&amp;A Business Unit</td>
<td>Apr 15</td>
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<tr>
<td></td>
<td>• Asset information guidelines</td>
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<td>• Logic for OCI</td>
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<td>• Segmentation and componentisation rules</td>
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<td>• Asset hierarchy</td>
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<td>Due Date</td>
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<td>15</td>
<td>Develop Procedure and Manuals for Asset Defect Inspection for each asset category.</td>
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<tr>
<td>16</td>
<td>Develop Procedure and Manuals for Asset Hazard Inspection for each asset category.</td>
<td>E&amp;A Business Unit</td>
<td>Feb 16</td>
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</table>
| 18  | Review and Document Financial Procedures for each asset category, including but not limited to:  
- Capitalisation  
- Depreciation  
- Useful Lives  
- Unit Rates  
- Recording WIP and Capital Expenditure | E&A Business Unit      | Feb 15   |
| 19  | Develop procedures for sign off or hand over of assets from internal council works, developers, gifted assets and other. | E&A Business Unit      | Oct 14   |
| 20  | Produce myPredictor models for Kerbs, Footpaths and other asset categories if appropriate. | E&A Business Unit      | July 14  |
| 21  | In line with Fair Value changes, move to using asset condition for determining remaining useful life for Pedestrian Bridges depreciation calculations. | E&A Business Unit      | July 14  |
| 22  | Review and update Civil and Transport Infrastructure Asset Management Plan | E&A Business Unit      | May 15   |

**Table 22: Recommended Improvement Actions**
9. REFERENCES

Local Government Act 1999, South Australia
International Infrastructure Maintenance Manual