

KEMPSEY SHIRE COUNCIL

**ASSET MANAGEMENT PLAN – GENERAL 2013**

**Procedure 3.4.3**

Policy Goal	3.4	Asset Management Policy
Policy Sub Group	3.4.3	Asset Management Plan – General 2013
Version	1	
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# KEMPSEY SHIRE COUNCIL





## “Community Infrastructure”<sup>1</sup> Asset Management Plan



Scenario 1 – Version 1.0 - February 2014 – Adopted 14/2/14 (2014.22)

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<sup>1</sup> Includes all infrastructure assets, excluding water supply & sewerage

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## 1. EXECUTIVE SUMMARY

### Context

Kempsey Shire is located on the Macleay Valley Coast, approximately midway between Sydney and Brisbane on the NSW Mid North Coast. Kempsey is the major centre surrounded by the smaller townships of South West Rocks, Crescent Head, Frederickton, Gladstone, Smithtown, Willawarrin, Hat Head and Bellbrook. The Shire is serviced by 589km of sealed roads, 578km of unsealed roads, 168 bridges, 98 km of storm water pipes, and utilizes 364 buildings.

The major issue facing Kempsey is that the current funding cannot meet the infrastructure needs so there is an infrastructure deficit which is contributing to an infrastructure backlog. This gradual consumption of infrastructure is now generating additional liabilities for the Council. Some asset groups such as stormwater drainage and buildings have no planned renewal budget in the near future. The lack of investment to renew the assets will have long term implications and will cause the stormwater drainage and building assets to deteriorate over this period. This is not a sustainable position for Council or the community.

### Transport Service

The transport network comprises:

- 589km of sealed roads
- 578km of unsealed roads
- 168 bridges (concrete and timber)
- 62km of footpaths
- 156km of kerb and gutter

These road infrastructure assets have a replacement value of \$830.2 million (as at 30 June 2013).

### Stormwater Drainage Service

The stormwater network comprises:

- 98km of pipes
- 764 headwall
- 3,657 pits
- 184 rural culverts

These infrastructure assets have a replacement value of \$75.7 million (as at 30 June 2013).

### Flood Mitigation Service

The flood mitigation network comprises:

- 175 gates
- 55 flood drains
- 46 levees and rock walls

These infrastructure assets have a replacement value of \$30.3 million (as at 30 June 2013).

### Building Service

The building portfolio comprises 364 buildings in total.

These infrastructure assets have a replacement value of \$51.6 million (as at 30 June 2013 and excludes land).

The remaining asset groups are covered in more detail in each lifecycle management plan in Chapter 5 and consist of:

- Guardrails (17km) - \$4.7 million
- Bus Shelters (35) - \$0.2 million
- Car parking (14) - \$4.1 million
- Parks (various parks & gardens, various sporting fields & 9 cemeteries) - \$5.2 million
- Airport (excluding buildings) - \$0.5 million
- Waste Management (1 Waste Management Centre & 3 Transfer Stations) - \$1.9 million

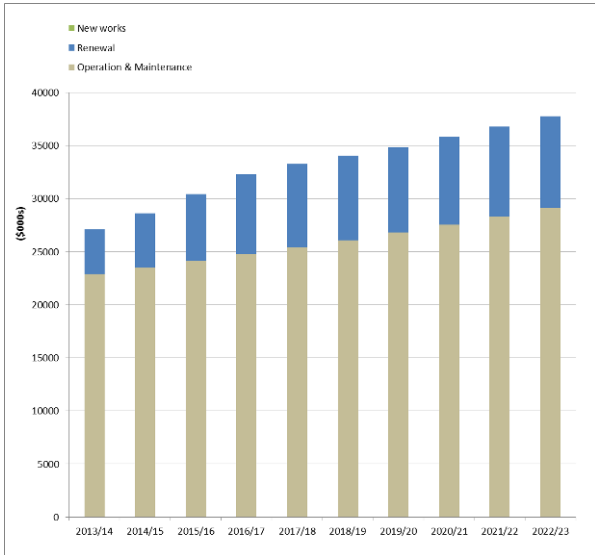
### What Does It Cost?

#### Roads

The projected outlays necessary to provide the road services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period.

Council modelling shows that approximately \$17 million is required per annum for both sealed and unsealed roads for renewals. Council's Long Term Financial Plan (LTFP) had allocated approximately \$7 million per annum for the next ten years. This results in a shortfall gap of approximately \$10 million in renewals for both sealed and unsealed roads. This results in the road network suffering a gradual deterioration over the next ten years due to lack of financial resources. This level of investment is an improvement on historical investment by the Council and reflects the allocation of previous SRV income and future projections into asset renewals (mainly roads).

The LTFP funding available for this period is \$70 million or an average of \$7 million per year, which is 32.50% of capital expenditure required to renew or replace the assets as they wear out. Projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the LTFP are shown in the graph below.



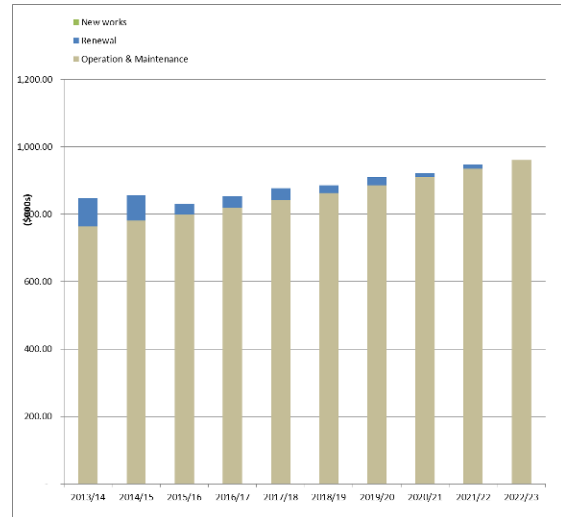
**Figure 1.1 - Roads ten year projections as per draft LTFP (as at 18 October 2013)**

**Stormwater Drainage**

The projected outlays necessary to provide the stormwater services covered by this AM Plan includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period.

The actual asset renewal needs are \$760,000 per annum averaged over 20 years and there is no planned budget to cater for this renewal. This means that the stormwater infrastructural backlog is not being addressed through a planned renewal programme. The condition of this asset group will continue to decline.

In other words, Asset Sustainability Ratio is 0%. Projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan are shown in the graph below.



**Figure 1.2 - Stormwater drainage ten year projections as per draft LTFP (as at 18 October 2013)**

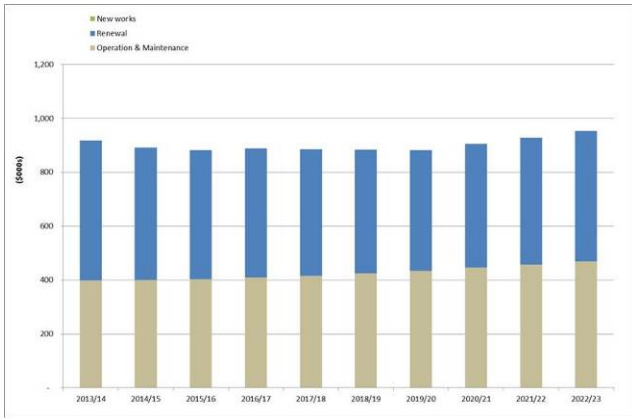
**Flood Mitigation**

The projected outlays necessary to provide the services covered by this AM Plan include operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period.

The actual asset renewal needs are \$371,000 per annum averaged over 20 years and the planned renewal budget amounts to \$400,000 per annum. This shows that there is currently no backlog gap. However this is based on a simple age based approach which will be refined as the 2012 condition data is analysed. Previous experience with this asset group indicates that the current level of funding is not sustaining the condition/effectiveness of the infrastructure to function as it was intended during flood events.

Estimated available funding for the LTFP period is \$4.3 million or \$430,000 on average per year. This highlights 124.74% of the assets stock being renewed or replaced as stock wears out within the next 10 years. This also incorporates assisting in clearing some of the accumulated backlogs to provide a sustainable service. Projected expenditure required to provide services in this AM Plan compared with the Long Term Financial Plan is shown in the graph below.





**Figure 1.3 - Flood mitigation ten year projections as per draft LTFP (as at 18 October 2013)**

### Buildings

The projected outlays necessary to provide the services covered by this AM Plan includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period.

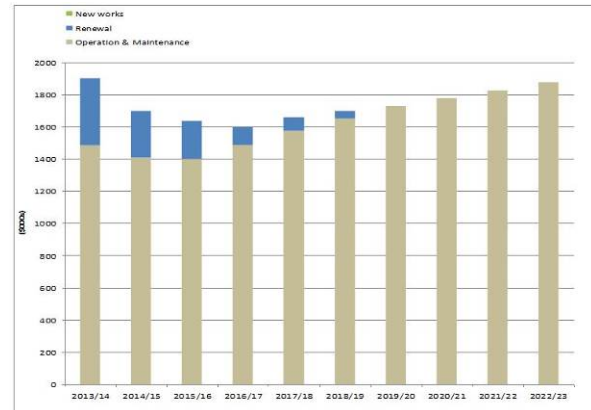
The revaluation model shows that approximately \$1.67 million per annum is required to maintain the building assets. The planned renewal expenditure amounts to \$7,250 per year for the next 10 years. The shortfall of funding is \$1.6 million and this deficit will have long term implications on the use of these assets. Failure to address this situation over the short to medium term will result in the building assets deteriorating, potentially to the point where the buildings can no longer be utilised for their intended purpose. This situation is unrealistic and will need to be analysed further for future AM Plan revisions.

Key actions in Council’s Delivery Program are;

- to strategically review the utilisation of building assets;
- reducing the level of existing assets;
- seek opportunities to increase utilisation; and
- look for opportunities to partner with community groups in operating and maintaining existing assets.

Estimated available renewal funding for the LTFP period is \$72,500 or \$7,250 on average per year. This is 0.47% of the required renewal funding to

provide a sustainable service. Projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan is shown in the graph below.



**Figure 1.4 - Buildings ten year projections as per draft LTFP (as at 18 October 2013)**

### What we will do

We plan to provide **road services** for the following:

- Operation, maintenance, renewal and upgrade of sealed & unsealed roads to meet service levels set in annual budgets;
- 5.9 km per year of sealed road renewals within the 10 year planning period;
- 38.5 km per year of unsealed roads gravel re-sheeted within the 10 year planning period;
- Replacement of 2-3 timber bridges per year on average over the 10 year planning period.

We plan to provide **stormwater drainage** for the following:

- Operation and maintenance of stormwater drainage to meet service levels set in annual budgets, (no planned renewal budget allocated).

We plan to provide **flood mitigation services** for the following:

- Operation, maintenance, renewal and upgrade of flood mitigation assets to meet service levels set in annual budgets;
- Refurbish a minimum of 2 gates per year within the 10 year planning period;

- Clean vegetation and debris from approximately 20% of the floodgates each year;
- Maintain the system ready for use at any time.

We plan to provide **building services** for the following:

- Operation and maintenance of buildings to meet service levels set in annual budgets, (no planned renewal budget allocated).

### What we cannot do

We do **not** have enough funding to provide all services at the desired levels of service (LOS) or provide new services. Works and services that cannot be provided under present funding levels include:

- Planned renewal for stormwater drainage assets;
- Planned renewal for building assets;
- Planned replacement of timber bridges, (prior to some of them being subjected to load limits);
- Planned renewal of kerb & gutter and footpath sections that have failed;
- Planned renewal of car parking assets;
- Planned renewal or upgrades to parks and sporting fields;

### Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. Note that the full major risks are detailed in each lifecycle asset plan in Section 5. We have identified the major risks as:

- Temporary road closures resulting in a reduction in LOS for road users;
- Overall asset condition decreases due to lack of basic maintenance and limited renewal programs;
- Unexpected failure of critical assets;
- Structural bridge damage;
- Potential health risks from poorly maintained buildings;
- Injury to playground users;

- Prosecuted or fined due to non-compliant with EPA Licence for waste management centre;
- Flooding of properties, farms, roads, and town centres from levee failure;

We will endeavour to manage these risks within available funding by:

- The review of flood mitigation controls;
- Determining renewal priorities for each asset group and across asset groups;
- Identifying and documenting critical assets, monitoring their conditions, conducting investigations and developing life cycle management processes;
- Detailed inspections of all bridges to identify defects and poor condition assets;
- Implement programs to remove asbestos from buildings, review building usage and long term sustainability including disposals;
- Site investigations, review playground renewal programme; develop facility rationalisation plan;
- Formal review of existing landfill management plan; Formal review of inspection plan;
- Undertake full geotechnical assessments of levees;

### Confidence Levels

This AM Plan is based on a medium level of confidence in the available information.

### The Next Steps

The actions resulting from this asset management plan are:

- Develop sound operational budgets based on first principles and asset needs for the major asset groups;
- To identify life cycle cost of assets and allow calculation of the sustainability index;
- Analyse the preliminary roads condition survey and understand deterioration rates with 2008 & 2013 results;
- Undertake a condition survey of the kerb and gutter asset group as an input into the renewal programme and valuation;
- Refine capital expenditure to reflect road upgrades for better long term planning;

- Refine the basic road renewal modelling developed for the 2013 AM Plan. Work towards condition based predictive modelling using the 2013 condition data as a key input;
- Develop a roads age profile by centrally recording all road capital works;
- Segregate the planned and unplanned maintenance costs for better long term planning;
- Develop a formal building asset rationalisation plan to proactively manage the portfolio and disposal of any surplus assets;
- Compile and analyse recent bridge inspections and continue to implement a program of structural inspections and assessments for at risk structures;
- Complete physical condition inspection of stormwater assets using CCTV. Develop robust renewal projections based on condition profile. Input the resulting planned renewal requirement for this asset group;
- Complete building condition assessment and analyse identified defects.

### **Questions you may have**

#### **What is this plan about?**

This AM Plan covers the community infrastructure assets that serve the Kempsey Shire community's infrastructure needs. These assets include roads, bridges, footpaths, stormwater drainage, flood mitigation, buildings and parks throughout the area, enabling both people and commerce to go about their daily business throughout the Shire.

#### **What is an Asset Management Plan?**

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

An AM Plan details information about infrastructure assets including actions required to provide an agreed level of service in the most cost effective manner. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services.

#### **Why is there a funding shortfall?**

Most of the organisation's transport network was constructed by developers and from government grants, often provided and accepted without consideration of ongoing operations, maintenance and replacement needs.

Many of these assets are approaching the later years of their life and require replacement. The services from the assets are decreasing and maintenance costs are increasing.

Our present funding levels are insufficient to continue to provide existing services at current levels in the medium term.

#### **What options do we have?**

Resolving the funding shortfall involves several steps:

1. Improving asset knowledge so that data accurately records the asset inventory, how assets are performing and when assets are not able to provide the required service levels;
2. Improving our efficiency in operating, maintaining, renewing and replacing existing assets to optimise life cycle costs;
3. Identifying and managing risks associated with providing services from infrastructure;
4. Making trade-offs between service levels and costs to ensure that the community receives the best return from infrastructure;
5. Identifying assets surplus to needs for disposal in order to make savings in future operations and maintenance costs;
6. Consulting with the community to ensure that transport, stormwater drainage, flood mitigation, buildings and parks services and their associated costs meet community needs and are affordable;
7. Developing partnerships with other bodies where available to provide services;
8. Seeking additional funding from governments and other bodies to better reflect a 'whole of government' funding approach to infrastructure services.

#### **What happens if we don't manage the shortfall?**

It is likely that we will have to reduce service levels in some areas, unless new sources of revenue are found. For buildings, the service level

reduction may include some building closures due to safety issues as a result of not renewing assets in a planned and timely manner. For roads, the service level reduction may result in increased and further pavement deterioration.



***Example of a failed road pavement and damaged kerb and gutter***

### **What can we do?**

We can develop options, costs and priorities for future transport, stormwater drainage, flood mitigation, buildings, and parks services. We can also consult with the community to plan future services to match the community service needs with their ability to pay for services, together with maximising community benefits against costs.

### **What can you do?**

We will be pleased to consider your thoughts on the issues raised in this AM Plan and suggestions on how we may change or reduce the mix of infrastructure and/or services to ensure that the appropriate level of service can be provided to the community within available funding.

Kempsey Shire Council is embarking on a Creative Communities initiative where Council partners with the individuals and groups within our community to get involved in “place making” in their area. It is often reflected that the contents of a house make it a home not it’s external structure. The same can be said with our community infrastructure. Your willingness to be involved with Council, either physically or through the expression of your opinion, will

improve our area and achieve better outcomes for our community.

Achieving sustainability in infrastructure and service provision is not just about raising more rate revenue for Council; it is going to take an integrated approach in challenging what we do, and how we do it. It is up to everyone to become part of our solution.

## 2. INTRODUCTION

### 2.1 Background

This Asset Management Plan (AM Plan) is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding needed to provide the required levels of service over a 10 year planning period. This AM Plan is in alliance with Council's Long Term Financial Plan (LTFP).

The AM Plan follows the format for AM Plans recommended in Section 4.2.6 of the International Infrastructure Management Manual<sup>2</sup>.

The AM Plan is to be read in conjunction with the organisation's Asset Management Policy, Asset Management Strategy and the following associated planning documents:

- Macleay Valley 2036 Community Strategic Plan (June 2013)
- Kempsey Shire Council Annual Report 2012/13
- Kempsey Shire Council Annual Report 2011/12
- Kempsey Shire Council *DRAFT* LTFP (October 2013)
- Kempsey Shire Council Delivery Program 2013 to 2017 and Operating Plan 2013/14

The community infrastructure assets covered by this AM Plan are shown in Table 2.1.1 below. These assets are used to provide transport, public recreation, drainage, flood mitigation and public buildings/facilities to the community.

**Table 2.1.1: Assets covered by this Plan**

Asset category	Quantity	Replacement Value (June 2013)
<b>Roads</b>	<b>1,167 km</b>	<b>\$745,141,256</b>
Sealed	589 km	\$506,200,834
Unsealed	578 km	\$238,940,422
<b>Bridges</b>	<b>168</b>	<b>\$61,589,252</b>
Concrete	39	\$33,804,031
Timber	129	\$27,785,221
<b>Rural culverts</b>	<b>184</b>	<b>\$14,413,705</b>
<b>Footpaths &amp; Cycleways</b>	<b>62 km</b>	<b>\$6,793,105</b>
<b>Kerb and gutter</b>	<b>156 km</b>	<b>\$16,753,019</b>
<b>Guardrails</b>	<b>17km</b>	<b>\$4,742,059</b>
<b>Bus shelters</b>	<b>36</b>	<b>\$236,327</b>
<b>Car parking</b>	<b>14 (as at 2011)</b>	<b>\$4,172,287</b>
<b>Stormwater Drainage</b>	<b>Various Items</b>	<b>\$61,290,567</b>
Pits	3,657	\$8,900,923
Pipes	98.4 km	\$51,464,735
Head Walls	764	\$924,909
<b>Flood Mitigation</b>	<b>326 Items</b>	<b>\$30,312,145</b>

<sup>2</sup> IPWEA, 2011, Sec 4.2.6, Example of an Asset Management Plan Structure, pp 4 | 24 – 27.

Asset category	Quantity	Replacement Value (June 2013)
Gates	175	\$10,055,395
Flood Drains	55	\$2,220,997
Levees and rock walls	46	\$15,373,735
Timber Bridges	50	\$2,662,018
<b>Buildings</b>	<b>129</b>	<b>\$26,656,015</b>
<b>Parks</b>	<b>As shown below</b>	<b>\$32,793,777</b>
Buildings (including Tourist Parks)	293	\$24,343,988
Land Improvement - Parks & Recreation	various	\$5,343,881
Land Improvement – Tourist Parks	various	\$2,848,823
Land Improvement - Cemeteries	9	\$257,085
<b>Airports (excluding buildings)</b>	<b>1</b>	<b>\$507,720</b>
<b>Waste management</b>	<b>1 Waste Management Centre, 3 Transfer Stations and other associated buildings</b>	<b>\$2,544,494</b>
<b>TOTAL</b>		<b>\$1,007,945,728</b> (as at June 2013)

Source: Quantities from draft Annual Report (7 November 2013) and 2013 Asset Valuation (July 2013)

\* Note that flood mitigation timber bridges located within private property (32 No.) are no longer considered as Council assets and will be written off in the next asset revaluation.

Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.1.2 below.

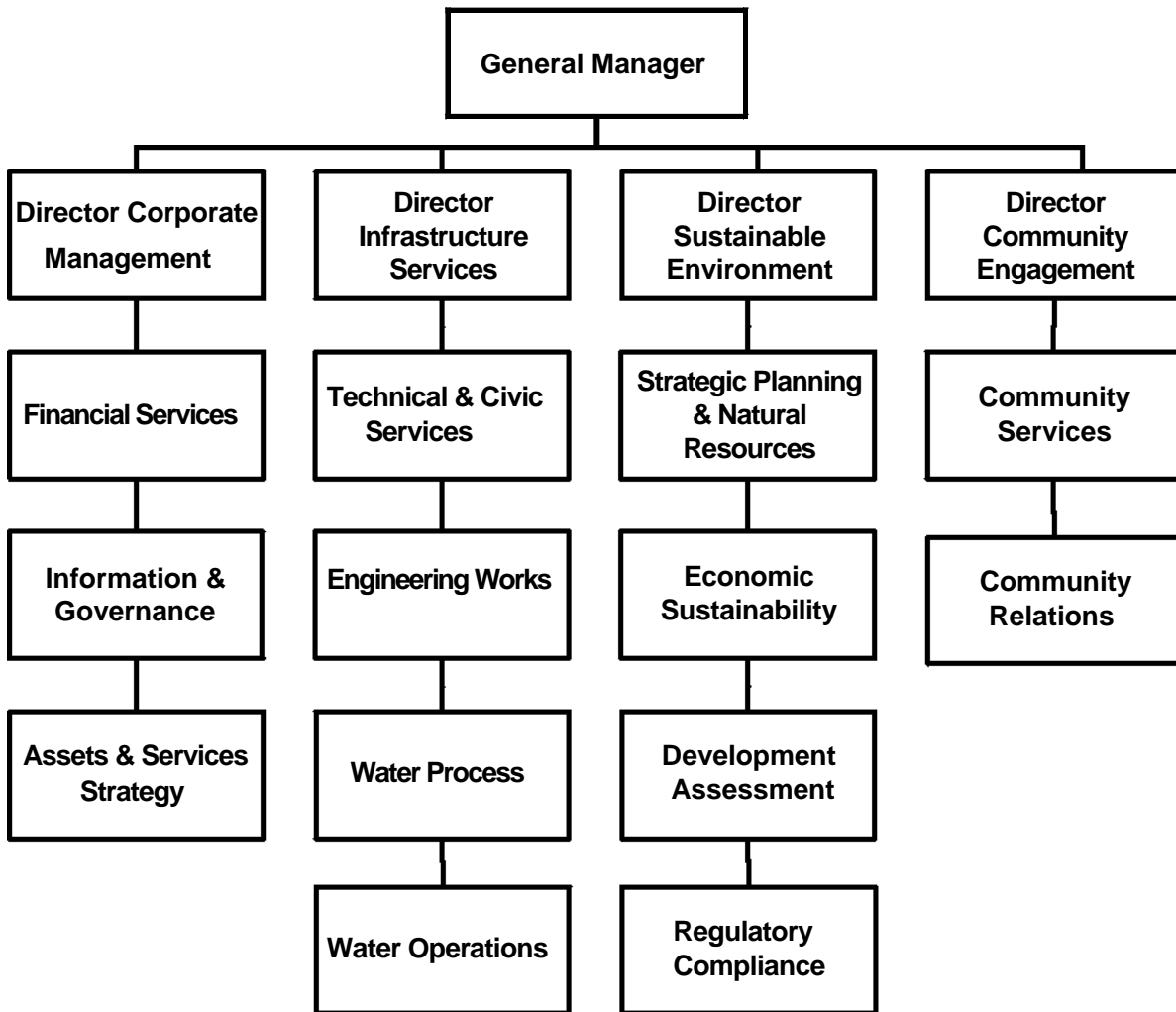
**Table 2.1.2: Key Stakeholders in the AM Plan**

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none"> <li>• Represent needs of community/shareholders;</li> <li>• Allocate resources to meet the organisation’s objectives in providing services while managing risks;</li> <li>• Ensure organisation is financially sustainable to provide the services desired by the community;</li> <li>• Adopt the Asset Management Strategy, Policy and AM Plan.</li> </ul>
Community	<ul style="list-style-type: none"> <li>• Provide input into the levels of service desired from Council;</li> <li>• Be willing to fund the costs for sustainable service delivery/asset management.</li> </ul>
General Manager	<ul style="list-style-type: none"> <li>• Provide overall direction for Asset Management Strategy and integration with other plans;</li> <li>• Provide oversight and manage infrastructure risks;</li> <li>• Ensure adequate resources available for service delivery.</li> </ul>
Director Corporate Services	<ul style="list-style-type: none"> <li>• Provide strategic direction and leadership to the organisation for long term financial sustainability and strategic management of assets.</li> </ul>
Director Infrastructure Services	<ul style="list-style-type: none"> <li>• Provide asset knowledge for asset management planning;</li> </ul>

	<ul style="list-style-type: none"> <li>• Deliver the OPEX and CAPEX programmes.</li> </ul>
Director Community Engagement	<ul style="list-style-type: none"> <li>• Engage with the community through public forums and other opportunities regarding the current level of service and the demand for alterations;</li> <li>• Undertakes actions aimed at increasing the level of information available to the community and the level of understanding of strategic asset management and service provision;</li> <li>• Encourages involvement of the community in asset management and service delivery actions/outcomes.</li> </ul>
Manager Financial Services	<ul style="list-style-type: none"> <li>• Prepare the asset valuations in consultation with the Infrastructure Services teams;</li> <li>• Prepare the long term financial forecasts for all asset groups to satisfy the LTFP.</li> </ul>
Manager Assets and Service Strategy	<ul style="list-style-type: none"> <li>• Work with other Council teams to prepare the Asset Management Strategy, Policy and AM Plan;</li> <li>• Deliver the Asset Manager Strategy, Policy and AM Plan for Councils assets;</li> <li>• Prepare suitable service standards for all asset groups;</li> <li>• Update asset data repositories and provide updated information to all asset management functions/processes.</li> </ul>
Manager Technical & Civic Services	<ul style="list-style-type: none"> <li>• Contribute information to allow the preparation of the AM Plan, Strategies and Service Levels;</li> <li>• Determine renewal, management and other priorities related to asset management for asset classes within sphere of control;</li> <li>• Record and collect asset condition information for asset classes within sphere of control;</li> <li>• Implement Service Levels in asset classes within sphere of control.</li> </ul>
Manager Engineering Works	<ul style="list-style-type: none"> <li>• Contribute information to allow the preparation of the AM Plan, Strategies and Service Levels;</li> <li>• Determine renewal, management and other priorities related to asset management for asset classes within sphere of control;</li> <li>• Record and collect asset condition information for asset classes within sphere of control;</li> <li>• Implement Service Levels in asset classes within sphere of control.</li> </ul>

Council's organisational structure for service delivery of infrastructure assets is detailed below in Figure 2.1.1 (as at October 2013):

**Figure 2.1.1 - Kempsey Shire Council Organisational Structure - December 2013**





## **2.2 Goals and Objectives of Asset Management**

The organisation exists to provide services to its community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by 'purchase', by contract, construction by our staff and by donation of assets constructed by developers and others to meet increased levels of or demands for service.

Our goal in managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance;
- Managing the impact of growth through demand management and infrastructure investment;
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service;
- Identifying, assessing and appropriately controlling risks, and;
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.<sup>3</sup>

## **2.3 Plan Framework**

Key elements of the plan are:

- Levels of service (LOS) – specifies the services and levels of service to be provided by Council;
- Future demand – how this will impact on future service delivery and how this is to be met;
- Life cycle management – how we will manage our existing and future assets to provide defined levels of service;
- Financial summary – what funds are required to provide the defined services;
- Asset management practices;
- Monitoring – how the plan will be monitored to ensure it is meeting the organisation's objectives;
- Asset management improvement plan.

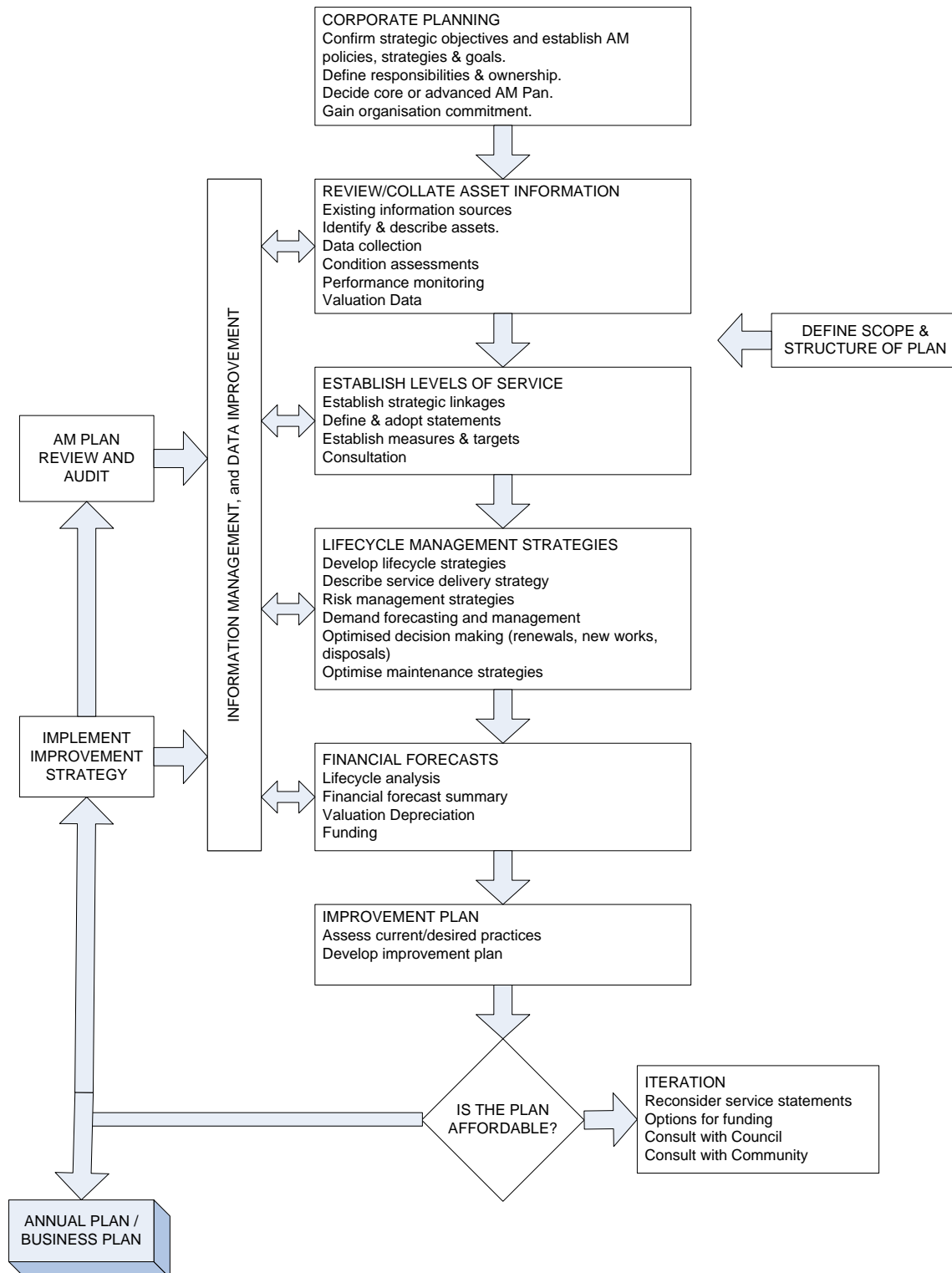
A road map for preparing an asset management plan (AM Plan) is shown below in Figure 2.3.1.

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<sup>3</sup> Based on IPWEA, 2011, IIMM, Sec 1.2 p 1|7.

**Figure 2.3.1 - Road Map for preparing an Asset Management Plan (AM Plan)**

Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11.



## **2.4 Core and Advanced Asset Management**

This AM Plan is prepared as a 'core' AM Plan over a 10 year planning period in accordance with the International Infrastructure Management Manual<sup>4</sup>. It is prepared to meet 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 AM 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. This will be achieved through incorporating sound asset management principles in all of Council's routine actions.

## **2.5 Community Consultation**

This 'core' AM Plan is prepared to facilitate community consultation initially through feedback on the public display of this draft prior to adoption by Council. Future revisions of the AM Plan will incorporate community consultation on service levels and costs of providing the service. This will assist the Council and the community in matching the level of service needed by the community, service risks and consequences with the community's ability and willingness to pay for the service.

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<sup>4</sup> IPWEA, 2011, IIMM.

### 3. LEVELS OF SERVICE

#### 3.1 Customer Research and Expectations

Kempsey Shire Council completed a robust community research survey in March 2012 to support the previous Special Rate Variation (SRV) application<sup>5</sup>. This included a telephone survey and field work to poll a representative sample of residents on their level of satisfaction with Council's services. The results show that residents are moderately satisfied with the quality of infrastructure currently provided by Council as summarised below.

**Table 3.1.1: Community Satisfaction Survey Levels**

Performance Measure	Satisfaction Level (% of responses)				
	Very Satisfied	Satisfied	Somewhat Satisfied	Not Satisfied	Not Satisfied At All
Customer satisfaction with the quality of infrastructure currently provided by Council in the local area	3	33	37	18	9
Customer satisfaction with the level of service provided by council in the local area	5	49	31	10	5
	Very Important	Important	Somewhat Important	Not Very Important	Not At All Important
Customer demand for program to deliver better infrastructure and services provided by Council	56	32	10	1	1
Customer support for Council to introduce a special rate variation (SRV)	14	35	29	9	13

This information shows that 73% of respondents are somewhat satisfied or better with quality of infrastructure, whilst 85% were somewhat satisfied or better with the level of service currently being provided. This result indicates that there is strong support within the community for maintaining current levels of service and infrastructure. Whilst there appears to be satisfaction with the current levels of service and infrastructure quality there is also very strong demand for programs to deliver better infrastructure and services. The development of this AM Plan aligns with the desires of the community.

The 2008 customer survey showed the satisfaction of respondents for assets or services provided by Council with a rating of 1 being very dissatisfied and 5 being very satisfied. A summary of this survey is detailed below.

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<sup>5</sup> Micromex Research, 2012, Special Rate Variation – Kempsey Shire Council - Report

**Figure 3.1.1 - 2008 Customer Survey Results Summary (1-5 Scale with 5 = Very Satisfied)**

<b>Most Important Services</b>		<b>Least Important Services</b>	
<ul style="list-style-type: none"> <li>● Community Safety &amp; Law and Order (4.58)</li> <li>● Town Roads (4.52)</li> <li>● Aged Services (4.41)</li> <li>● Disability Services (4.36)</li> <li>● Financial Management (4.35)</li> <li>● Rural Roads (4.34)</li> <li>● Parking (4.32)</li> <li>● Drainage/Flood Mitigation (4.29)</li> <li>● Public Toilets (4.26)</li> <li>● Council's Customer Services (4.23)</li> </ul>		<ul style="list-style-type: none"> <li>● Saleyards (3.40)</li> <li>● Arts, Culture &amp; Entertainment Facilities (3.61)</li> <li>● Boat Ramps, Jetties, Wharves (3.75)</li> <li>● Cycleways &amp; Bicycle Facilities (3.83)</li> <li>● Kerb &amp; Guttering (3.84)</li> <li>● Youth Facilities (3.85)</li> <li>● Community Halls (3.87)</li> <li>● Sporting Facilities (3.87)</li> <li>● Swimming Pools (3.94)</li> <li>● Parks (3.99)</li> </ul>	
<b>Least Satisfied Services</b>		<b>Most Satisfied Services</b>	
<ul style="list-style-type: none"> <li>● Youth Facilities (2.59)</li> <li>● Community Safety/Law &amp; Order (2.59)</li> <li>● Youth Services (2.61)</li> <li>● Rural Roads (2.62)</li> <li>● Economic Development (2.71)</li> <li>● Cycleways &amp; Bicycle Facilities (2.70)</li> <li>● Financial Management (2.71)</li> <li>● Development &amp; Building Controls (2.73)</li> <li>● Public Toilets (2.77)</li> <li>● Art, Culture &amp; Entertainment Facilities (2.80)</li> </ul>		<ul style="list-style-type: none"> <li>● Libraries (4.22)</li> <li>● Saleyards (3.79)</li> <li>● Swimming Pools (3.76)</li> <li>● Council Customer Service (3.43)</li> <li>● Day Visitor Areas (3.38)</li> <li>● Parks (3.37)</li> <li>● Community Halls (3.34)</li> <li>● Sporting Facilities (3.34)</li> <li>● Tourism Management (3.33)</li> <li>● Drainage/Flood Management (3.31)</li> </ul>	

In terms of community infrastructure assets the following results were recorded:

- 3.31 for drainage/flood management
- 3.26 for parking
- 3.14 for kerb and guttering
- 2.92 for footpaths
- 2.90 for town roads
- 2.62 for rural roads

The survey results can be used to determine the importance and satisfaction for the various services/community infrastructure assets provided by Council from a customer's perspective.

Reviewing this information indicates that:

- Saleyards, swimming pools, parks/recreation, sporting facilities and halls were within the most satisfied group but are also considered to be amongst the least important services. This may indicate over servicing;
- Roads & public toilets were in the least satisfied group, however are considered amongst the more important services indicating a possible desire for improvement in these classes;
- Cycleways/footpaths and cultural development infrastructure were within the least satisfied group however they are also considered to be in the least important group of assets suggesting that the current levels could be maintained or at least further consideration needs to be provided before any changes are made.

The organisation has used this information to develop its Strategic Plan and in allocating resources in the current LTFP, however future consultation with the community to enable service levels to be established will provide an update for this information.

Council has historically undertaken a series of community consultations to support its previous and future SRV Applications as follows:

- In 2010 Council developed a consultation program under the slogan of “Meet The Boss”<sup>6</sup>. This was the first opportunity for the community to meet senior management and gather an understanding on the scale of the problem facing the Council in relation to the management of its existing asset liability. The presentation provided a valuable visual tool to communicate with the community about Council’s current position and to seek feedback from the community on how to address the situation. This was the first round of consultation and a series of community meetings were held at venues accessible to the urban and rural populations.
- A second round of community consultation entitled “Putting the Pieces Together” was undertaken in February 2011, based on the responses from participants after the first round. This second round focussed on the feedback received as well as the options to prioritise the expenditure of the available funding on the infrastructure and services considered by the community to be the highest priority. The presentation also introduced the Asset Management Strategy for Roads and the basis for prioritising funding over the shorter term. Community meetings were again held in the major urban and rural communities across the shire and the options for a SRV were further developed.

The consultation around this proposed increase culminated in the results of the 2012 Micromex Research survey of residents regarding the SRV proposal. The key findings of this survey were:

- “59% of residents are at least ‘somewhat supportive’ of Kempsey Shire Council introducing a special rate variation to fund the described delivery program over 3 years. Residents who are ‘supportive’ indicated that the SRV was needed in order to improve roads and infrastructure in the area”.
- “56% of residents are at least ‘somewhat supportive’ of Kempsey Shire Council introducing a special rate variation to fund the described delivery program over 5 years. Residents who are ‘supportive’ of the 5 year rate increase indicated that this option would be more financially affordable”.
- “78% of residents indicated that it is at least ‘somewhat important’ that Council be allowed to introduce the special rate variation. 98% of residents indicated that it is at least ‘somewhat important’ for Council to implement programs to provide better infrastructure and service. Residents who are ‘supportive’ indicated that the SRV was needed in order to improve roads and infrastructure in the area”.
- “Residents are ‘moderately satisfied’ with the quality of infrastructure currently provided by Council. The current level of satisfaction indicates that residents want Kempsey Shire Council to provide better quality infrastructure in the local area”.

### **3.2 Strategic and Corporate Goals**

This AM Plan is prepared under the direction of the organisation’s vision, mission, goals and objectives.

Our Council’s community vision is (as at June 2013):

***We live in a community that provides opportunity to all, to prosper in an environment that supports well-being, connectedness and access to resources the community wants and needs.***

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<sup>6</sup> KSC, 2012, “Meet the Boss” – Community Consultation Campaign

Our mission is:

***To provide high quality services and facilities through strong leadership that takes into consideration the needs of the community, the environment and future generations.***

Kempsey Shire Council has four community values of *healthy, wealthy, safety* and *sociable*. These are translated into goals supported by strategies in the 2013 Community Strategic Plan, Delivery Plan and Operating plan. Relevant organisation goals and strategies and how these are addressed in this AM Plan are:

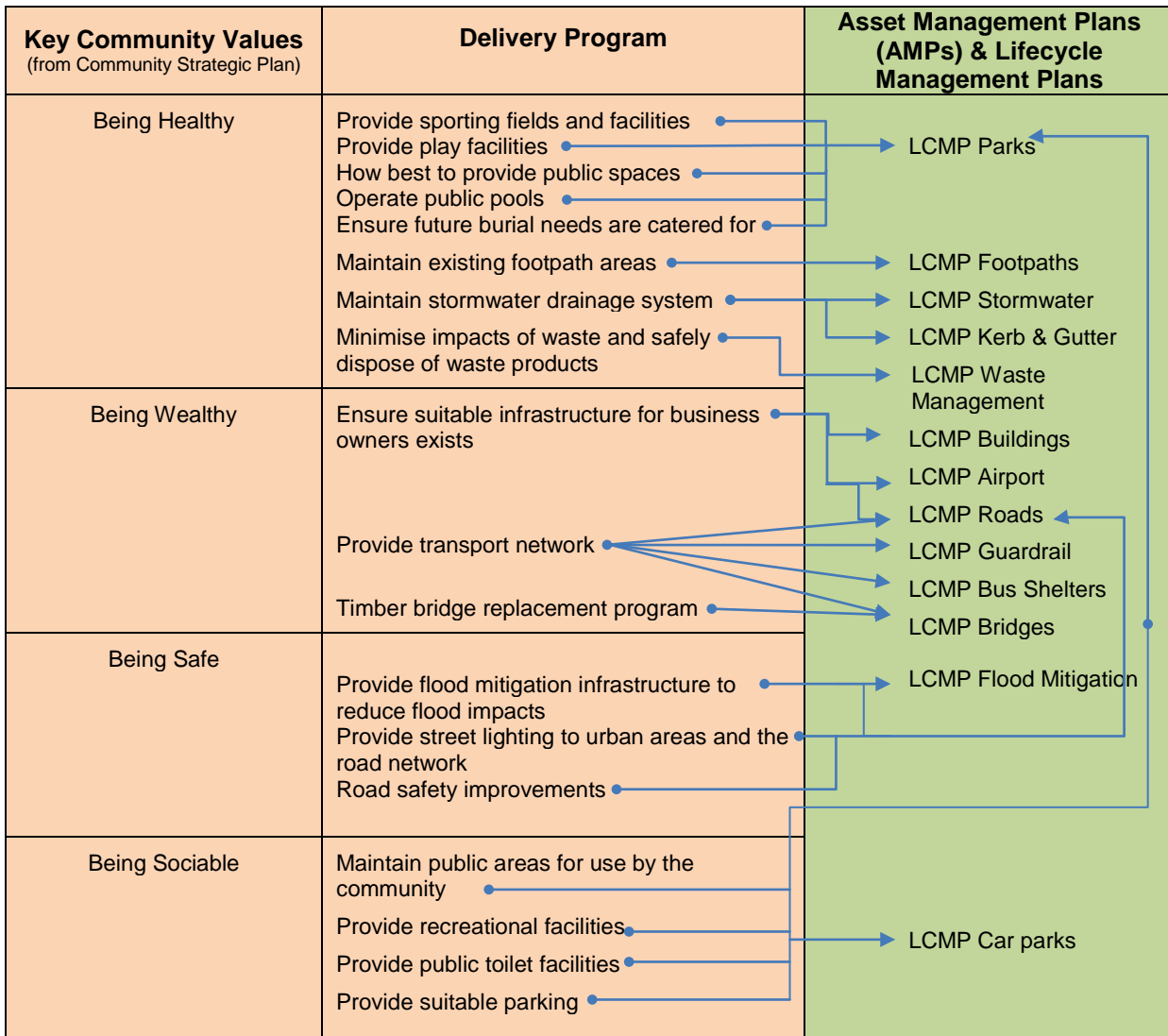
**Table 3.2.1: Organisation Goals and how these are addressed in this AM Plan**

Goal	Strategy	How Goal and Strategies are addressed in AM Plan
Health - Low number of people reporting that health issues prevent them from living the lifestyle they want.	Plan for and provide infrastructure that encourages and allows for active lifestyles.	By providing footpaths and cycleways to give people transport choices as an attractive alternative to using their motor car. By providing community building and parks facilities to encourage people in active lifestyles.
Healthy - Macleay River water quality meets benchmarks .	Restore damaged environments and removal of environmental threats.	By managing the runoff from our roads in a managed manner to minimise the effect on the receiving environment.
Safe - 50% of households have emergency flood / fire plans in place.	Implement systems to minimise and mitigate the impact of disasters.	By proactively replacing deteriorated timber bridges and maintaining roads there is a resilient network in place in times of emergency By monitoring the flood warning system and roads impacted by floods Council can provide accurate and timely information to the community and to understand any significant damage. By providing an effective flood mitigation and drainage system Council can reduce the risk to the community and improve the recovery from flood events .
Safe - The number of crime incidents is equal to or lower than the state average.	Increase education levels within the community using Crime Prevention through Environmental Design (CPTED).	By using CPTED principles in any building development and town centre upgrades.
Safe - The number of accidents resulting in death or permanent disability is equal to or lower than the state average.	Provide education on accident minimisation.	By identifying roads with high accident rates and working with the community through programmes and targeted works programmes.
Safe - 85% of people access and feel safe in public areas.	Through infrastructure and public services reduce the chance of accidents occurring.	By providing for the cost effective maintenance, renewal and development of transport assets in Kempsey, and by ensuring that any defects or hazards are adequately addressed.

The Council will exercise its duty of care to ensure public safety in accordance with the Infrastructure Risk Management Plan prepared in conjunction with this AM Plan. Management of infrastructure risks is covered in Section 5.2.

The following graphic summarises the linkages between the goals in the Community Strategic Plan, the Primary Strategies in the Delivery Program and the provision of Infrastructure and Services by Council.

**Figure 3.2.1 – Links between Key Community Values and the Asset Management Plans**



### 3.3 Legislative Requirements

We have to meet many legislative requirements including Australian and State legislation and State regulations. These include:

**Table 3.3.1: Legislative Requirements**

Legislation	Requirement
Local Government Act	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.
Annual Reporting Section 428(2)(d)	(d) A report of the condition of the public works (including public buildings, public road and water sewerage and drainage works) under the control of council as at the end of that year; together with (i) An estimate (at current values) of the amount of money required to bring the works up to a satisfactory standard; and



Legislation	Requirement
	<p>(ii) An estimate (at current values) of the annual expense of maintain the works at that standard; and</p> <p>(iii) The Council's program for maintenance for that year in respect of the works.</p>
<p>NSW Local Government Act 1993 (Section 8)</p>	<p>A council has the following charter:</p> <ul style="list-style-type: none"> <li>• To provide directly or on behalf of other levels of government, after due consultation, adequate, equitable and appropriate services and facilities for the community and to ensure that those services and facilities are managed efficiently and effectively;</li> <li>• To exercise community leadership;</li> <li>• To exercise its functions in a manner that is consistent with and actively promotes the principles of multi-culturalism;</li> <li>• To promote and to provide and plan for the needs of children;</li> <li>• To properly manage, develop, protect, restore, enhance and conserve the environment of the area for which it is responsible, in a manner that is consistent with and promotes the principles of ecologically sustainable development;</li> <li>• To have regard to the long term and cumulative effects of its decisions;</li> <li>• To bear in mind that it is the custodian and trustee of public assets and to effectively account for and manage the assets for which it is responsible;</li> <li>• To facilitate the involvement of councillors, members of the public, users of facilities and services and council staff in the development, improvement and co-ordination of local government;</li> <li>• To raise funds for local purposes by the fair imposition of rates, charges and fees, by income earned from investments and, when appropriate, by borrowings and grants;</li> <li>• To keep the local community and the State government (and the wider community) informed about its activities;</li> <li>• To ensure that, in the exercise of its regulatory functions, it acts consistently and without bias, particularly where an activity of the council is affected;</li> <li>• To be a responsible employer.</li> </ul>
<p>Civil Liability Act 2002 and Civil Liability Amendment (Personal Responsibility) Act 2002</p>	<p>Protects the Council from civil action by requiring the courts to take into account the financial resources, the general responsibilities of the authority and the compliance with general practices and applicable standards.</p>
<p>Department of Local Government NSW Integrated Planning Local Government Amendment (Planning and Reporting) Act 2009</p>	<p>Requirement for integrated (long term) Community Strategic Plan with Delivery Program and Operational Plan. Additionally it is stated that each Council must prepare a Resourcing Strategy including an Asset Management Policy and Strategy and Asset Management Plan/s to support the Community Strategic Plan and Delivery Program.</p>
<p>Protection of the Environment Operations Act 1997</p>	<p>Sets out to protect, restore and enhance the quality of the environment in NSW, having regard to the need to maintain ecologically sustainable development, pollution prevention, the elimination of harmful wastes, the reduction in the use of materials and the re-use, recovery or recycling of materials.</p>
<p>Environmental Planning and Assessment Act 1979</p>	<p>Sets out to encourage the proper management, development and conservation of natural and artificial resources. The purpose being to promote the social and economic welfare of the community , a better environment and the protection of the environment as well as the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats.</p>
<p>Civil Liability Act 2002 and Civil Liability Amendment (Personal Responsibility) Act</p>	<p>Protects the Council from civil action by requiring the courts to take into account the financial resources, the general responsibilities of the authority and the compliance with general practices and applicable standards.</p>

Legislation	Requirement
2002	
Work Health & Safety Act 2011	Council is required to provide a safe working environment and supply equipment to ensure safety.
Crown Lands Act	The reservation or dedication of Crown Land for public purposes and the management and use of Crown land.
Building Code of Australia	Ensures safe standards for building design and constructions throughout Australia.
There are other relevant Federal and State Acts and Regulations that have not been listed	To be used where applicable.

### 3.4 Current Levels of Service

We have defined service levels in two terms.

**Community Levels of Service** measure how the community receives the service and whether the organisation is providing community value.

Community levels of service measures used in the Asset Management Plan are:

Quality	How good is the service?
Function	Does it meet users' needs?
Capacity/Utilisation	Is the service over or under used?

**Technical Levels of Service** - Supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the organisation undertakes to best achieve the desired community outcomes and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as opening hours, cleansing frequency, mowing frequency, etc;
- Maintenance – the activities necessary to retain an assets as near as practicable to an appropriate service condition (e.g. road patching, unsealed road grading, building and structure repairs);
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement);
- Upgrade – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).

Asset managers plan, implement and control technical service levels to influence the customer service levels.<sup>7</sup>

Our current service levels are detailed in each lifecycle plan in Section 5.

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<sup>7</sup> IPWEA, 2011, IIMM, p 2.22

### **3.5 Desired Levels of Service**

Indications of desired levels of service are obtained from community consultation/engagement. The asset management planning process involves continual consultation with the community to not only establish the required levels of service but also monitoring that the levels of service are meeting the communities needs and that they are financially sustainable.

## **4. FUTURE DEMAND**

The ownership and use of private property is the main source of demand for public infrastructure and services provided by Council. The main types of private properties in the Kempsey Shire Local Government Area are:

- Permanent residential; house and flats;
- Tourist residential/holiday accommodation; houses, flats, motels and caravan parks;
- Processing Industries; Akubra, Nestle, Abattoir;
- General Commercial;
- General Industrial;
- Institutional; Kempsey Hospital and Kempsey Gaol.

### **4.1 Demand Drivers**

The majority of the permanent and tourist population as well as agricultural and processing industries are located on the lower Macleay River catchment, much of which is flood prone. Subsequently, some areas have significant constraints on population growth and can be affected by isolation for extended periods.

Council has long stretches of infrastructure servicing outlying rural and rural residential areas. In general the service density for Council's infrastructure is low resulting in increased costs of service provision to our residents. Future population growth will in time, provide increased efficiencies in service provision.

The area has traditionally experienced growth rates significantly lower than the neighbouring coastal Councils. From an asset management perspective, this has both positive and negative implications. On one side the demand for new infrastructure is minimal. Alternatively the burden of the existing infrastructure liability is concentrated on fewer residents than it otherwise would be if there was a higher level of growth. Higher populations result in increased service provision density and is commonly associated with greater economies of scale, hence the costs of service provision can be lower.

Kempsey Shire Council is in a critical phase of the area's development, the opening of the Kempsey Bypass has the potential to act as a catalyst to other development and community reform. The area is rich in natural beauty, offers an idyllic lifestyle with highly productive agricultural land and significant tourism demand. Being strategically located between Brisbane & Sydney and within close proximity to the major regional centre of Port Macquarie there is potential for significant growth and expansion in the future. It is critical that Council is able to move to a long term sustainable position in relation to maintenance and replenishment of the existing infrastructure so that the area can encourage and enable significant growth.

Population growth has remained low on average and is evidenced by the census data from 2001 and 2011. Over the ten year period, growth averaged approximately 0.7% growth per year. This is consistent with the projections in Council's growth strategies.

Climate change will create an influence upon growth with the impacts of sea level rise and revised flood heights reducing the availability of easily developed land. Council is in the process of completing a study assessing the risk to coastal areas. This study will develop long term actions and strategies to manage the risk through the various options available. As there is public infrastructure with the potential to be affected by future coastal risks, it would be appropriate to review the AM Plan when this study has been completed and adopted.

The ageing population in Australia is expected to result in increasing rates of in-migration to coastal and regional NSW. This is expected to be particularly evident over the next ten years as more and more “baby boomers” are expected to retire with the financial capacity to benefit from the lifestyle available within coastal towns whilst being able to afford the retirement being sought.

The completion of the highway upgrade between Kempsey and Port Macquarie is expected to increase growth and demand with travel times being reduced and the travel made safer. There is already a regular exchange of workers commuting between the two population centres and the attractiveness of this is expected to grow. The majority of Kempsey Shire is eligible for remote location tax offsets that employers can offer through salary packaging.

The rollout of the National Broadband Network has the potential to provide high speed internet connectivity to many businesses allowing further development of real time online collaboration. There are increasing opportunities for workers to participate in their workplace from remote locations without the need to be actually in the office. This may shift the current commuting patterns and encourage more workers to live locally in order to derive the financial as well as the physical location benefits of this area.

## **4.2 Demand Forecast**

*“The total population of New South Wales is projected to grow from 6.57 million in 2001 to 8.26 million in 2031, an increase of almost 1.7 million or 26 per cent over 30 years.”<sup>1</sup>*

### **Overall**

In 2010 Council’s Planning Group developed the Kempsey Shire Council Local Growth Management Strategy 2010 (KSCLGMS). This strategy analysed population projections and dwelling demand projections to the year 2031. A review of the strategy is due to be undertaken in 2014 to reassess the population growth projections against actual growth during this period. Additional sub sets of the strategy are also intended to be added for rural growth predictions and commercial/industrial growth. For the purpose of the current AMP, the adopted projections in KSCLGMS 2010 will be used; however future revision of the AMP should consider any revised growth predictions

Annualised average population growth rate in Kempsey Shire from 2001to 2007 was 0.71%. It is realistic to assume these growth rates will continue into the future. The 2011 Australian Bureau of Statistics Census Data further supports this assumption with growth between 2006 to 2011 reported as an average of 0.7% for this period. Following release of the 2011 Census Data, Council produced a Populations Projections Report in 2012, which further reinforces the validity of the assumed growth rate.

The following is a summary of the relevant sections of the KSCLGMS. The tables below contain 2006 Census Data. This data will require updating with the 2011 Census Data once this is supported by additional studies.

### **Dwelling Types/Locations**

The Kempsey Shire area has a range of residential dwelling types including a significant number of rural residential properties.

In 2006, 66.5% of all dwellings were located in urban areas with only 51% of new dwelling growth being within urban areas. Although land availability pressure will favour the creation of smaller lots in the future, significant rural residential demand is expected continue.

#### Reference

1 p.8, NSW Statistical Local Area (SLA) Population Projections 2001-2031, TPDC, 2005 Release)

It has been assumed 75% of new dwellings will be in urban areas with the balance (25%) in rural and rural residential areas.

Councils Local Growth Management Strategy adopted a nominal ratio of 76% detached and 24% medium density with most medium density development assumed to occur in the coastal urban areas of South West Rocks and Crescent Head and detached housing development in new estates in the Kempsey and Frederickton townships.

### ***Growth by Location***

Urban growth will be focused in the major town of Kempsey, the coastal township of South West Rocks, and in the villages of Crescent Head and Frederickton and Stuarts Point (in the long term).

The Pacific Highway Bypass of Kempsey was completed in 2013 and should encourage residential growth in the Kempsey township and at Frederickton. The upgraded highway will also improve accessibility to the growth areas of South West Rocks, Frederickton and Crescent Head.

**Table 4.2.1: Summary of Population Growth at each Locality**

Locality	Population		
	2006	Increase	2031
Stuarts Point	750	145	896
South West Rocks	4,521	2,420	6,940
Hat Head	309	48	357
Crescent Head	1,114	242	1,356
Gladstone/Smithtown	994	0	994
Frederickton	1,021	194	1,214
Kempsey	8,434	581	9,015
<b>Total Urban</b>	<b>17,144</b>	<b>3,629</b>	<b>20,773</b>
<b>Rural/Rural Res</b>	<b>11,246</b>	<b>1,210</b>	<b>12,456</b>
<b>Total</b>	<b>28,390</b>	<b>4,839</b>	<b>33,229</b>

**Table 4.2.2: Summary of Dwelling Growth at each Locality**

Locality	Locality Proportion	Proportion Medium Density 2006 Census	Projected % Detached Housing 2006-2031	Detached	Medium Density	Total
Stuarts Point	3.0%	8.0%	92%	108	9	117
South West Rocks	50.0%	26.4%	60%	1170	780	1950
Hat Head	1.0%	9.1%	91%	35	4	39
Crescent Head	5.0%	26.2%	60%	117	78	195
Gladstone/Smithtown	0.0%	0.0%	0%	0	0	0
Frederickton	4.0%	7.9%	92%	144	12	156
Kempsey	12.0%	12.9%	87%	407	61	468
<b>Total Urban</b>	<b>75%</b>			<b>1981</b>	<b>944</b>	<b>2925</b>
<b>Rural/Rural Res</b>	<b>25%</b>		<b>100%</b>	<b>975</b>	<b>0</b>	<b>975</b>
<b>Total</b>				<b>2956</b>	<b>944</b>	<b>3900</b>
				<b>76%</b>	<b>24%</b>	

### **Commercial/Industrial Growth**

The Kempsey LGA has many relatively large commercial enterprises. There is a 60 Ha mixed industrial area in South Kempsey, which includes Akubra Pty Ltd. The area is almost at capacity and Stage 1 of an additional 320 hectare industrial/transport hub is underway in the South Kempsey area. This area will generate significant job growth and economic benefits for the Shire.

The Slim Dusty Centre is within the abovementioned future major employment area. The Centre is planned to be a major convention and motel complex. Two large highway service centres are planned for either side of the new Pacific Highway interchange at South Kempsey.

The Nestle milk processing plant at Smithtown has recently augmented its operation by 25% and further expansions are being considered. A number of local dairies currently supply this facility.

Kempsey District Hospital is in the early phases of a significant upgrade costing \$80M. The upgrade is largely a redevelopment of the existing site and adjoining land that formed part of the health campus. The upgrade may prompt a need for expansion and/or re-zoning of the adjacent land for specialists rooms and suitable accommodation for new staff drawn to the area.

Kempsey has a regional gaol situated at Aldavilla. There are no known plans to expand the gaol in the future.

At South West Rocks, planning for a new library building has commenced and zoning of land for specialist rooms will be required. Also, demand for an expanded or new primary school will require additional land in the main release area of South West Rocks. A third secondary school in the Shire needs to be planned with a preferred location in South West Rocks. South West Rocks will experience the highest rate of growth in the shire and it is expected that commercial/industrial development in this area will demonstrate a similar trend.

Frederickton will require a neighbourhood business centre to service the new and expanding Seniors Living development. There is also a significant opportunity for redevelopment of existing large lots within Frederickton and this is likely to assist the economic case for expansion of the local businesses.

The Shire has several large tourist caravan parks at coastal communities and several residential villages. Whilst occupancy during the peak season is at or near 100%, there is ample opportunity for growth in this industry sector through the low or winter seasons. These businesses are starting to target this growth opportunity through the marketing initiatives.

### **4.3 Demand Impact on Assets**

Councils' current level of infrastructure service provision indicates that there is capacity available to meet the projected demand without major capital expansion, with the exception being water supply, sewerage and sporting facilities. The impact of general demand drivers that may affect future service delivery and utilisation of assets are shown in Table 4.3.1 below. More specific demand drivers for each asset class are discussed in the relevant chapters of the AM Plan.

**Table 4.3.1: Demand Drivers, Projections and Impact on Services**

Demand drivers	Present position	Projection	Impact on services
Population Growth	0.71% Per Year (29,581 people 2011 census)	0.7% Per Year (33,229 people by 2031)	Additional Population increases demand upon all services/infrastructure however this also increases income to fund asset operation, maintenance & renewal
Agricultural/Industry Production	Unknown	Unknown	Has the potential to increase demand for services through increased activity, production and population.
Climate Change	nil	Unknown	Study to be completed to determine impacts and strategies for management
Demographics	"Babyboomers" approaching retirement age with an increase in the number of retiree's moving to this area	As above for population growth	As above for population growth. With an additional increase in demand for infrastructure suitable for older persons including footpaths etc.

#### **4.4 Demand Management Plan**

Demand for new services will be managed through a combination of managing and refurbishment of existing assets and providing new assets to service and meet demand. Demand management will be utilised to improve the current level of utilisation of recreational facilities and buildings to return the benefits to the community. In some areas rationalisation of assets will occur to ensure that a higher level of service can be provided over a fewer number of assets to meet the communities expectations.

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions. This includes reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) and educating customers to accept appropriate asset failures. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises. Council's Creative Communities Initiative is another opportunity for the community to become involved in delivering the desired level of service from public infrastructure without necessitating the need for increases in funding.

#### **4.5 Asset Programs to meet Demand**

The new assets required to meet growth will be acquired free of cost from land developments and constructed by the developer. New assets constructed/acquired by the organisation are discussed in each chapter for the specific asset group.

Acquiring new assets will commit the organisation to fund ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs should be identified and considered in developing forecasts of future operations, maintenance and renewal costs in the chapter for each specific asset class. Further work is needed to ensure that provision is made for growth to be factored into forward projections.



Considering the relatively low projected population growth rates, these amounts are not expected to have significant impact upon the current asset liabilities. It is seen as a higher priority to ensure that the level of rates collected from all residents is adequate for the levels of service provided, in order to ensure long term sustainability.

## 5. LIFECYCLE MANAGEMENT PLANS

This Chapter contains the Lifecycle Management Plans (LCMPs) for each of Council's community infrastructure asset groups. Sections 5.1 to 5.7 below, detail common areas and general principles that are applicable to the LCMP of each asset group.

### 5.1 Levels of Service – Customer Charter

General Levels of Service in Council's customer charter are as follows in the table below. Asset specific Levels of Service for each community infrastructure asset group are further defined within the respective asset section.

**Table 5.1.1: Council's Customer Charter with Current and Desired Service Levels**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Responsiveness	Provide prompt responses for emergencies	Collated from call centre database and works reports	To start measuring in July 2014	95% of investigations responded within 1 hour by Council staff
	Provide prompt responses for urgent service	Collated from call centre database and works reports	To start measuring in July 2014	80% of urgent requests responded to within 48 hours
	Provide prompt responses for non-urgent service	Collated from call centre database and works reports	To start measuring in July 2014	75% of non-urgent requests responded to within 3 days
	Percentage of correspondence received needing a reply that is responded to within 10 working days	Collated from call centre database and works reports	77.6%	>90%
	Percentage of customer calls returned within 2 working days	Collated from call centre database and works reports	87.75%	85%

### 5.2 Infrastructure Risk Management Plans

An assessment of risks<sup>8</sup> associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Infrastructure Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational are summarised in Tables 5a.2.1

<sup>8</sup> Refer to Kempsey Shire Council's Risk Management and Insurance Policy

through to 5I.2.1 located within the Lifecycle Management Plan of each asset group. These risks are reported to management and Council.

Critical risks and treatment plans common to all infrastructure assets are as detailed in the table below. Asset specific risks and treatments for each community infrastructure asset group are further defined within the respective asset section.

**Table 5.2.1: Critical Risks and Treatment Plans – Common to All Asset Groups**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
All infrastructure groups	Overall asset condition decreases due to lack of basic maintenance and limited renewal programmes	High (Likely, Moderate)	Determine renewal priorities for each asset group	High (Possible, Moderate)	Unknown
All infrastructure groups	Unexpected failure of critical assets	High (Possible, Moderate)	Implement a maintenance management system	Medium (Unlikely, Moderate)	Unknown
All infrastructure groups	Poor quality assets as a result of ineffective lifecycle management plans	High (Likely, Moderate)	Complete asset condition assessment of critical assets	High (Possible, Moderate)	Unknown

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

A full Tabulation of the risk analysis is contained in Appendix H. This has been summarised for inclusion in each asset class.

### 5.3 Routine Operations and Maintenance Plans

Routine Operations include regular activities to provide services such as public health, safety and amenity, (eg street sweeping), grass mowing, street lighting and routine maintenance. This is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

#### 5.3.1 Operations and Maintenance Plans

Operations activities affect service levels including quality and function through items of work including street sweeping and grass mowing frequency, intensity and spacing of street lights and cleaning frequency.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating, for example; road patching but excluding rehabilitation or renewal. Maintenance may be classified into reactive, planned and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions. Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience and judgement.

Planned maintenance is repair work that is identified and managed through a Maintenance Management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and to improve maintenance and service delivery performance. Council is in the process of implementing “Reflect” as a Maintenance Management tool.

Specific maintenance is replacement of higher value components/sub-components of assets that are undertaken on a regular cycle including re-line marking, replacing raised pavement markers or guideposts, etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

Where maintenance expenditure levels are such that will result in a lesser level of service, the service consequences and service risks have been identified and service consequences highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

### 5.3.2 Operations and Maintenance Strategies

The organisation will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities include:

- Scheduling operations activities to deliver the defined level of service in the most efficient manner;
- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes;
- Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost);
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council/Board;
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs;
- Review asset utilisation to identify underutilised assets and appropriate remedies and over utilised assets and customer demand management options;
- Maintain a current hierarchy of critical assets and required operations and maintenance activities;
- Develop and regularly review appropriate emergency response capability;
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

### 5.3.3 Asset hierarchy

An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for service planning and delivery.

### 5.3.4 Critical Assets

Critical assets are those assets which have a high consequence of failure but not necessarily a high likelihood of failure. By identifying critical assets and critical failure modes, organisations can target and refine investigative activities, maintenance plans and capital expenditure plans at the appropriate time.

Operations and maintenances activities may be targeted to mitigate critical asset failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets, their failure modes and required operations and maintenance activities are further defined within the respective asset section.

## 5.4 Renewal/Replacement Plans

Renewal and replacement expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original or lesser required service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new works expenditure.

### 5.4.1 Renewal plans

Assets requiring renewal/replacement are identified from one of three methods provided in the 'Expenditure Template':

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or;
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or;
- Method 3 uses a combination of average *network renewals* plus *defect repairs* in the *Renewal Plan* and *Defect Repair Plan* worksheets on the 'Expenditure template'.

Method 1 was used for this asset management plan, except for road assets where some modelling based on condition is also carried out.

### 5.4.2 Renewal and Replacement Strategies

The organisation will plan capital renewal and replacement projects to meet level of service objectives and minimise infrastructure service risks by:

- Planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner;
- Undertaking project scoping for all capital renewal and replacement projects to identify:
  - the service delivery 'deficiency';
  - present risk and optimum time for renewal/replacement;
  - the project objectives to rectify the deficiency;
  - the range of options, estimated capital and life cycle costs for each option that could address the service deficiency, evaluate the options against evaluation criteria adopted by Council and select the best option to be included in capital renewal programs;
- Using 'cost effective' renewal methods (cost of renewal is less than replacement) wherever possible;
- Maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council;
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs;
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required;
- Review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

In reality, the required service level of an asset group will be driven by the level of funding that the community is willing to invest in the assets. Once this is established it will be possible to determine the optimal method of investing these funds in the asset to determine the level of service that can be sustainably provided.

### 5.4.3 Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or;
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. roughness of a road).<sup>9</sup>

It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

- Have a high consequence of failure;
- Have a high utilisation and subsequent impact on users would be greatest;
- The total value represents the greatest net value to the organisation;
- Have the highest average age relative to their expected lives;
- Are identified in the AM Plan as key cost factors;
- Have high operational or maintenance costs, and;
- Where replacement with modern equivalent assets would yield material savings.<sup>10</sup>

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5.4.1 below.

**Table 5.4.1: Renewal and Replacement Priority Ranking factors**

Criteria	Factors
Risk	The level of change in Council’s risk profile generated by the action
Nuisance	The level of change in the nuisance impact to the community of using the asset/service
Serviceability	The change in the level of service provided to the community by the asset/service
Level Of Benefit	The frequency with which the asset or service is used and the level of use overall

This system has been adopted by the Council to be transparent and clear to the community and for consistency. Council will use the same system of assessing its asset management priorities as it will use to assess its service provision. This will ensure that the decisions of where resources are allocated are done in an equitable and efficient way. Detailed information on the priority ranking system is in Appendix G.

Renewal work is carried out in accordance with the following standards and specifications;

- Council standards and specifications, including Council’s Development Control Plan (DCP) 36;
- Australian Standards Relevant Codes and Practices;
- Austroad Standards and Specifications;

<sup>9</sup> IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

<sup>10</sup> Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

- Australian Road and Research Board (ARRB) Manuals and Guides;
- Aus – Spec.

Deferred renewal and replacement (i.e. those assets identified for renewal and/or replacement and not scheduled in capital works programs) are to be included in the risk analysis process in the Risk Management Plan.

Renewals and replacement expenditure in the organisation’s capital works program will be accommodated in the long term financial plan (LTFP).

## 5.5 Creation/Acquisition/Upgrade Plans

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the organisation from land development. These assets from growth are considered in Section 4.

### 5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as Councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds are scheduled in future works programmes. The priority ranking criteria is detailed in the table below.

**Table 5.5.1: New Assets Priority Ranking factors**

Criteria	Factors
Risk	The level of change in Council’s risk profile generated by the action
Nuisance	The level of change in the nuisance impact to the community of using the asset/service
Serviceability	The change in the level of service provided to the community by the asset/service
Level Of Benefit	The frequency with which the asset or service is used and the level of use overall

This system has been adopted by the Council to be transparent and clear to the community and for consistency. Council will use the same system of assessing its asset management priorities as it will use to assess its service provision. This will ensure that the decisions of where resources are allocated are done in an equitable and efficient way. Detailed information on the priority ranking system is in Appendix G.

### 5.5.2 Capital Investment Strategies

The organisation will plan capital upgrades and new projects to meet level of service objectives by:

- Planning and scheduling capital upgrades and new projects to deliver the defined level of service in the most efficient manner;
- Undertake project scoping for all capital upgrade/new projects to identify:
  - The service delivery ‘deficiency’;
  - Present risk and required timeline for delivery of the upgrade/new asset;
  - The project objectives to rectify the deficiency including value management for major projects, the range of options, estimated capital and life cycle costs for each options that could address the service deficiency;

- Management of risks associated with alternative option and evaluate the options against evaluation criteria adopted by Council and;
- Select the best option to be included in capital upgrade/new programs;
- Review current and required skills base and implement training and development to meet required construction and project management needs;
- Review management of capital project management activities to ensure Council is obtaining best value for resources used.

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal discussed above in Section 5.3.

## **5.6 Disposal Plans**

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in each asset group's section, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further re-investigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any revenue gained from asset disposals is accommodated in the organisation's long term financial plan.

The cashflow projections from potential asset disposals are not currently available as the disposal schedule has not yet been identified or established. These will be developed in future revisions of this Asset Management Plan.

## **5.7 Service Consequences and Risks**

The organisation has prioritised decisions made in adopting this AM Plan to obtain the optimum benefits from its available resources. Decisions were made based on the development of 3 scenarios of AM Plans.

**Scenario 1** - What we would like to do based on asset register data

**Scenario 2** – What we should do with existing budgets and identifying level of service and risk consequences (i.e. what are the operations, maintenance and capital projects we are unable to do and what is the service and risk consequences associated with this position). This may require several versions of the AM Plan.

**Scenario 3** – What we can do and be financially sustainable with AM Plans matching long-term financial plans.

The development of scenario 1 and scenario 2 AM Plans provides the tools for discussion with Council and community on trade-offs between what we would like to do (scenario 1) and what we should be doing with existing budgets (scenario 2) by balancing changes in services and service levels with affordability and acceptance of the service and risk consequences of the trade-off position (scenario 3). The majority of this AMP is developed using scenario 1 as a basis. There is a lot more information available for roads indicating that this portion of the AMP is progressing towards Scenario 2.



## 5a. LIFECYCLE MANAGEMENT PLAN – ROAD PAVEMENTS

The Road Pavements Lifecycle Management Plan details how the organisation plans to manage and operate the road pavement assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

**Table 5a.1: Current and Desired Service Levels- Roads**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Provide a sealed road that will create a smooth ride appropriate to its classification and speed limits for efficient vehicular movement	Customer satisfaction survey	83% (somewhat satisfied, satisfied, very satisfied) with quality of infrastructure in March 2012	Current performance rating is maintained
	Percentage reduction in number of road condition complaints	Council records	To start measuring in December 2013	5% per annum (on 2013 levels)
Function-safety	Vehicle accidents	Roads and Maritime Services Accident Statistics	To start measuring in December 2013	Reducing
Responsiveness	Hazardous potholes patched within 48 hours of being identified	Collated from call centre database and works reports	83.3%	85%
	Non-hazardous potholes patched within 7 days of being identified	Collated from call centre database and works reports	59.8%	60%
	Emergencies responded to within 1 hour by Council staff	Collated from call centre database and works reports	To start measuring in July 2014	95%
	Dangerous road hazards responded to within 5 working hours of being reported to Council	Customer Service Requests and insurance claims/incidents	89.9%	95%
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations & Maintenance	Sealed road assets maintained to fair condition standard	Condition rating carried out on a 5 yearly cycle	60.1% of sealed roads in fair or better condition (September 2013)	70% of sealed roads in fair or better condition
	Unsealed road assets maintained to fair condition standard	Condition rating carried out on a 5 yearly cycle	99.7% of unsealed roads in fair or better condition (September 2013)	70% of unsealed roads in fair or better condition

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
	Percentage of Council maintained gravel roads graded at least once per year	Collated from works reports	86.6% (accumulated average)	70%
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	4.5%	Further revision of the asset valuation and treatment costs methodology is required to verify the optimal level of service
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	1.51%	4.5% subject to confirmation of annual asset consumption Noted above
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	32.58%	Further revision of the asset valuation and treatment costs methodology is required to verify the optimal level of service



## 5a.1 Background Data

### 5a.1.1 Physical parameters

Council is responsible for managing the road network being 589km sealed and 578km unsealed. This includes regional roads that are owned by NSW Roads and Maritime Services but does not include sections of the old highway to be handed over to the Council in the near future.

The road network is the largest asset group maintained by Council in terms of size and value and is also one of the most frequently used and vital asset groups to the community and business operators.

Both sealed and unsealed road types are built upon layers formed of compacted gravel known as the road base. The road base provides strength to compensate for the underlying soil weakness. Sealed roads also

have a sealed surface which is constructed of bitumen & aggregate, asphalt or concrete. The seal adds strength to the road formation and reduces the ingress of water from the surface into the base. If water is allowed to saturate the road base, deterioration is greatly accelerated.

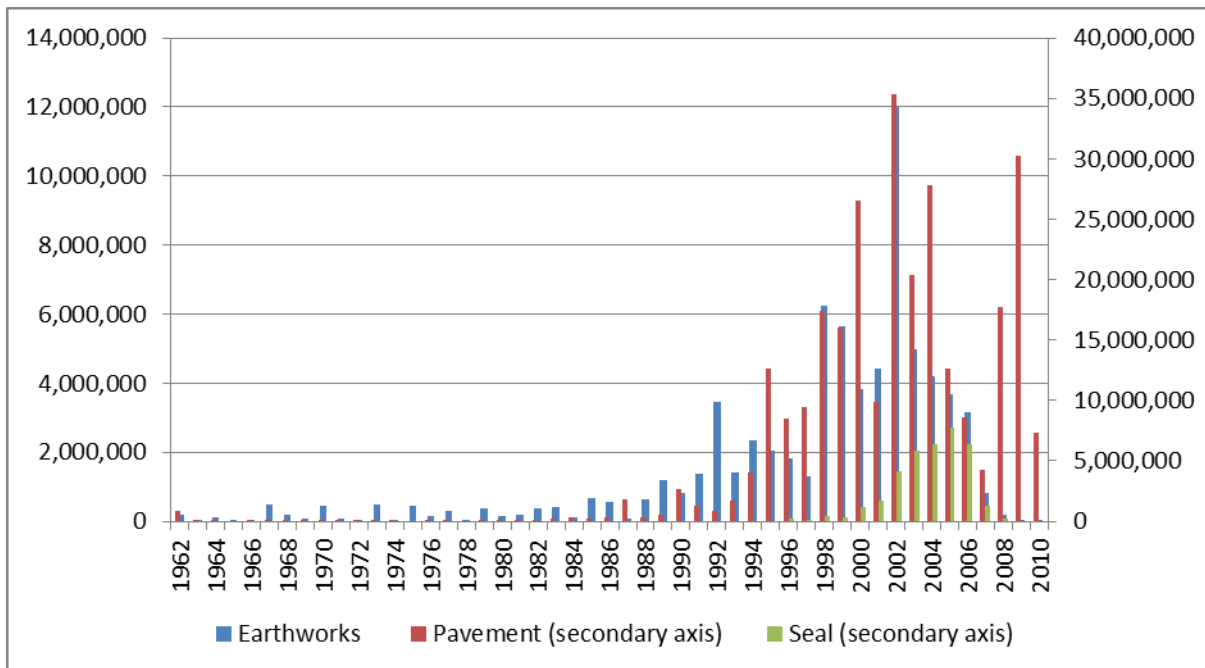
Road traffic and environmental factors cause roads to deteriorate over time creating the need for maintenance.



### Asset Age Profile

Figure 5a.1.1 below shows age profile of road assets componentised into earthworks, road base and seal layers. The profile is based on the current asset condition using the nominal asset age for the component to determine the original construction date, or in the case of road pavements and bitumen seals the last major maintenance date.

Figure 5a.1.1 – Road Asset Age Profile - Road Asset Components Based on Asset Value



### 5a.1.2 Asset capacity and performance

Table 5a.1.1 below shows known road asset deficiencies.

**Table 5a.1.1: Known Road Asset Deficiencies**

Location	Service Deficiency
Various	Increasing backlog of failed roads
Flood prone areas	The roads which are subjected to intermittent flooding are generally very high maintenance. This is a frequent occurrence in Kempsey Shire Council, particularly on the lower floodplain.
Heavy Vehicles	Heavy vehicles create the greatest damage to road pavements. One heavy vehicle can be the equivalent of 9,500 passenger vehicles. Overloaded heavy vehicles cause exponentially higher levels of damage.
Various	Generally, the older sealed roads have insufficient pavement depth and inferior subgrade material requiring rehabilitation of the entire pavement.

**Critical Aspect of Managing road pavements:**

1. Retention of seal;  
Sealed roads are more costly to construct and the cost of rectifying damage is considerably higher than proper preventative maintenance. Resealing a road costs \$8 per square metre. If the seal deteriorates allowing the underlying base to be damaged, the cost to repair is \$80 per square metre.
2. Retention of gravel wearing course on unsealed roads;  
Unless an unsealed road has a good coverage of gravel, it will not be possible to maintain the grade properly and the road will quickly become uneven and be in poor condition. Without proper gravel to work with when doing maintenance, the material cannot be reshaped and re-compacted, meaning that the wearing surface will have no real strength.
3. Type of Road;  
Generally, roads with lower traffic volumes will achieve lowest lifecycle cost if unsealed. As traffic volumes increase, sealed roads will generally have lowest lifecycle cost. Council’s prioritisation model identifies roads with traffic volumes exceeding 300 vehicles per day as roads to be sealed.

Roads have been classified based on their usage to allow the Council to determine different replacement and maintenance levels for different roads. The road network has been segmented into maximum lengths of 1km so that longer roads can be managed for different levels of traffic on different sections of roads.

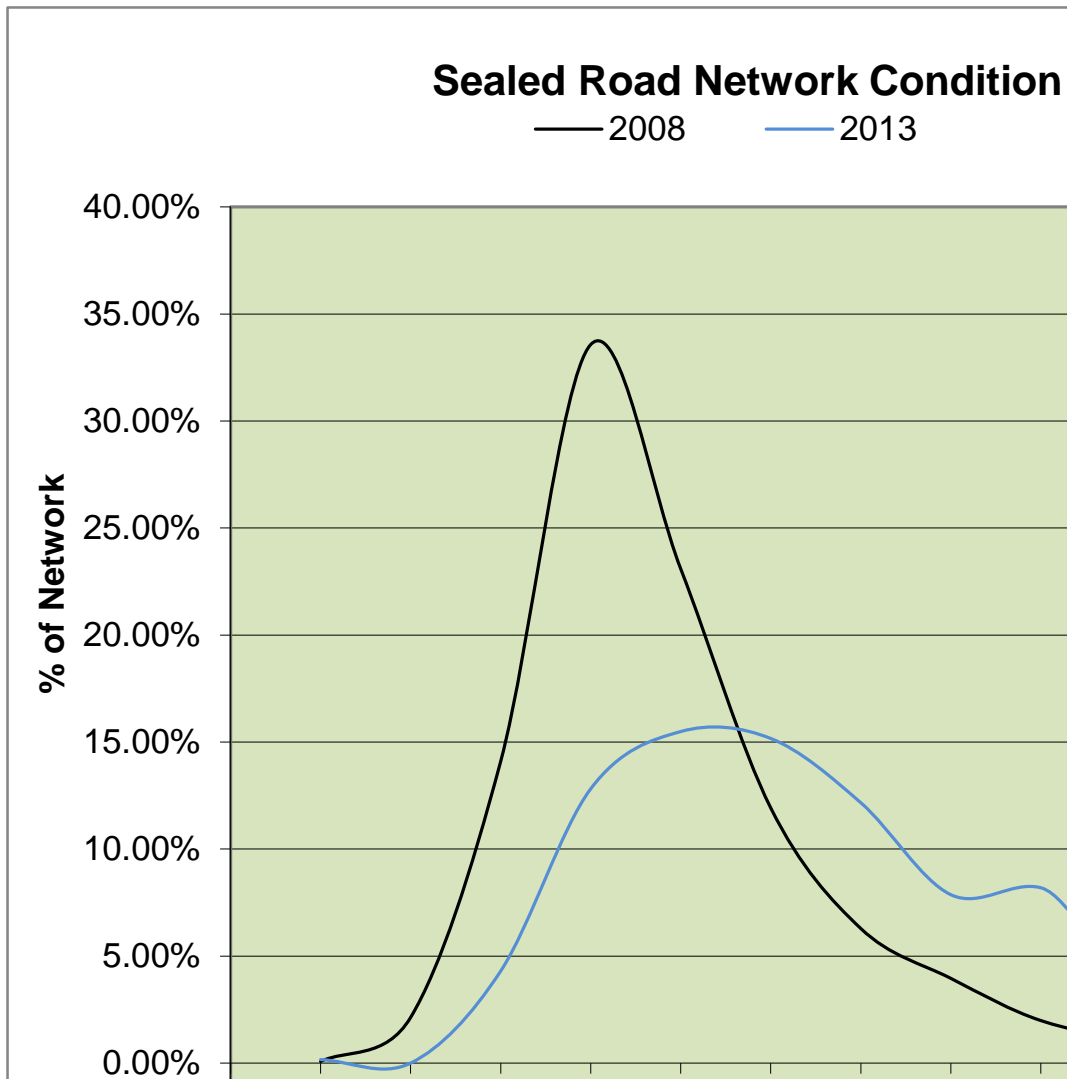
Studies undertaken by Austroads in 2002 indicated that the maximum roughness of sealed roads acceptable to the community was a rating equivalent to 3.3 on the road condition index. Similarly for unsealed roads, a rating of 4.7 was acceptable. To achieve this Council would need to maintain the overall rating, halfway between the ideal road and these ratings. This provided the optimal scenario for asset management within this class. The average for sealed roads was 3.11 in 2011. From the previous condition assessments there is a need for more works to be carried out than can be done with the currently available financial resources, therefore the road condition will continue to deteriorate. This will be cause of serious concern to the community over time unless action is taken to mitigate this effect.

**5a.1.3 Asset condition**

Condition of the whole road network is monitored every four to five years using high speed automatic data collection processes involving specialised vehicles mounted with laser profilers, HDTV cameras and computer systems. The output from laser profilers are used for gathering roughness, rutting and texture together while the cameras capture images of road surfaces and verges to identify other surface defects such as cracking and potholing, to post process the data to compute a Surface Condition Index. The Surface

Condition Index is used to provide a rating of the condition of the road surface. The condition profile of sealed road assets is shown in Figure 5a.1.2 below.

**Fig 5a.1.2 Asset Condition Profile – Sealed Roads**



			2008	2013
SCI Range_From	SCI Range_To	Description	% of Network	% of Network
0	1	New	0.07%	0.16%
1	2	Near new	2.14%	0.00%
2	3	Excellent	14.10%	4.30%
3	4	Very good	33.57%	12.81%
4	5	Good	23.09%	15.49%
5	6	Fair	11.92%	15.17%
6	7	Fair to poor	6.29%	12.17%
7	8	Poor	3.96%	7.87%
8	9	Very poor	1.99%	8.19%
9	10	Extremely poor	1.21%	5.68%
10	>10	Failed	1.67%	18.17%
			<b>100%</b>	<b>100%</b>

Figure 5a.1.2 above shows that the condition of the sealed road network deteriorated significantly in the 5 years to 2013. In 2008, 84.89% of the road network was rated as fair or better condition but in 2013 that percentage had dropped to 47.93%.

From the modelling (Chart 2) of the first AMP in 2011, the deterioration of the sealed road are consistent with preliminary condition assessment in 2013. The costing carried out in 2011 indicated that a sum of \$5 million would be required in addition to current funding levels to maintain the network to an adequate level. This figure was based on previous asset data prior to revaluation of assets and will be the basis for a revised SRV application until the revised asset values have been proven to be accurate by further analysis.

The graph also shows an increase of failed road network when compared to those in 2008. The percentage of the failed road network has increased from 1.67% to 18.17%. This could be attributed to council better managing the limited funding available by giving a higher priority to the repairs to ‘those roads that are tending to fail’ compared ‘to those that had already failed’ as the cost to repair a ‘failed’ road properly, is significantly more than a road that is starting to fail.

Assessment of the 2013 data is currently in progress and until it is completely analysed care should be taken in the direct comparison of this data to the 2008 data. Revisions of the AMP will confirm the change in the network condition and the impact that this has on managing this infrastructure group.

Road condition is measured using a grading system<sup>11</sup> as detailed in Table 5a.1.2 below. The condition of unsealed roads in 2013 was captured using a rating scale of 1 to 5. The 2008 condition rating is condensed from the above SCI rating range to a 1 to 5 scale for comparison.

**Table 5a.1.2: Comparative Condition Grading Model**

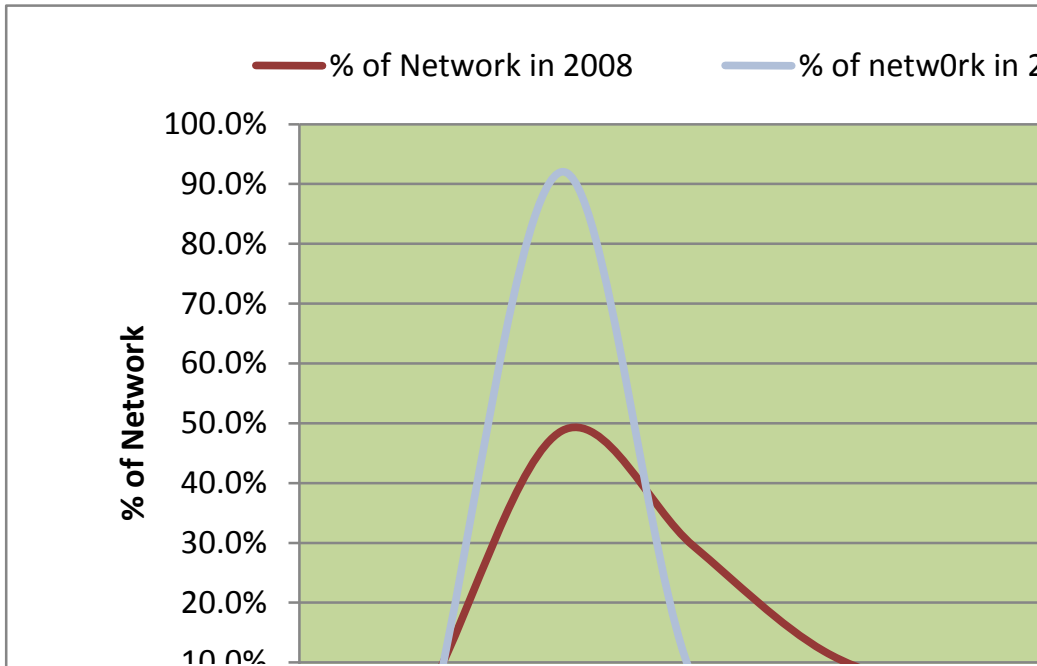
Surface condition index *	Comparative Condition Grade	Description of Condition
1	1	New
2		Near New
3		Excellent
4	2	Very Good
5		Good
6	3	Fair
7		Fair to poor
8	4	Poor
9		Very Poor
10	5	Extremely Poor
>10		Failed

\*Based on Surface Condition Index by ARRB

<sup>11</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

The condition profile of our unsealed road assets is shown in Figure 5a.1.2 below.

**Fig 5a.1.2: Asset Condition Profile – Unsealed Roads**



The graph actually shows that more than 90% of the roads are in condition 2 in 2013 and that the unsealed roads in condition 4 and 5 had decreased by a great margin due the renewal works that had been carried out on condition 3, 4, 5 unsealed roads during the last few years.

Descriptions of the condition ratings for unsealed roads are given below:

Condition	Description
1	Indicates a pavement in a sound state of service and typically displays a good riding surface with well compacted gravel materials present over the vast majority of the trafficable area. There is insignificant, if any loose material, vegetation encroachment, or the presence of surface defects such as potholes, ruts or corrugations that may detract from the ride quality expected.
2	Indicates a pavement in reasonable state of service with adequate construction material present for redistribution by grading. Visual assessment indicates the structure is likely to contain adequate amounts of reasonable quality gravel materials, but may display some areas of loose stone or fine material build up outside the wheel paths. It may have areas of gravel material wearing, evident by large stone outcrops resulting in sub optimal but still fair and acceptable ride quality.
3	Indicates a pavement in substandard condition and requiring routine maintenance. The pavement may display significant surface defects of a severity or extent sufficient to noticeably compromise the travel comfort of the road user. These would include such things as isolated by extreme severity potholes, ruts, corrugations, water scouring or loose material build up, or display extensive areas of these defects with reduced severity. Importantly there appear to be sufficient quality material present on site to enable correction by grading.
4	Indicates a pavement in the same condition of three above and requiring routine maintenance, however visual appearance indicates insufficient quality material present and additional imported material is likely required to undertake appropriate corrective treatment.
5	Indicates a pavement in either extremely poor condition or the presence of defects of such severity so as to present a potential risk or considerably compromise the travel comfort or impede the passage of the road user. Such condition may require priority intervention.



#### 5a.1.4 Asset valuations

The value of road assets recorded in the asset register as at 30 June 2013 covered by this AMP is shown below. Assets were last revalued at June 2011. Assets are valued at replacement costs brownfield rates.

Current Replacement Cost	\$745,141,257.
Depreciable Amount	\$390,784,072.
Depreciated Replacement Cost <sup>12</sup>	\$608,302,314.
Annual Depreciation Expense	\$17,477,426.

Useful lives were reviewed in June 2011 by Infrastructure Department. A KSC Asset Revaluation Report – (June 2011) provides the methodology used for assessing useful life and remaining lives for earthworks, pavement for both sealed and unsealed roads and the seal for sealed roads.

Key assumptions made in preparing the valuations were:

- Prediction of remaining life is based on assessed condition. The condition assessments completed using the 2008 condition rating (factored to 2011), council's internal expertise together with various model of road deterioration that have been developed by groups such as ABARE, Council developed deterioration models for predicting remaining life of earthworks, pavements and seals based on assessed condition;
- The Useful Lives for earthworks and pavement were constant based on the type of road. (e.g. all arterial road pavements have a useful life of 70 years);
- Unit rates were based on traffic counts or predicted road traffic for different classes of road, in-house unit rates based on actual data available compared to those of nearby Councils such as Port Macquarie.

Major changes from previous valuations are due to Council revaluing its road and associated infrastructure assets including the bridge assets as at 30 June 2011. The valuation was undertaken by Council staff and resulted in a net write on in valuation of \$464,298,447. As at 30 June 2013 the roads and associated infrastructure were indexed with reference to the ABS – Producers Price Index 6427.0 and an indexation increase at the rate of 7.399% was applied.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	4.47%
Rate of Annual Asset Renewal (NPV of capital renewal exp/Depreciable amount)	1.51%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	Not known (Upgrading costs are not captured)

In 2013 the organisation will renew assets at 33.69% of the rate they are being consumed but will not be increasing its asset stock in the year.

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<sup>12</sup> Also reported as Written Down Current Replacement Cost (WDCRC).



### 5a.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system “CivicView”. The following tables shows summary costs for the past 5 years.

#### Maintenance & Repair – Sealed roads

		2012/13	2011/12	2010/11	2009/10	2008/09
	<b>R &amp; M</b>	\$ 2,803,577	\$ 2,766,954	\$ 2,367,288	\$3,513,845	\$2,438,998
	<b>Operational</b>	\$431,679	\$494,301	\$ 434,522	\$1,688,884	\$1,741,277
	<b>Depreciation</b>	\$ 7,665,727	\$7,408,632	\$2,838,743	\$2,756,255	\$2,727,243
	<b>Total</b>	<b>\$10,900,982</b>	<b>\$10,669,887</b>	<b>\$5,640,552</b>	<b>\$7,958,984</b>	<b>\$6,907,518</b>

#### Maintenance & Repair – Unsealed roads

		2012/13	2011/12	2010/11	2009/10	2008/09
	<b>R &amp; M</b>	\$1,297,977	\$1,889,084	\$3,044,347	\$3,517,805	\$1,721,941
	<b>Operational</b>					
	<b>Depreciation</b>	\$10,410,692	\$10,408,935			
	<b>Total</b>	<b>\$11,708,669</b>	<b>\$12,298,019</b>	<b>\$3,044,347</b>	<b>\$3,517,805</b>	<b>\$1,721,941</b>

#### Capital Expenditure

		2012/13	2011/12	2010/11	2009/10	2008/09
	<b>Sealed</b>	\$4,782,686	\$2,751,973	\$2,510,565	\$1,384,714	\$1,459,504
	<b>Unsealed</b>	\$2,086,319	\$1,958,619	\$21,463	\$133,384	\$953,943
	<b>Total</b>	<b>\$6,869,005</b>	<b>\$4,710,592</b>	<b>\$2,532,028</b>	<b>\$1,518,098</b>	<b>\$2,413,447</b>

### 5a.2 Infrastructure Risk Management Plan

The critical risks and treatment plan is operational are summarised in Table 5a.2.1 below. These risks are reported to management and Council.

**Table 5a.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Road network	Temporary road closures resulting in a reduction in LOS for road users	High (Likely, Moderate)	Review any road network redundancy; Complete review of access to flood affected roads; complete review of adequacy of existing flood mitigation controls in place.	High (Possible, Moderate)	Unknown
Road network	Poor quality road for users with significant road defects	Very High (Almost certain, Major)	Increase maintenance inspections; review capex programme for damaged road assets; implement maintenance management system	High (Possible, Moderate)	Unknown

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Road network	Prosecution or fines for environmental and heritage damage	Medium (Unlikely, Major)	Increase staff training, increase signage for sensitive areas	Medium (Unlikely, Moderate)	Unknown
Road network	Poor investment decisions as inaccurate data used	High (Likely, Moderate)	Complete analysis and verification of latest condition survey data, report to MANEX on findings and comparison with 2008 data	High (Possible, Moderate)	Unknown
All infrastructure groups	Overall asset condition decreases due to lack of basic maintenance and limited renewal programmes	High (Likely, Moderate)	Determine renewal priorities for each asset group	High (Possible, Moderate)	Unknown
All infrastructure groups	Unexpected failure of critical assets	High (Possible, Moderate)	Implement a maintenance management system	Medium (Unlikely, Moderate)	Unknown
All infrastructure groups	Poor quality assets as a result of ineffective lifecycle management plans	High (Likely, Moderate)	Complete asset condition assessment of critical assets	High (Possible, Moderate)	Unknown

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

### 5a.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5a.3.1 below.

**Table 5a.3.1: Maintenance Expenditure Trends**

Year	Repair and Maintenance Expenditure
2013	\$4,102,554
2012	\$4,656,038
2011	\$5,411,635
2010	\$7,031,650
2009	\$4,160,940

\*Does not include operational costs such as mowing or depreciation. Costs are not segregated as planned and unplanned.

Planned maintenance work currently is expected to be around 50% of total maintenance expenditure.

### 5a.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5a.3.2 below.

**Table 5a.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Regional Roads	Classified main road that provides a link across regions and state roads and is fully funded by RMS, maintained by Council
Local Road (Arterial)	Primarily major connection roads to the Regional Road network, is funded and maintained by Council. It has higher volume of traffic than Local Road (Collector)
Local Road (Collector)	Roads collecting and distributing traffic onto local arterial roads, constructed and maintained by Council.
Local Road (Local Street)	Predominantly provides direct access to private dwellings
Local Road (Access Place)	Provides access to properties or to a limited number of dwellings
Local Road (Track)	Unmaintained Council roads, Crown or private roads. Access suitable for dry weather 4WD.

### 5a.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5a.3.3 below. Critical assets are known operationally only.

**Table 5a.3.3: Critical Assets and Service Level Objectives**

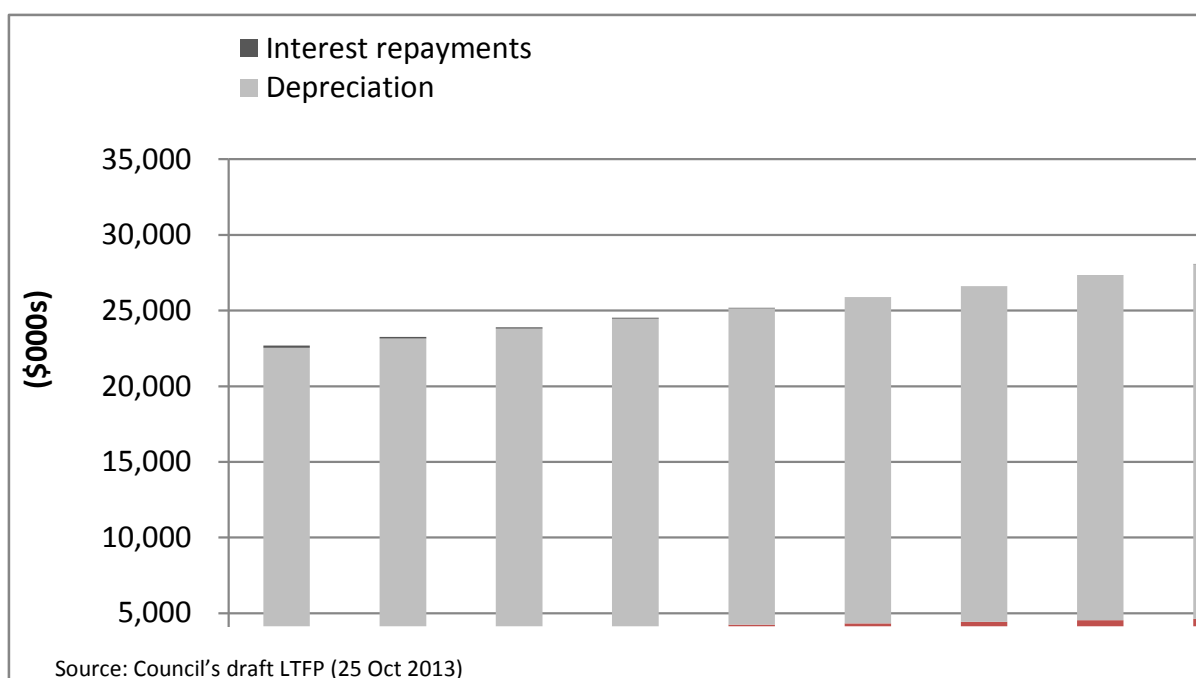
Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Armidale Road, Gowings Hill Road & Stuarts Point Road	Earth slip, fire, or major accident, inability to provide timely intervention of general road deterioration	Risk of major disruptions to Council resources including operation and maintenance activities
South West Rocks Road, Crescent Head Road, Plummers Lane, Smithtown Road & Hat Head Road	Storm, fire, flooding, major accident, inability to provide timely intervention of general road deterioration, heavy vehicle movements whilst the road is unsuitable for such traffic (after flood).	Risk of major disruptions to Council resources including operation and maintenance activities

Precautions to be taken to minimise the risk to these critical assets are an increase in frequency and detail of inspections, together with timely maintenance and improvement works.

### 5a.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5a.3.1 below. Note that all costs are shown in inflated dollar values.

**Figure 5a.3.1: Projected Operations and Maintenance Expenditure**



Deferred maintenance, ie works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the infrastructure risk management plan.

Maintenance is funded from the operating budget where available. This is further discussed in Section 6.2.

#### 5a.4 Renewal/Replacement Plan

##### 5a.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5a.4.1. Asset useful lives were last reviewed on June 2011.

**Table 5a.4.1: Useful Lives of Road Assets**

Road Asset (Sub)category	Useful life
Earthworks	100
Arterial – concrete pavements	70
Arterial – seal road pavements	30
Sub Arterial – concrete pavements	80
Sub Arterial – sealed road pavements	40
Collector & Local – concrete & sealed pavements	50
Local – Unsealed pavement	7
Arterial Bitumen Surface	8
Sub Arterial Bitumen Surface	10
Collector Bitumen Surface	12
Local Bitumen Surface	15
Arterial AC Surface	14

Source: KSC Asset Revaluation Report – Jun 2011

### 5a.4.2 Renewal and Replacement Strategies

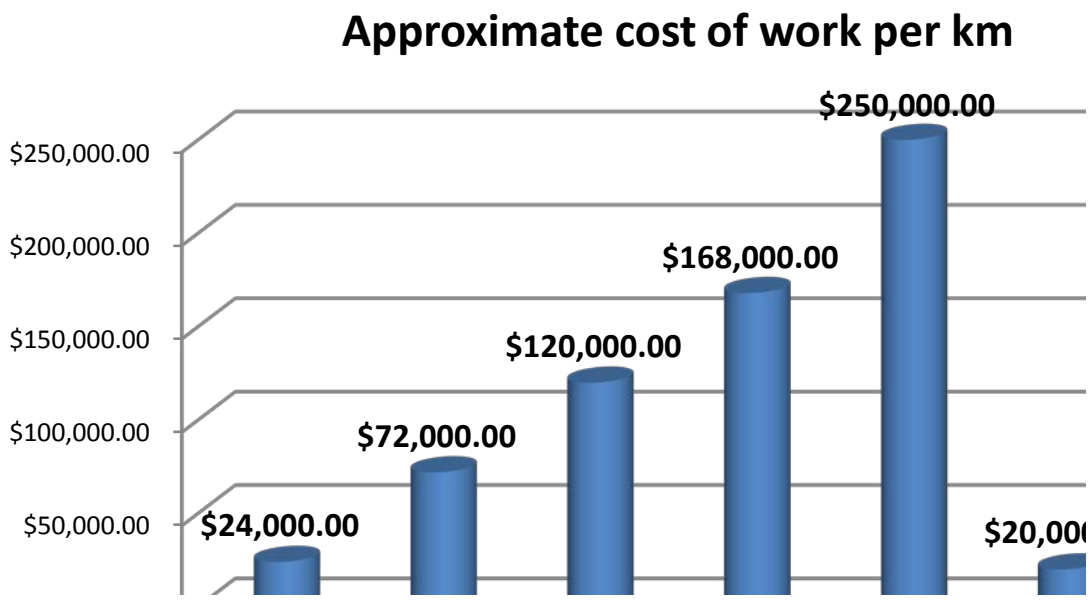
Ideally the road network should be maintained in general to a condition better than a fair condition for sealed roads and a condition better than poor for unsealed roads. To achieve this would take a level of capital replacement and replenishment works as well as ongoing maintenance of the assets. At this stage it is important to gain an understanding of how the asset type deteriorates.

While the roads are deteriorating, this is not generally visible until the level of damage is past where it optimally should be. For the first 80% of a well maintained sealed roads life, the damage should not be visible. From that point it deteriorates quickly.

On sealed roads, maintenance work within the design life of a road consist of reseals on an eight to twelve year basis and as the road moves towards the later stages of its life heavy patching for the sections of road that have started to fail due to the traffic use. Maintenance should be undertaken to promptly patch potholes to minimise the impact of damage on the remaining part of the road. Due to the high cost of properly fixing damage to a road, failure to undertake the appropriate resealing has significant financial costs.

The following chart shows the treatment costs of road in different states of repair.

**Figure 5a.4.1: Cost of works (condition of roads shown in brackets)**



Costing of works has indicated that an increase of over \$5 million per annum is required to fund the existing maintained road network at the ideal level. The current funding levels for road assets are:

**Table 5a.4.2: Ideal and current workloads**

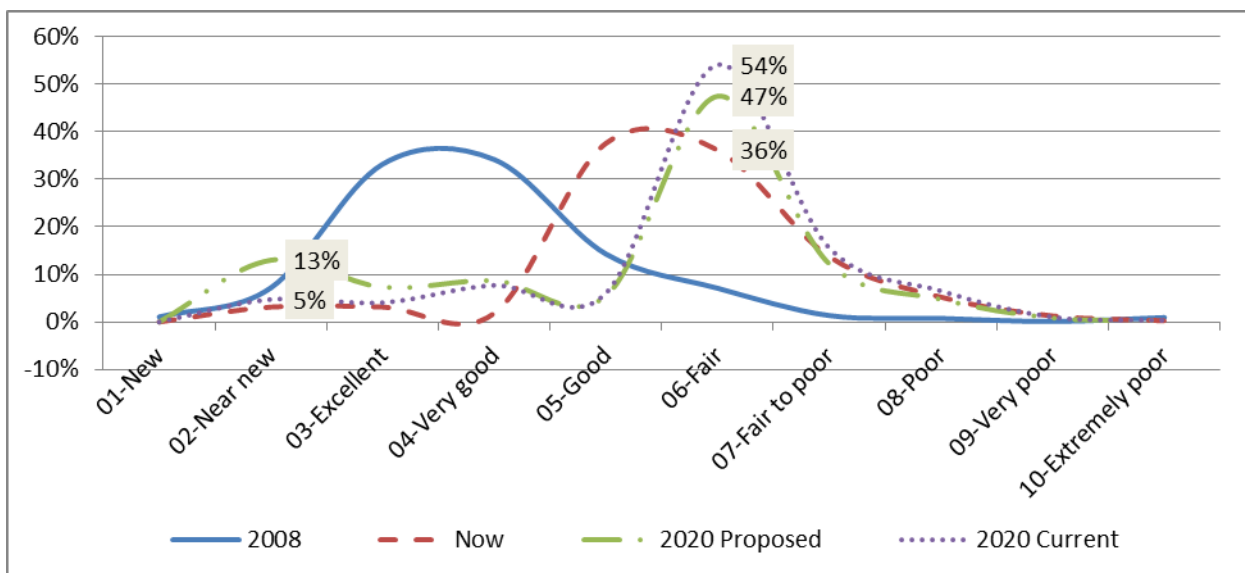
	Current		Ideal	
	Quantity	Value	Quantity	Value
<b>Resealing</b>	5.1km	\$180,000	54km	\$2.1m
<b>Sealed Reconstruction</b>	6km	\$1.5m	9km	\$2.2m
<b>Gravel Re-sheeting</b>	10km	\$550,000	96km	\$2.4m
<b>Maintenance</b>		\$2.67m		\$3.48m
<b>Total</b>		\$4.9m		\$10.2m

As can be seen there is a considerable gap between the ideal management of the asset group and the currently funded position. At this stage this is leading to a gradual deterioration of the asset class. To provide an indication of the ongoing effect of this deterioration an assessment has been undertaken using the data gathered in 2008 on the condition of the road network. This allowed the determination of the average condition for each segment of the maintained road network and this to be shown graphically. As the deterioration curve for roads is known it is possible to estimate the equivalent condition at the end of the next ten years.

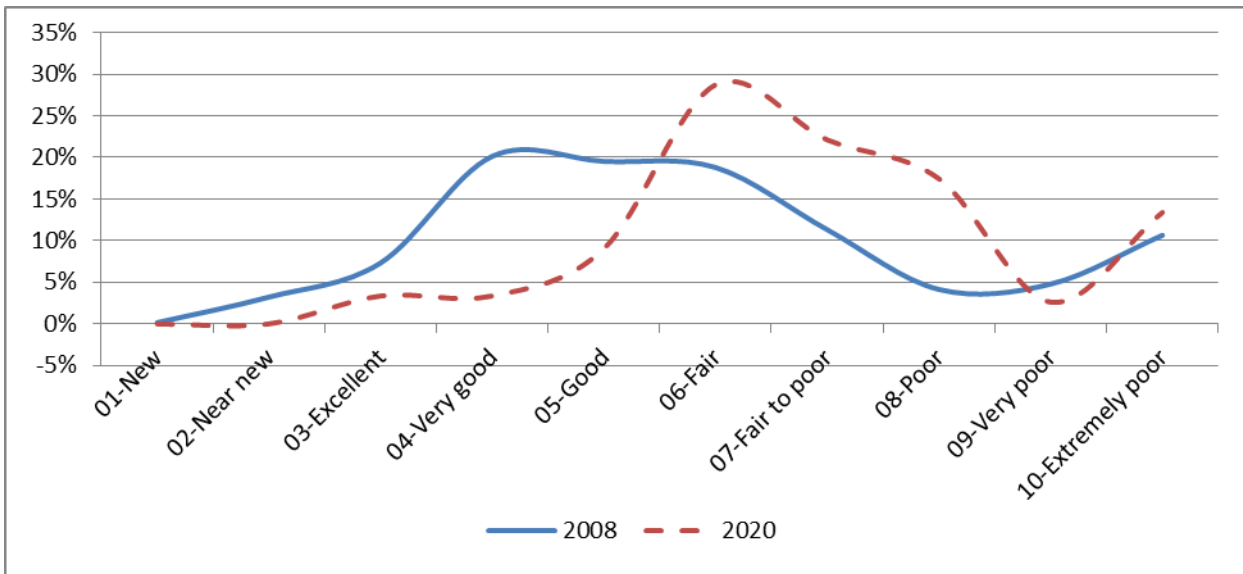
*It should be noted that even though Council has undertaken a review of its road network during 2013, it requires a thorough and critical analysis of the data before it can be included in this section. Once this task is undertaken, this section of the Roads LCMP will be updated.*

The following graph shows four curves for the road network condition. They show the percentage of the road network within each condition category. The actual condition from 2008 shows the current base case. For 2020, two models are shown, one includes the addition of increased funding towards dealing with the backlog of works (2020 Proposed). The other graph shows the estimated situation without a change in current processes and resources (2020 Current).

**Figure 5a.4.2: Sealed Road segments - Network condition for 2008 (actual), 2011 (estimated) and 2020 (estimated)**



**Figure 5a.4.3: Unsealed Road segments - Network condition for 2008 (actual) and 2020 (estimated)**



Under the current asset management it can be seen that there is a significant deterioration in the average condition of the road network over the period of time shown. As the council is unable to keep pace with the rate the roads are breaking down, more road segments fall into the lower condition ratings. As the focus is on trying to offset the areas of greatest complaint the poor condition roads are kept at a similar level. But here also, the council will be unable to keep pace, meaning that the level of complaints required before the council will take action will increase and more road segments will move into the failed section.

Council’s Special Rate Variation that was approved for 2012/13 has seen an increased expenditure on road asset replenishment; however it is still well below what is actually required. In addition the number of Natural Disaster flood events and increased heavy vehicle loadings from the bypass construction has greatly impacted upon the road network condition.

The failure to replace the gravel wearing surface of the unsealed roads will mean that roads will increasingly be unable to be maintained. Council had carried out a road network survey recently in 2013 and similar modelling needs to be redone.

**ASSET OPTIMISATION – SEALED ROADS** *(Based On 2011 asset data prior to revaluation)*

In determining the optimal mix between the length of time that the capital investment should be made to last, the expected level of maintenance costs and the impact on the replenishment costs of the assets has been assessed. The road deterioration data can be used to determine points on the scale that an average extent of damage can be determined for. These points allow for an extrapolation of the degree of damage requiring repair at various lifetimes in the asset. To improve the accuracy of the forecast, only damage indicators for the first twenty (20) years of a road’s life have been used to determine the equations to calculate the likely damage. This is to reflect that under the optimal and minimum management, this asset class should not be allowed to enter into the later stages of deterioration.

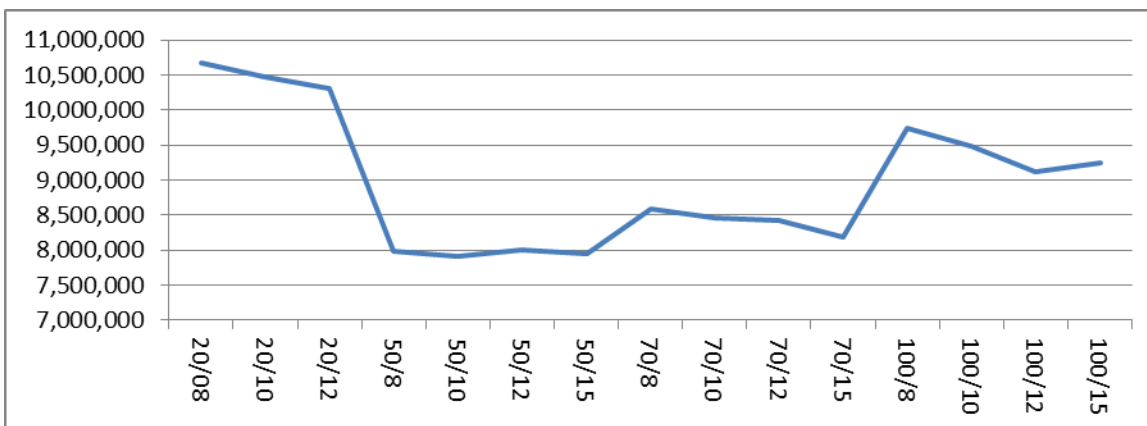
The following table shows the relative extent of works that will be required at the various intervention levels of the road’s life. Using the unit rates that these works cost it is then possible to estimate the impact on maintenance costs that increased time between capital replenishment would have. An assessment of a number of variations on managing the road network was evaluated against the anticipated construction and maintenance costs from these formulas. The following table shows the annualised equivalent cost for each of the options assessed.

In determining whether the scenarios are likely to meet the requirement of the public to achieve the desired maximum roughness council has relied on the data collected for the South Australian Government to develop models that would meet their desired roughness standard (20 year reconstruction and 11 year reseal treatment). A value judgement was made from this information on the basis that local roads will have a lower average level of usage. While this could be determined through consultancies, the overall cost is not seen as warranted at this time.

**Table 5a.4.3: Calculation of annualised cost of maintain sealed road network.**

Option	Scenario (Years)		Annualised Lifetime Costs	Average Roughness (IRI)	External Impacts	
	Reconstruct	Reseal			Residents Cost Impact	Adj Total
1	20	8	9,246,215	1.50	-154,981	9,091,234
2	20	10	8,922,902	1.56	-140,612	8,782,290
3	20	12	8,635,025	1.62	-123,863	8,511,162
4	50	8	7,517,742	2.11	0	7,517,742
5	50	10	7,251,506	2.20	22,373	7,273,879
6	50	12	7,086,012	2.24	34,276	7,120,288
7	50	15	6,783,963	2.50	99,317	6,883,279
8	70	8	8,351,386	2.30	50,276	8,401,662
9	70	10	7,999,729	2.30	50,366	8,050,095
10	70	12	7,717,904	2.46	90,657	7,808,560
11	70	15	7,167,681	2.56	115,045	7,282,726
12	100	8	9,619,284	2.48	94,791	9,714,075
13	100	10	9,001,601	2.57	118,508	9,120,110
14	100	12	8,207,898	2.73	158,729	8,366,627
15	100	15	8,169,790	2.68	146,770	8,316,561

**Figure 5a.4.4: Annualised cost of options for sealed road maintenance for each scenario above**



It is not considered that the models calling for life spans over 50 years would allow the roughness targets to be achieved. The increased maintenance costs will also lead to higher annualised costs, these scenarios have been discounted. They are examples of the current practices, of deferring capital replenishment, which in turn leads to higher long term costs to the community.

The large capital costs are seen to drive up the annualised cost in the scenarios based on a 20 year reconstruction cycle. It is considered that these scenarios would deliver a higher level of road quality and could be considered by the community as an option. Indications from the community are that they are looking to minimise costs. As such these scenarios have been discounted.



Within the 50 year life models the costing has shown to not display as high degree of variation. The variation between the lowest service level and the maximum is \$133,000 per annum. In context, this equates to 1.7% increase on the lowest cost option. When factoring into account the target of having roads with a quality rating no greater than 3.3, it is not considered that 15 year reseal periods would achieve this. Accordingly, while the cheapest option, it does not meet the expectations of the community. As the use of 12 year reseals results in a higher cost and will result in higher roughness, this option can also be discounted.

Due to the high standard considered acceptable by communities and the minimal cost variation between options 3 and 4, option 4, with 50 year reconstruction period and 8 year reseal cycle is considered the best fit with the community's expectations, and thus gives the best benefit for the costs.

In light of the relatively close costs of the various options a factor has been calculated to indicate the impact of the various reseal periods on the cost to the resident. The higher roughness of the road results in increased maintenance cost on vehicles. The calculated variation in vehicle operating costs has been compared to the selected option to see whether the option provided would be offset by increased costs or savings to the wider community.

While the above determines the optimal treatment for the overall network, there is considerable variation in traffic volumes across the network. To meet the expectation of a consistent level of roughness of the roads the Council has to vary the treatment based on traffic volumes.

The following table outlines the service intervention levels that would be anticipated on the different asset classes.

**Table 5a.4.4: Estimated yearly timeframes for major intervention (Sealed roads)**

Classification	Reconstruction	Resealing
< 10	N/A	N/A
11 – 50	N/A	N/A
51 – 200	70	12
201 – 500	60	10
501 – 1,000	50	8
1,001 – 5,000	50	8
5,001 – 10,000	40	7
10,001 -20,000	40	6
> 20,000	20	6

**ASSET OPTIMISATION – UNSEALED ROADS (Based On 2011 asset data prior to revaluation)**

Unsealed roads do not have the critical intervention level that exists with the sealed road. Their condition will generally continue to deteriorate over time as the road is used. As such the determination of the optimal intervention levels is determined around the workload required to maintain the roads below the standard identified by communities as being appropriate. The key determinate is the extent to which gravel is lost, as a road cannot be properly maintained unless it has a core level of gravel in place.

Information developed by Moorabool Shire Council has provided a good indication of the way pavement on an unsealed road is affected by the combination of maintenance and rehabilitation.

The data indicated that this level of roughness could be reduced by increasing the maintenance grading to six monthly treatment as opposed to the 12 monthly scheme above. The change in treatment resulted in a 13% improvement in the maximum roughness on low trafficked roads and 18% improvement for heavier trafficked roads. However, the average roughness shows a much smaller change, of only 4.7% overall.

Based on this information the savings in vehicle maintenance of \$94,000 per annum made by the community is much lower than the cost of the additional grading or \$684,000. Any benefits would be not able to be quantified and thus are not recommended unless requested by the community, who have indicated a preference for a low cost option.

The local community has expressed a desire for a higher level of road maintenance than what currently exists. At the time the maintained roads were assessed in 2008, the average surface condition index of the road was 5.56, meaning they were half way between ideal and failed roads. The surface distress measure within the condition index averaged out at 4.2, indicating issues with crossfall and formation height were also significantly affecting the road conditions.

The past study into the impact of roughness did not provide any conclusive information on what level of roughness or surface condition was acceptable by the community. In this area the community will have to determine the relative improvement in road smoothness against the cost in rates and charges. In the absence of this it has been assumed that the optimal performance of the road network would be to have a road network with an average surface condition no more than half way to the failed surface condition index. As the previous studies have shown that it is not possible to have a gravel road which would match the optimal surface condition index, the best result possible is considered a rating of 2. This would lead to a target average surface condition index of 3.5.

In determining the level of effort to be put into the unsealed roads requires an assessment of the extent that gravel is lost from the wearing course of the road, to determine the length of time that a road can continue without the gravel being replenished before damage occurs to the sub base and the base of the road. If the gravel is not replenished, the increased cost of returning the road to its optimal state will increase. Based on an average traffic use of 70 vehicles per day the annual gravel loss will be 19mm. Based on this factor the various lives that will be achieved from different levels of thickness initially placed on the road can be calculated.

**Table 5a.4.5: Various options for maintenance of gravel road network**

Scenario (Years)				Annualised Costs	Relative Roughness	External Impacts	
Option	Resheet Depth (mm)	Resheet Time (Years)	Grading Freq			Total	Residents Cost Impact
1	100	3.7	6	5,503,544	7.63	-94,373	5,409,171
2	150	6.3	6	4,425,513	7.63	-94,373	4,331,139
3	180	7.9	6	4,601,006	7.63	-94,373	4,506,633
4	200	8.9	6	5,282,334	7.63	-94,373	5,187,961
5	250	11.6	6	5,127,487	7.63	-94,373	5,033,113
6	100	3.7	12	4,606,002	8	0	4,606,002
7	150	6.3	12	3,527,971	8	0	3,527,971
8	180	7.9	12	3,703,464	8	0	3,703,464
9	200	8.9	12	4,384,792	8	0	4,384,792
10	250	11.6	12	4,229,945	8	0	4,229,945

From the above information it can be seen that the lowest cost option for maintaining the unsealed network sustainably is option 7.

While this gives the overall average, the level of traffic will determine the timeframe for each roads need for resheeting. This is caused by the fact that the level of traffic determines the rate at which gravel is lost from the road’s wearing surface. This has been calculated for each of the road segments and will be applied as a guide for the frequency of resheeting needed. The existing backlog will be dealt with through the use of the prioritisation system, which will lead to a focus on roads with higher usage where all other factors are equal.

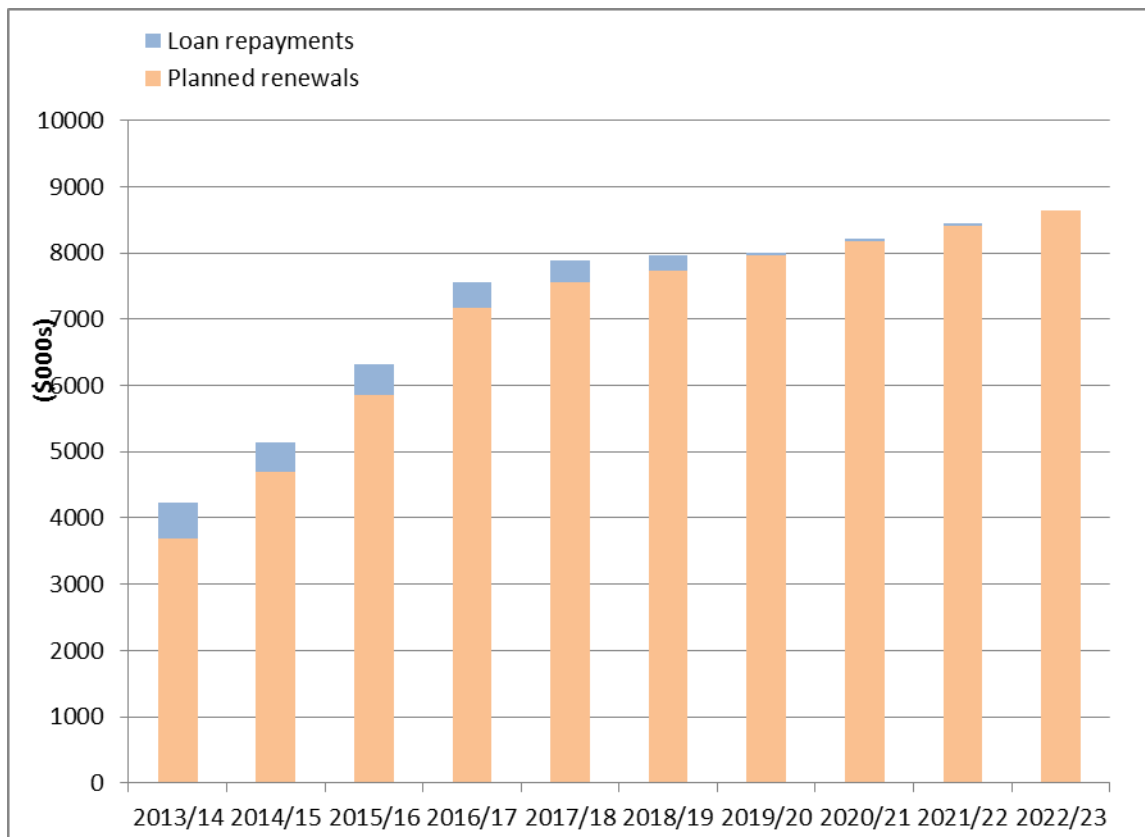
**Table 5a.4.6: Estimated yearly timeframes for major intervention (Unsealed roads)**

Classification	Resheeting
< 10	10+
11 – 50	8
51 – 200	4
201 – 500	2.5

**5a.4.3 Summary of future renewal and replacement expenditure**

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The projected capital renewal and replacement program is shown in Appendix B.

**Figure 5a.4.5: Ten year projections as per LTFP**



\*Source: Council’s draft LTFP (25 Oct 2013)

Council modelling shows that around \$17 million is required per annum for both sealed and unsealed roads for renewals. Council’s LTFP had allocated approximately \$7 million per annum for the next ten years. This results in a gap of around \$10 million shortfall in renewals for both sealed and unsealed roads. This obviously results in the road network suffering a gradual deterioration over the next ten year due to lack of financial resources.

## 5a.5 Creation/Acquisition/Upgrade Plan

### 5a.5.1 Summary of future upgrade/new assets expenditure

There are no new road assets planned in the Long Term Financial Plan. Some upgrade works (such as shoulder widening) are carried out along with renewal work sometimes, but they are usually captured as renewal expenditure currently.

## 5a.6 Disposal Plan

At present there is up to 250 km of public road that is unmaintained. Increasing this figure would reduce the annual maintenance and replacement liability. In recognising the funding gap between the level of income required to fund adequate maintenance of road assets, a review should be undertaken to ensure that the levels of service are equitably distributed across the low priority roads. Council may then opt to reduce the percentage of the road network which is actively maintained.

**Table 5a.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No road assets have been identified for disposal at this stage.				

## 5a.7 Service Consequences and Risks

### 5a.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- A number of renewal works identified from condition surveys, being deferred or being bypassed for other prioritised renewal projects that are funded over the next ten years. Such prioritisation means that roads with higher utilisation are likely to be maintained to a better condition than those with very low utilisation.
- Some projects that are already funded may be deferred due other priorities such as diversion of resources to urgent activities arising from irregular flooding of the shire.
- Completion of renewal and maintenance work required to maintain the overall condition of the road pavement network to a “very good condition” with current resources.

### 5a.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- Roads being deteriorated over longer term, thus affecting the levels of service costs

- Community being dissatisfied with the services provided in relation to road network maintenance;
- Vehicle maintenance costs increasing with increasing deterioration of roads;
- Longer travel times and even loss of access if a road subsides.

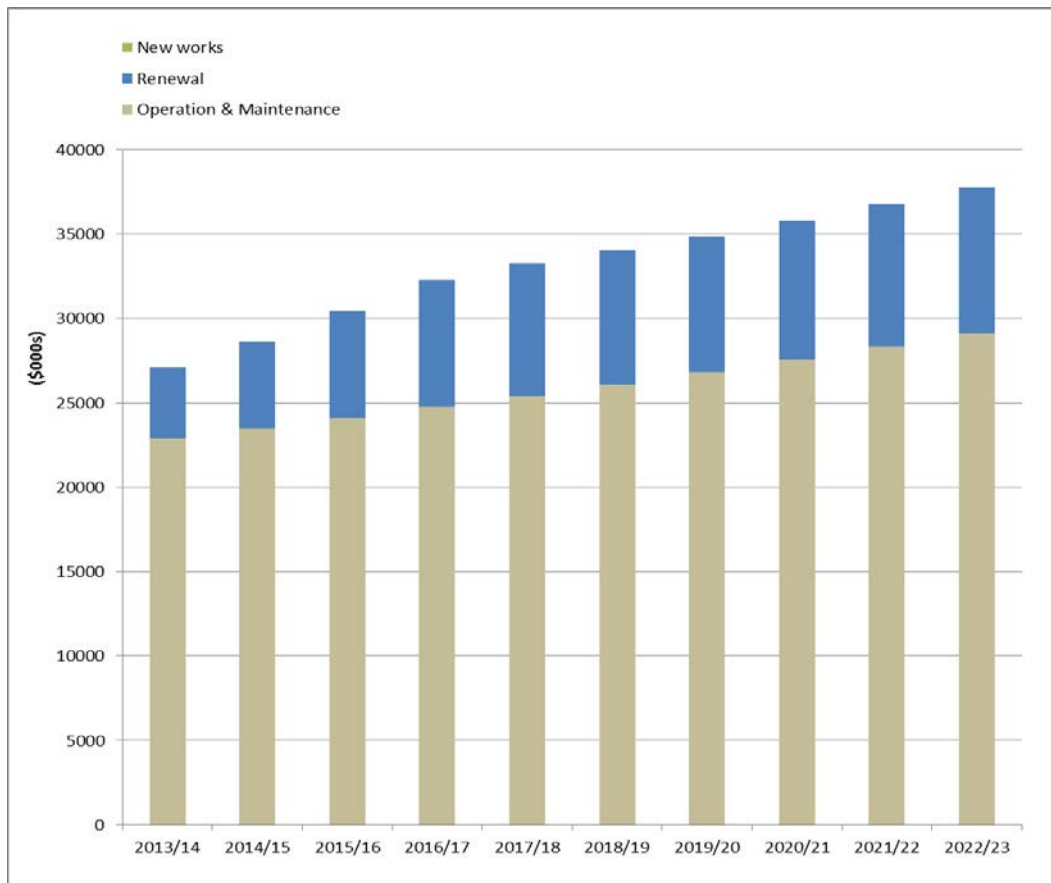
### 5a.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Higher costs of maintenance of road pavement assets;
- Loss of image;
- Increasing reactive works affecting planned works as resources are being diverted to repair defects;
- Road safety being compromised, thereby affecting the safety of pedestrians and vehicle occupants.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans actions and expenditures included within projected expenditures.

**Figure 5a.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



\*Source: Council's draft LTFP (25 Oct 2013)

## 5b. LIFECYCLE MANAGEMENT PLAN - BRIDGES

The Bridges Lifecycle Management Plan details how the organisation plans to manage and operate the bridge assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

**Table 5b.1: Current and Desired Service Levels- Bridges**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Percentage of bridges below condition 3  (Condition 3 has a rating of "Average" Condition for Concrete Bridges and "Fair" for Timber Bridges)	Condition rating carried out on an annual basis in conjunction with maintenance inspections	22% of bridges below Condition 3	>30% in Condition 3 or better
	Percentage of bridges with load limits implemented	Posting reviewed annually with formal assessments	To start measuring in July 2014	<10%
Maintenance	Percentage compliance with maintenance and cleaning schedules for bridge	Planned maintenance expenditure as percentage of asset value	To start measuring in July 2014	80%
Renewal	Number of timber bridges replaced with concrete or composite structures	Capital works projects completed	To start measuring in December 2013	2 per year (8 in total over 4 year delivery plan)
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each	Ratio of depreciated expense to depreciable amount	1.3%	

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
	year)			
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0.32%	1.3% to match rate of depreciation
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	22.56%	95 – 105%

## 5b.1 Background Data

### 5b.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

Council's bridges are an important class of assets in its road network and are a major investment of Council's resources. Council manages 39 concrete bridges and 129 timber bridges as part of the road transport infrastructure network. They provide for passage of vehicles, pedestrians and livestock over rivers, streams and other obstacles. Bridges either provide the single access route or an alternate route to any destination. Where alternative routes are available there is a cost resulting from the greater amount of travel required. Often bridges provide for direct and quick access. It is therefore necessary to manage bridge assets to ensure that they are maintained in a safe condition with cost efficient use of resources.

In the last few years council has evaluated its bridge network and has been progressively replacing some of its timber bridges as they are reaching end of their life (due to lower design life and high maintenance) to provide the community with safe and reliable access. In addition to full replacements, a program of major maintenance has been implemented on timber bridges to replace critical components and restore particular bridges to a serviceable condition. The condition of concrete bridges is varying from good to excellent and no replacements are anticipated within the next 20 years.

The timber bridges in general are tending to deteriorate at a fast rate due to the amount of components that are being used for the construction of a bridge and the varying rates of deterioration of those components due to a variety of reasons. The most significant factor in deterioration of a timber bridge structure is the penetration of moisture into components (particularly at connections), allowing the timber to rot and reducing the effective cross sectional area of the member. This in turn affects the maximum load that can be safely transported across the bridge. The load limit is usually dependent on the weakest structural component; therefore they require extensive monitoring and maintenance to ensure that they are capable of withstanding the design loads. Council's recent practice has identified opportunity's to extend the life of particular bridges through targeted replacement of critical members/components. This practice will continue to be a key part of Council's approach to managing this class of assets.

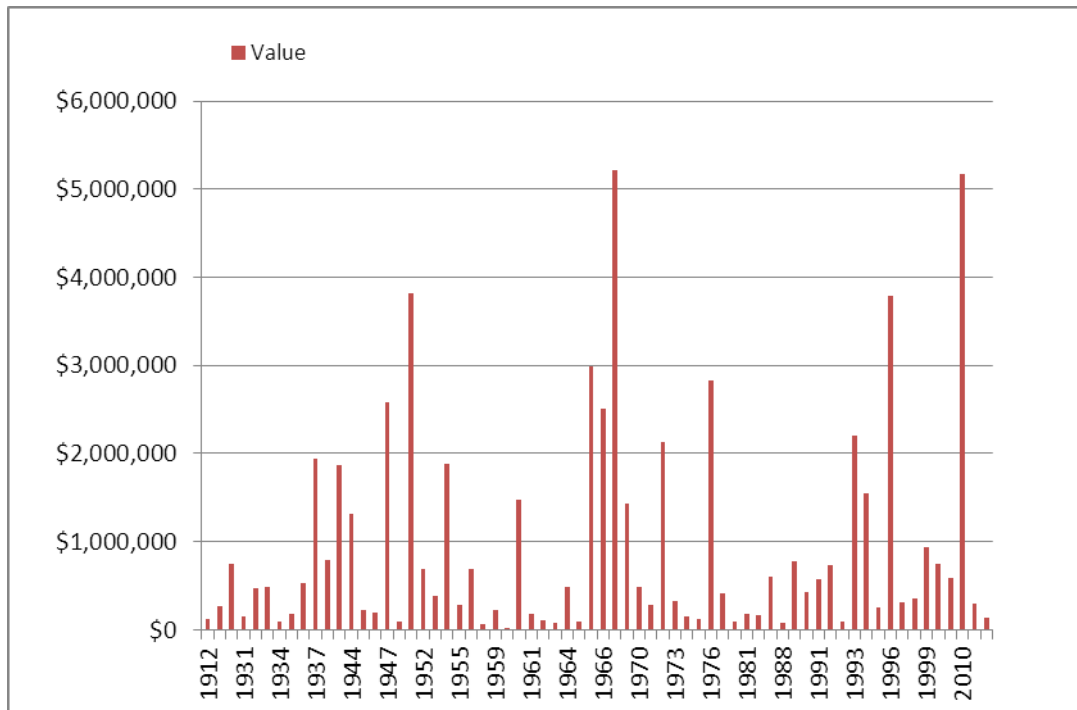


This Asset Management Plan (AM Plan) has been developed to provide a strategic and practical framework for the management of Council’s bridge network on regional and local roads.

Rural road culverts are separately covered in the Stormwater LCMP.

The age profile of the bridge assets included in this AM Plan is shown in Figure 5b.1.1 below.

**Figure 5b.1.1: Asset Age Profile**



Source: Council Asset Register





The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5b.1.1 below. Note that the bridges identified as at risk of significant failure are planned for repair or replacement.

**Table 5b.1.1: Known Service Performance Deficiencies**

Location	Service Deficiency
Timber bridge, Reserve Road, Grassy Head	Risk of significant failure. Currently in the investigation phase for replacement in this financial year.
Timber bridge, Mighell Road,- Mighells	Risk of significant failure, decayed capwales restricts the load limit to 20 tonnes overall and 10 tonnes per bogey. It is to be refurbished in February 2014.
Timber Bridge, Belmore River Left Bank Road - Buchannans	Defective girder replaced. It will be re-assessed in 3 years' time.
Timber bridge, Smiths Ck – Smiths Ck	Risk of significant failure. Major refurbishment due in March 2014.
Timber bridge, Yessabah Road – Clarkes	Risk of significant failure. Major refurbishment due in April 2014.
Timber bridge, Belmore River Right Bank Road - McCuddens	Risk of significant failure. It is scheduled to be replaced.
Timber bridge, Dungay Creek Road – Gills Gully	Risk of significant failure. To be replaced.
Bridge on Barbers Lane	The defective column and girder replaced and re-decked.

The above service deficiencies were identified from Council's four (4) year delivery plan 2012-2016 and bridge inspection reports from Bridge Design Pty Ltd dated June 2013 .

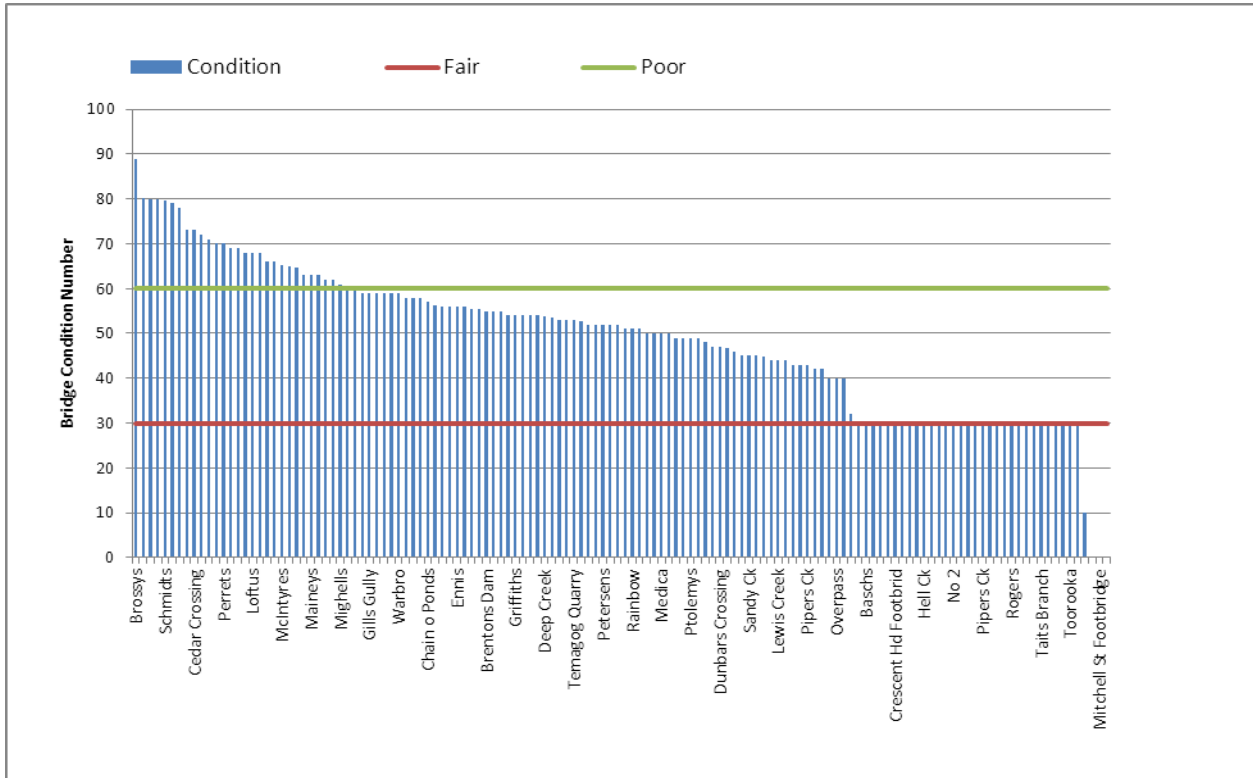
### 5b.1.2 Asset condition

Asset condition is monitored through a three level approach as follows:

- Level 1 - visual inspection of all bridges on an annual basis by Council's own operations staff. Timber bridges are inspected more frequently depending on the current state;
- Level 2 - timber bridges with issues identified through level 1 inspections are further tested to check the cross sectional area. These are used to check the load capacity externally;
- Level 3 - Full structural checks are undertaken by external structural engineers. The initial program involved 8 timber bridges being assessed. This process will continue each year based on the highest risks assessed from the Level 1 Inspections.

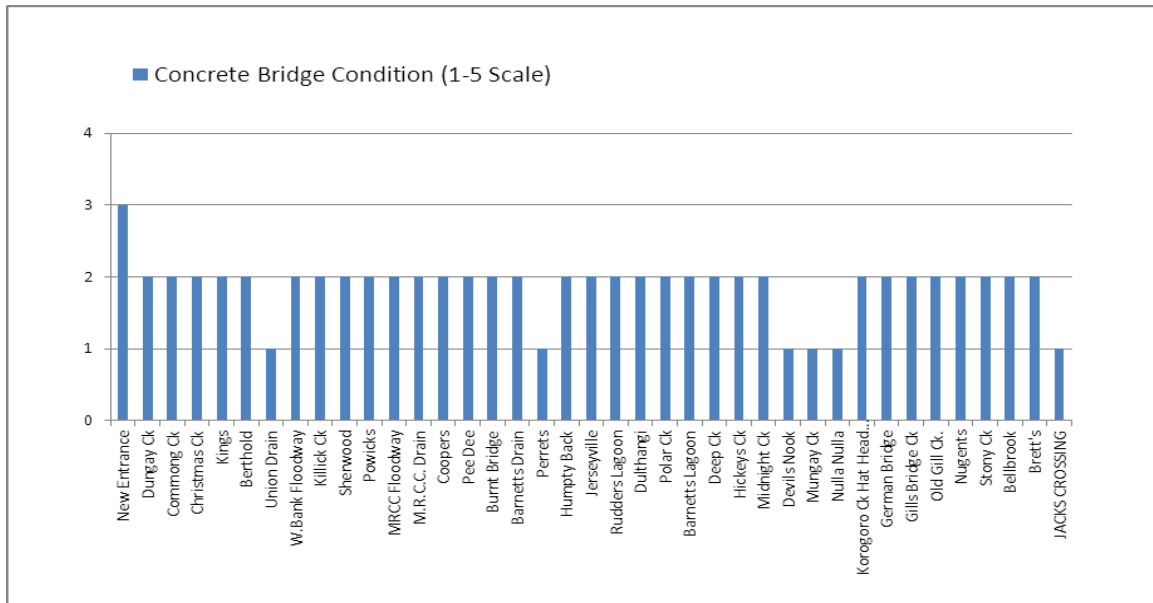
The condition profile of our timber and concrete bridge assets is shown in Figures 5b.1.1 & 5b.1.2

**Fig 5b.1.1: Asset Condition Profile Timber Bridges**



The timber bridges having a condition number 60 or over are in poor condition.

**Fig 5b.1.2: Asset Condition Profile Concrete Bridges**



Condition is measured using a 1 – 5 grading system<sup>13</sup> as detailed in Table 5b.1.2 below.

<sup>13</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

**Table 5b.1.2: Simple Condition Grading Model (Concrete Bridges)**

Condition Grading	Description of Condition
1	<b>Excellent:</b> No work required (normal maintenance)
2	<b>Good:</b> minor maintenance work required
3	<b>Average:</b> Maintenance work required
4	<b>Poor:</b> Renewal required
5	<b>Very Poor:</b> Urgent renewal/upgrading required

\*P76, Planning & Reporting Manual 2010, Produced by DLG

**Table 5b.1.3: Simple Condition Grading Model (Timber bridges)**

Bridge Condition Number (BCN)	Relative Condition Factor	Asset Condition	Description
< 10	1	New	New no work required (normal maintenance)
< 30	2	Good	No work required (normal maintenance)
30 < 60	3	Fair	Maintenance work required
> 60	4	Poor	Renewal required
Closed or Temporary Load Limit	5	Failed	Load limit in place or bridge closed – urgent repair or replacement required

### 5b.1.3 Asset valuations

The value of assets recorded in the asset register as at 30 June 2013 covered by this AMP are shown below. Assets were last revalued at 30 June 2011. Assets are valued at brownfield rates.

- Current Replacement Cost                      \$61,589,253
- Depreciable Amount                              \$61,589,253
- Depreciated Replacement Cost<sup>14</sup>              \$29,802,294
- Annual Depreciation Expense                  \$785,390

Useful lives were reviewed internally in June 2011. Council's Asset Revaluation Report (June 2011) provides the methodology used for assessing useful life and remaining lives for timber and concrete bridges.

Key assumptions made in preparing the valuations were:

- Unit rates for calculating replacement costs have been based in existing materials;
- 70% of timber bridges that are in a poorer condition have been rated using a model developed in line with the use of the Bridge Condition rating system. The remaining bridges have been nominally assessed as having 30% of their life expended as they are recognised as having a lower priority for condition assessment;
- The same value as a concrete bridge has been used for timber bridges as ultimately each timber bridge will be replaced with a concrete bridge over time.

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<sup>14</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Major changes from previous valuations are due to Council revaluing its road and associated infrastructure assets including the bridge assets as at 30 June 2011. The valuation was undertaken by Council staff and resulted in a net write on in valuation of \$11,293,669. As at 30 June 2013 the roads and associated infrastructure were indexed with reference to the ABS – Producers Price Index 6427.0 and an indexation increase at the rate of 7.399% was applied.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	1.28%	
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.32%	[average of NPV projected renewals of LTFP/DA]
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%	[no new/upgrades included in LTFP]
Rate of Annual Asset Upgrade/New (including contributed assets)	0%	

In 2013 the organisation plans to renew assets at 24.71%\* of the rate they are being consumed and will not be increasing its asset stock in the year.

#### 5b.1.4 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables show summary costs for the past five (5) years.

##### Repair and maintenance costs

<b>Bridges</b>		<b>2012/13</b>	<b>2011/12</b>	<b>2010/11</b>	<b>2009/10</b>	<b>2008/09</b>
	R & M	\$150,965	\$267,878	\$86,215	\$293,646	\$162,878
	Operational				\$285,299	\$259,776
	Depreciation	\$785,390	\$777,939	\$324,466	\$287,025	\$346,459
		<b>\$936,355</b>	<b>\$1,045,817</b>	<b>\$410,681</b>	<b>\$865,971</b>	<b>\$769,113</b>

##### Capital expenditure

		<b>2012/13</b>	<b>2011/12</b>	<b>2010/11</b>	<b>2009/10</b>	<b>2008/09</b>
<b>Bridges</b>		\$621,405	\$580,861	\$950,626	\$5,931,647	\$483,724

#### 5b.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan are summarised in Table 5b.2.1 below. These risks are reported to management and Council.

**Table 5b.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Bridge network	Structural damage	High (Likely, Major)	Detailed inspections of all bridges to identify defects and poor condition assets	High (Possible, Major)	To be confirmed
Bridge network	Bridge closure for public safety	High (Likely, Moderate)	Detailed inspections of all bridges to formally identify bridges prone to flooding and erosion	High (Possible, Moderate)	To be confirmed

### 5b.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5b.3.1 below.

**Table 5b.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
2012/13	\$150,965
2011/12	\$267,878
2010/11	\$86,215
2009/10	\$293,646
2008/09	\$162,878

Planned maintenance work is currently 68% of total maintenance expenditure.

#### 5b.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5b.3.2.

**Table 5b.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Deck (including superstructure)	To provide safe access across the bridge structure
Girders	Supports the deck and redistributes the loads to the Headstocks
Headstocks (including capwales)	Supports the girders at the end of each span and transfers the loads to the piers/piles
Piers/Piles	Holds the bridge superstructure (including the live loads) in position and prevents failure at the loads it is designed to operate
Abutment	It is an interface between the bridge and earthworks to ensure safe passage
Hand rail/Guard rail	It is to guide the traffic and personnel safely along the bridge deck

#### 5b.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5b.3.3 below.

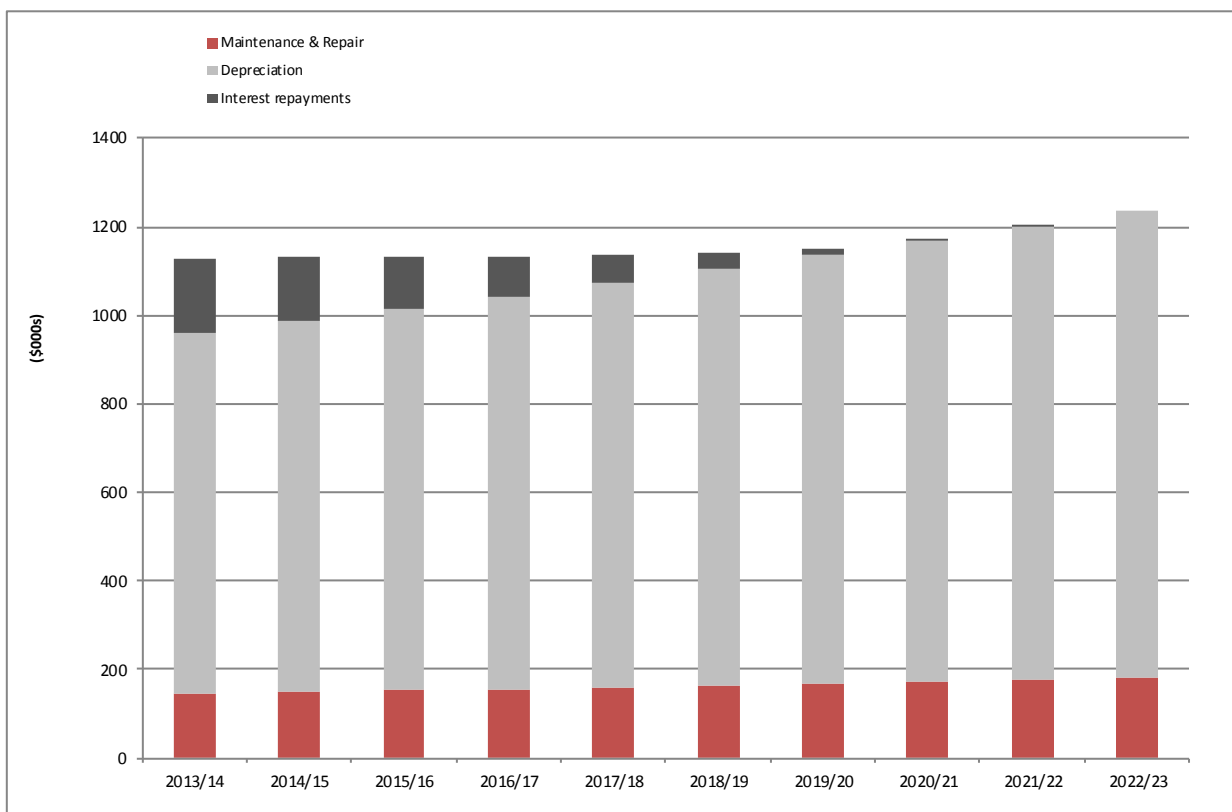
**Table 5b.3.3: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Bridges on school bus routes (e.g. concrete bridge on Sherwood Road frequently affected by flooding)	Flooding and failure of structural components	Inspection and recommissioning of bridge after a flooding event. Regular inspection and maintenance activities to ensure the continued usage.
Bridges which are the single point of access (e.g. Dunbars Crossing, Nulla Nulla)	Flooding, accident or earth slip causing partial or full closure, general deterioration due lack of maintenance	Inspection and recommissioning of bridge after a flooding event, earth slip or accident. Regular inspection and maintenance activities to ensure the continued usage.
Bridges with traffic volumes exceeding 100 vehicles per day (e.g. bridges on Macleay Valley Way)	Earth slip, flooding, deterioration or accident causing a partial or full closure temporarily.	Inspection and recommissioning of bridge after a flooding event, earth slip or accident.

**5b.3.3 Summary of future operations and maintenance expenditures**

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5b.3.1 below. Note that all costs are shown in inflated dollar values.

**Figure 5b.3.1: Projected Operations and Maintenance Expenditure – Bridges**



Source: Council’s draft LTFP (25 October 2013)

Deferred maintenance, ie works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the infrastructure risk management plan.

Maintenance is funded from the operating budget where available. This is further discussed in Section 6.2.

## 5b.4 Renewal/Replacement Plan

### 5.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5b.4.1 below. Asset useful lives were last reviewed in 2011.<sup>15</sup>

**Table 5b.4.1: Useful Lives of Assets**

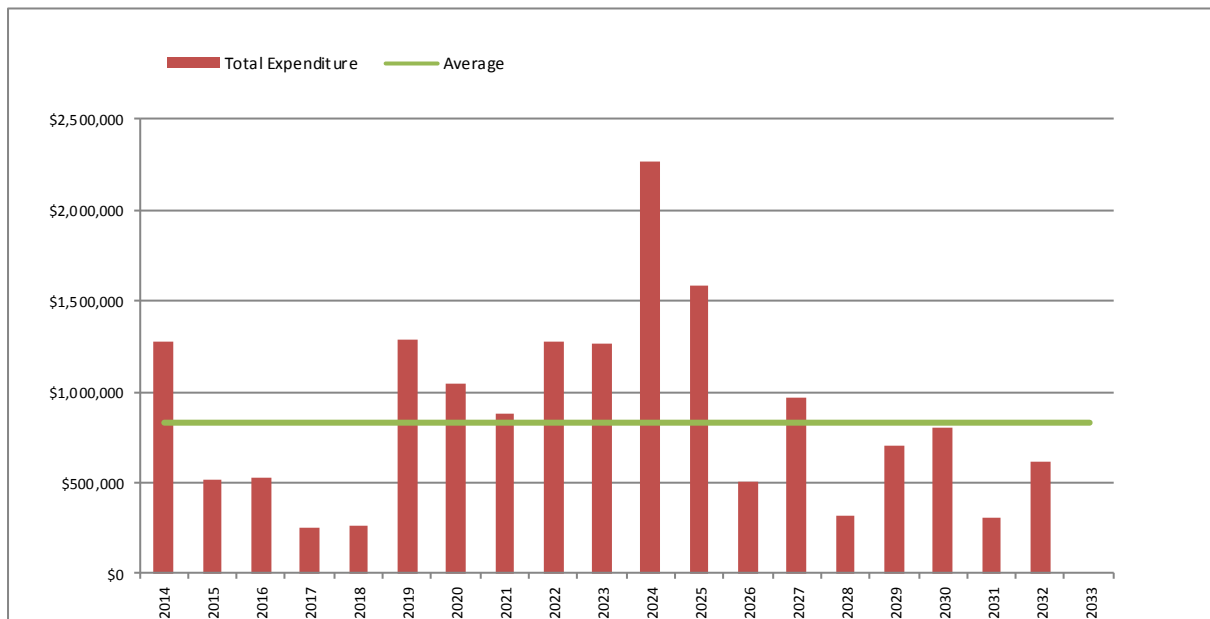
Asset (Sub)Category	Useful life
Timber Bridges	50 years
Composite (steel/concrete)	80 Years
Concrete Bridges	100 years

### 5b.4.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5b.4.2 below. Note that all amounts are shown in real values.

The projected capital renewal and replacement program is shown in Appendix B.

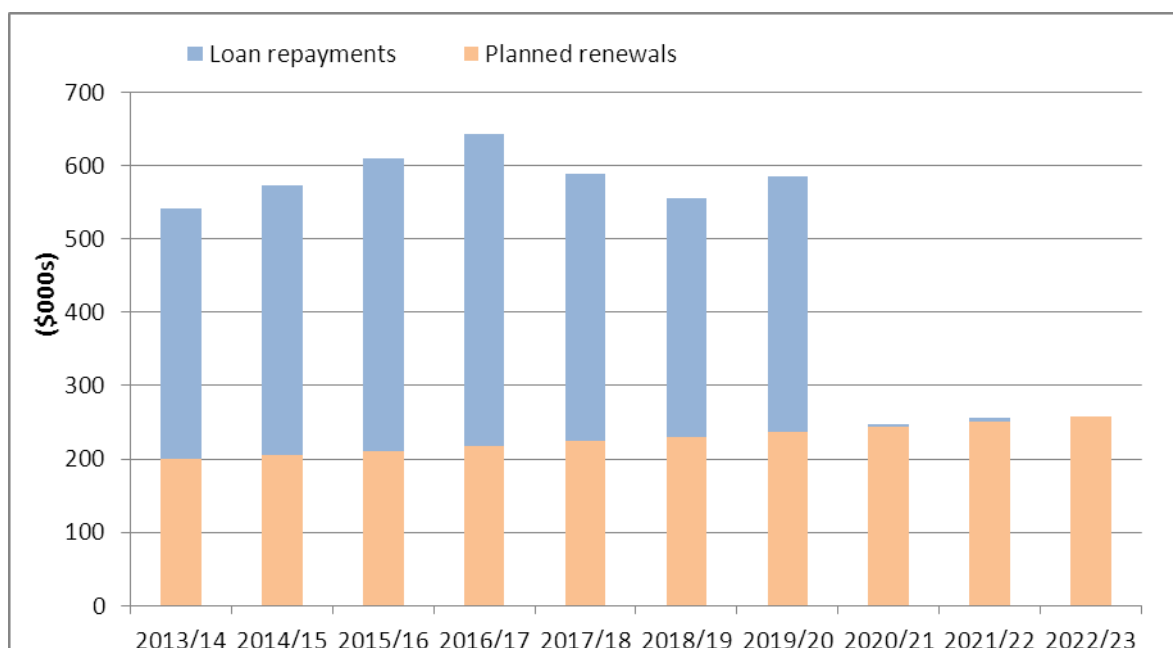
**Fig 5b.4.2: Projected Capital Renewal and Replacement Expenditure**



Source: Council Modelling (5 Nov 2013)

<sup>15</sup> KSC Asset Revaluation Report – June 2011

**Fig 5b.4.3: Ten year projections as per LTFP**



Source: Council's draft LTFP (25 October 2013)

The average renewal expenditure projected is \$834,000 per annum, while planned expenditure as per LTFP is approximately \$210,000 per year. This leaves a gap of nearly \$624,000 per year in renewal funding that is not funded for the next ten years and falls into the category of differed renewals. The lack of funding will have long term effect on Council's bridge assets and will gradually continue to deteriorate over the next ten years.

Council had recognised this and is in the process of rationalising its bridge assets by identifying those assets which are underutilised and/or of low value to the community in order reduce the expenditure on bridge assets.

## 5b.5 Creation/Acquisition/Upgrade Plan

### 5b.5.1 Summary of future upgrade/new assets expenditure

There are planned upgrades and investments on bridge assets in the ten year period of the Long Term Financial Plan, however Council has not planned for any new bridge assets for the next ten years.

## 5b.6 Disposal Plan

**Table 5b.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
Perrets Timber Bridge, Jerseyville	Surplus to needs, replaced in 2010 with a new concrete bridge on a different alignment. The old bridge was left for pedestrian access	When it is no longer suitable for this use it will be removed	\$10K	Nil – not currently maintained



## 5b.7 Service Consequences and Risks

### 5b.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- The projected funding levels required for repair/ replacement of timber bridges are not being met by the current renewal expenditure projected in the LTFP. Therefore considerable unfunded renewals may need to be prioritised over the next ten years as Council develops more accurate information on the condition of their timber bridges;
- Over the next ten years there may a need to provide additional heavy vehicle routes, livestock access routes and the need to review restricted access routes, where a need to upgrade some timber bridges may be required. These upgrades may not be able to be completed due to limitation in funding levels;
- There is bound to be more maintenance activities involved with timber bridges as some renewal projects may not be undertaken over the next ten years resulting in additional maintenance. This will cause pressure on existing maintenance resources and some maintenance work may have to be deferred due to prioritisation of maintenance work resulting in long term deterioration of timber bridges.

### 5b.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- Load restrictions being placed on such bridges until they are replaced/repaired;
- Load limitation will result in a higher portion of regular traffic being diverted to other routes causing inconvenience to some residents;
- Allocation additional of HMAS routes and/or additional livestock access routes will be limited causing inconvenience to the community resulting in more additional restricted access routes being created;
- Some members of the community will be affected due to local load limitations and access issues and are likely to be more aggressive in making their complaints.

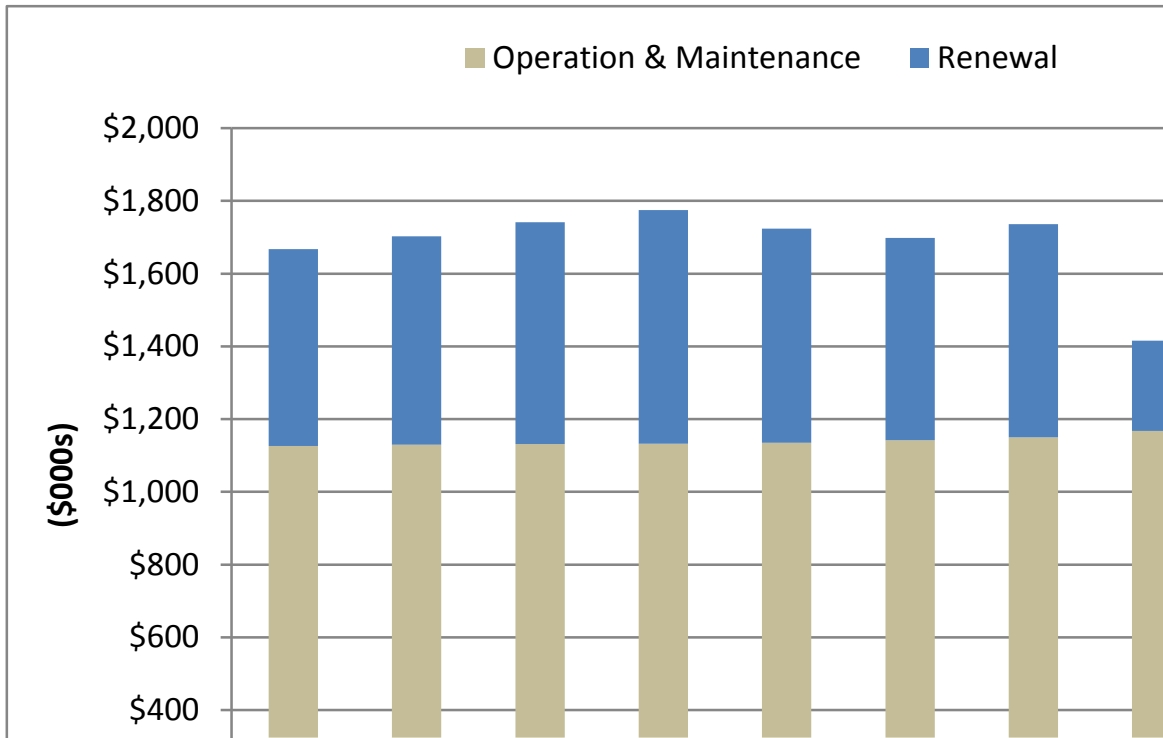
### 5b.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Compensation associated with an accident;
- Council losing goodwill of the affected members of the community;
- Loss of image for the Council;
- A likelihood of a bridge collapsing or failing;
- Maintenance and renewal costs increasing rapidly over time;
- Closure or load limiting of bridges resulting in residents having to travel a greater distance.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans, actions and expenditures included within projected expenditures.

**Figure 5b.7.1: Operation & Maintenance and renewal expenditure**



Source: Council's draft LTFP (25 October 2013)

## 5c. LIFECYCLE MANAGEMENT PLAN – KERB AND GUTTER

The Kerb and Gutter Lifecycle Management Plan details how the organisation plans to manage and operate the kerb and gutter assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

**Table 5c.1: Current and Desired Service Levels- kerb and gutter**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
Function – safety	All roads have even and consistent kerb and guttering free from hazards	Customer Service Requests Insurance claims/incidents	To start measuring in July 2014 then re set targets	<12 complaints regarding hazards per year  <2 kerb & gutter related insurance claims per year
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Kerb and gutter assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle	To start measuring in July 2014 on completion of condition survey	>95% of kerb and gutter assets in Condition 3 (Average Condition) or better condition
Maintenance	None identified at this stage			
Renewal	None identified at this stage			
	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	1.86%	
Asset sustainability ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0%	1.86%
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	0%	95 – 105%

## 5c.1 Background Data

### 5c.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

Council manages almost 157 kilometres of Kerbs and Gutter. The kerb and guttering within the Kempsey Shire Council catchment mainly consists of concrete, with some paving.

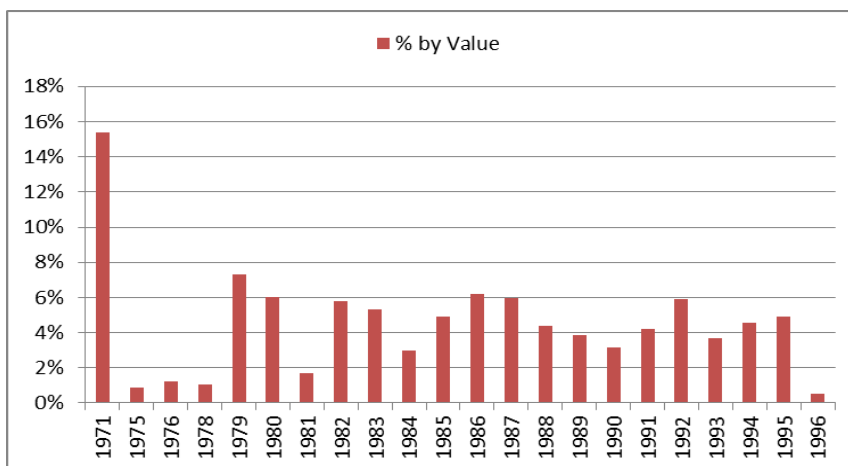
The majority of kerb and gutter are located within Kempsey and were built in the nineteen seventies (1970s), onwards. Currently Council maintains the kerb and gutter associated with arterial and regional roads such as Lords and Lachlan Streets that are managed by Roads Maritime Services (RMS) in addition to the local road network. The majority of the kerb and gutter assets have been prematurely damaged due lack of adequate sub soil drainage, poor subgrade preparation and the lack of/or insufficient pavement under kerb and gutter. This deterioration is compounded by heavy vehicles driving over kerbs and gutters or driving alongside the kerb on gutters that are not designed to take such loads.

Prior to the modernisation of domestic waste collection services, the edges of local roads would have rarely been subject to heavy vehicle loads. With the movement to single operator collections and multiple bins, there has been a significant increase in the level of loading now being applied to kerb and gutter infrastructure. As result of the poor construction standards applied at the time of original construction, there is an increasing proportion of kerb and gutter assets which have completely failed resulting in accelerated damage to other assets (mainly road pavement).



The age profile of the assets include in this AM Plan is shown in Figure 5c.1.1 below.

**Figure 5c.1.1: Asset Age Profile**



Source: Asset Register (some construction dates are estimated)

The graph shows that a majority of kerb and gutter assets were built in 1971. However this is an estimation of their built date based on their assessed remaining life as Council has no accurate construction records for some kerb and gutter assets.

### 5c.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

**Table 5c.1.1: Known Service Performance Deficiencies**

Location	Service Deficiency
Betts St – 18.5 m, Priority 10	Intervention reading 40-50 mm
Bloomfield St - 34 m, Priority 6	Intervention reading 70-170 mm
Cameron St. - 10 m, Priority 5	Intervention reading 100 mm
Carrai St. -12m, Priority 9	Intervention reading 80mm
Clarence Ryan Ave -33m, Pty 8	Intervention reading 50 – 120 mm
Cochrane St. 39.5 m, Pty 6	Intervention reading 100 mm
Colin Tait Ave, 36 m, Pty 6	Intervention reading 100 – 150 mm
Dangar St. 62.6 m, Pty 4	Intervention reading 70 -140 mm
Douglas Fentiman St 9 m, Pty 10	Intervention reading 60-145 mm
Edgar St 9 m, Pty 9	Intervention reading 90-170 mm
Geoffrey O'Hea St 81 m, Pty 10	Intervention reading 110 mm
Gladstone St. 10 m, Pty 6	Intervention reading 90-130 mm
Goonbi St 8 m, Pty 6	Intervention reading 110-200 mm
Government Rd 6 m, Pty 5	Intervention reading 100-110 mm
Great North Rd 63 m, Pty 8	Intervention reading 120-150 mm
Haven Crescent R344 54 m, Pty 5	Intervention reading 110-250 mm
Hughes Place. 31.5 m, Pty 9	Intervention reading 60 mm
Kemp St. 55.5 m, Pty 4	Intervention reading 90-100 mm
Lawson St 30 m, Pty 10	Intervention reading 60-145 mm
Leith St. 76 m, Pty 4	Intervention reading 90-170 mm
Little Rudder S 2 m, Pty 9	Intervention reading 95 mm
Macquarie St 43 m, Pty 5	Intervention reading 120 mm
Marsh St 42.5 m, Pty 6	Intervention reading 60-120 mm
North St 21.5 m, Pty 6	Intervention reading 70-75 mm
Pacific St 10 m, Pty 10	Intervention reading 80 mm
Panorama Ave 68.5 m, Pty 9	Intervention reading 50-100 mm
Park Street 47 m, Pty 5	Intervention reading 80-120 mm
Phillip Drive. 12 m, Pty 9	Intervention reading 80 mm
Queen St 29 m, Pty 5	Intervention reading 80-110 mm
Ronald Robinson Pl. 9 m, Pty 10	Intervention reading 70 mm
Seventeenth Ave. 15 m, Pty 9	Intervention reading 85-90 mm

Location	Service Deficiency
South St 76 m, Pty 8	Intervention reading 230 mm
Tozer St 246 m, Pty 7	Intervention reading 70-200 mm
Yarravel St 25 m, Pty 9	Intervention reading 95mm

The above service deficiencies were identified from 2011 priority list of works (kerb and gutter Replacement).

### 5c.1.3 Asset condition

Condition is monitored infrequently, however in 2011 an informal survey was carried out on majority of the network by in-house staff without a formal condition rating system. From this survey kerbs and gutters that needed renewal were identified using an intervention rating system and a prioritised long term renewal plan was developed.

The current condition profile of our assets is unknown as a comprehensive condition assessment has not been completed, only limited condition information is known on the defective sections. The condition profile will be included in the next revision of the AMP.

### 5c.1.4 Asset valuations

The value of assets recorded in the asset register as at 30 June 2013 covered by this asset management plan is shown below. Assets were last re-valued at June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$16,753,019
Depreciable Amount	\$16,753,019
Depreciated Replacement Cost <sup>16</sup>	\$6,818,691
Annual Depreciation Expense	\$311,532

Useful lives were reviewed in June 2011. The KSC Asset Revaluation Report – (June 2011) provides the methodology used for assessing useful life and remaining lives for Council assets including kerb and gutters.

Key assumptions made in preparing the valuations were:

- Unit rates have been based on 2011 revaluation and indexed ;
- Useful life of kerbs and gutters are based on the type of material and independent of their locations.

Major changes from previous valuations are due to Council revaluing its road and associated infrastructure assets including the bridge assets as at 30 June 2011. The valuation was undertaken by Council staff and resulted in a net write on in valuation of \$284,062. As at 30 June 2013 the roads and associated infrastructure were indexed with reference to the ABS – Producers Price Index 6427.0 and an indexation increase at the rate of 7.399% was applied.

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<sup>16</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	1.86%	(\$311,532/16,753,019*100)
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0%	(No planned renewals of K & G in LTFP)
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%	(No planned upgrades in LTFP)
Rate of Annual Asset Upgrade/New (including contributed assets)	0%	(No planned upgrades in LTFP)

In 2014 the organisation plans to renew assets at 0% of the rate they are being consumed and will not be increasing its asset stock in the year.

### 5c.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables shows summary costs for the past 5 years.

**Table 5c.1.2 Historical Data**

		2012/13	2011/12	2010/11	2009/10	2008/09
Kerb and Gutter	R and M	\$219,081	\$164,944	\$163,721	\$247,917	\$214,063
	Operational	-	\$6,078	\$22,274	\$167,491	\$173,135
	Depreciation	\$326,200	\$311,532	\$320,467	\$311,708	\$313,461
	Total	\$545,281	\$482,554	\$506,462	\$727,116	\$700,660
Capital Expenditure						
		2012/13	2011/12	2010/11	2009/10	2008/09
	Kerb and Gutter	\$69,392	\$28,064	\$12,042	\$1,822	\$10,000

### 5c.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan is operational are summarised in Table 5c.2.1 below. These risks are reported to management and Council/Board.

**Table 5c.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Kerb and Gutter	Kerb and gutter rolling over due to adjacent heavy vehicular traffic	High	Implement an maintenance management system	High	To be confirmed

### 5c.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5c.3.1 below.

**Table 5c.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
	Planned and Unplanned
2012/13	\$219,081
2011/12	\$164,944
2010/11	\$163,721
2009/10	\$247,917
2008/09	\$214,063

Planned maintenance work is currently 30% of total maintenance expenditure.

It is considered that some of the maintenance being undertaken should be treated as capital renewal and Council should develop better tracking and recording methods to capture this and accurately account for this. This will be undertaken in future revisions of the AM Plan.

#### 5c.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5c.3.2 below.

**Table 5c.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
The kerbs and gutters are broken to segments blocks that are parallel to road segments	It is done with the intention of managing the kerb and gutter network. The segments assist to identify, inspect, repair and/or renew the network. The segments range in priority according to the same priority adopted for the adjoining road.

#### 5c.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5c.3.3 below.

**Table 5c.3.3: Critical Assets and Service Level Objectives**

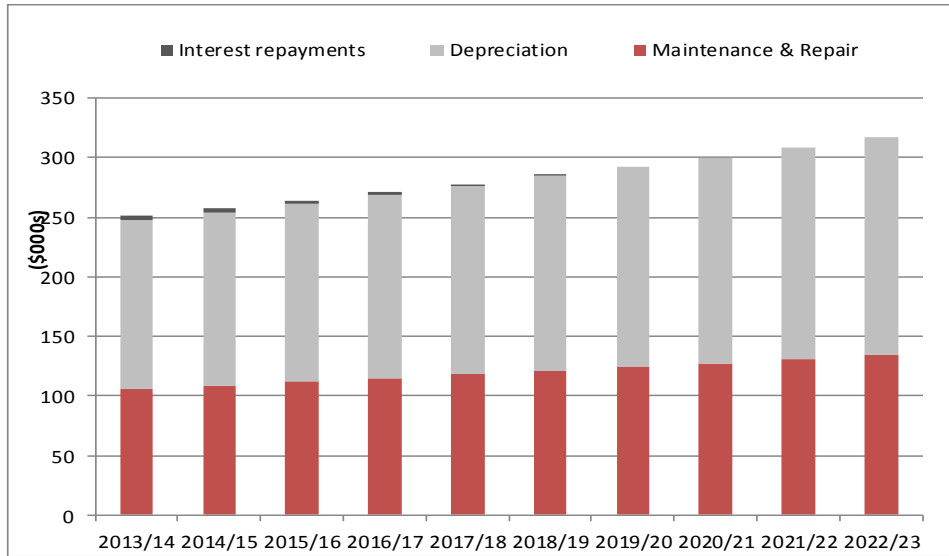
Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Kerbs and gutters those are adjacent to roads that are highly utilised such as arterial and regional roads.	Uplifting or settlement, tilting or rotation, chipping, cracking, AC in gutter tray, water ponding after rain, slippery or slimy surface, weed infestation. Any one or a combination of those defects constituting a high risk.	Kerb provides a safe interface between road users and pedestrians, while the gutter channels the surface water away from the road surface. A condition survey conducted in 2011. Defect management using reflect software to identify, document and rectify defects.



### 5c.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5c.3.1 below. Note that all costs are shown in inflated dollar values.

**Figure 5c.3.1: Projected Operations and Maintenance Expenditure**



Source: Council's draft LTFP (25 October 2013)  
 Note that the budget figures are inflated.

### 5c.4 Renewal/Replacement Plan

#### 5c.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5c.4.1 below. Asset useful lives were last reviewed on June 2011.<sup>17</sup>

**Table 5c.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Concrete	80
Paving	60

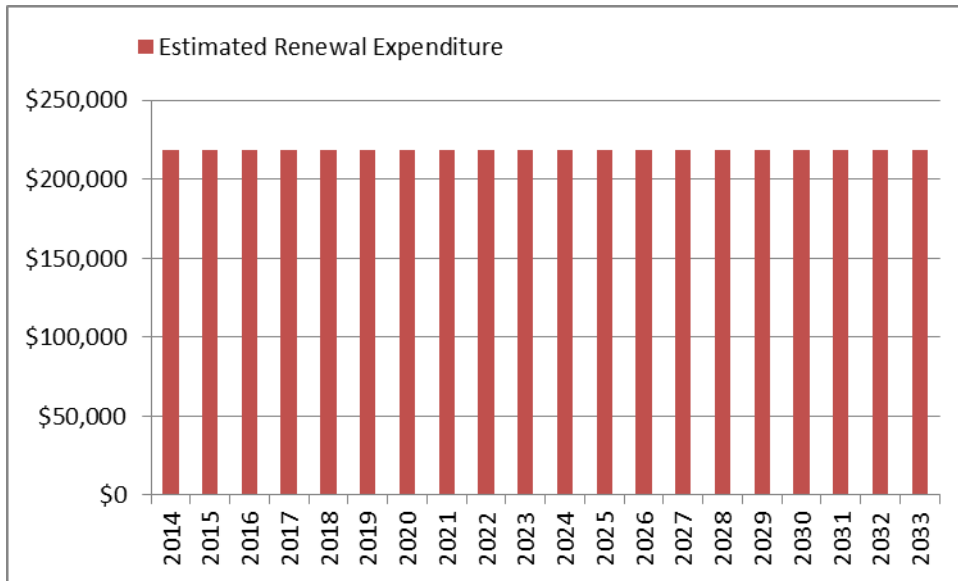
#### 5c.4.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5c.4.1 below. Note that all amounts are shown in real values.

<sup>17</sup> KSC Asset Revaluation Report 2011

The projected capital renewal and replacement program is shown in Fig 5c.4.2 below.

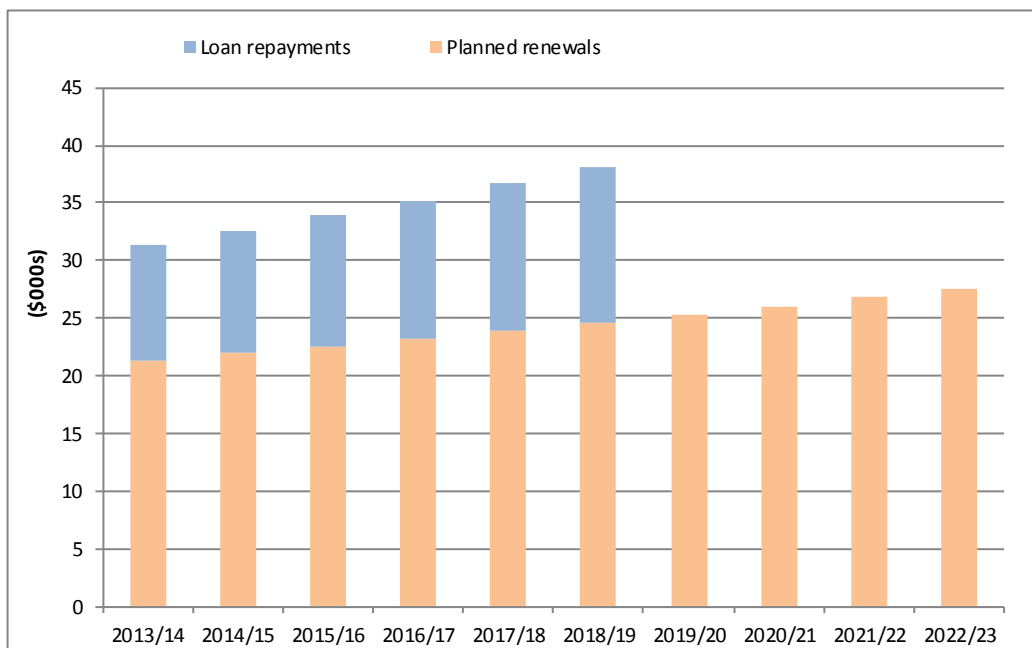
**Fig 5c.4.1: Estimated Renewal Expenditure**



Source: Asset Valuation Register

\*Based on average useful life of 76.74 years as a majority of kerbs and gutters consists of concrete although some consists of paving.

**Fig 5c.4.2: Projected Capital Renewal and Replacement Expenditure**



Source: Council's draft LTFP (25 October 2013)

Note that the budget figures are inflated.

Average renewal expenditure required per year is based on simple modelling (Value/Composite useful life). The average expenditure per year required is \$218,309. The LTFP has no budget for any renewals over the next ten years. This leaves a gap of \$218,000 in renewal funding per year for the next ten years. This will

cause the kerb and gutter assets to deteriorate over the longer term. The average budgeted expenditure for maintenance and repair in the LTFP is approximately \$8,000 in 2013 dollars.

## 5c.5 Creation/Acquisition/Upgrade Plan

### 5c.5.1 Summary of future upgrade/new assets expenditure

There are no new kerb and gutter assets planned in the Long Term Financial Plan. Some upgrade works are carried out along with road renewal work sometimes, but they are usually captured as renewal expenditure currently.

## 5c.6 Disposal Plan

**Table 5c.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No assets currently identified				

## 5c.7 Service Consequences and Risks

### 5c.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- All renewal work that had been identified as necessary in the 2011 Kerb and Gutter survey to be carried out over the next few years are unfunded in the LTFP.
- Some Kerb and Gutter renewal work needs to be co-ordinated with road resealing /rehabilitation programmes. Such work on Kerb and Gutter may be restricted by the lack of funding or be carried out under the works programme.
- The funding of Kerb and Gutter repair and maintenance is approx. \$8k per year. With such funding only high risk maintenance is likely to be carried out resulting medium rated risks being unattended to. These are likely to deteriorate further and move to high risk category over a few years

### 5c.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- The defects on Kerb and Gutter can cause safety issues to the public such as the road users and those walking on footpaths
- Accumulation of debris and weed growth causing blockages or flow restrictions on stormwater causing ponding or localised flooding.
- Water ponding/ slipperiness causing trips and falls.
- In the worst cases residents will be unable to access their properties in their vehicles without using other measures to assist the to get over the Kerb and Gutter.

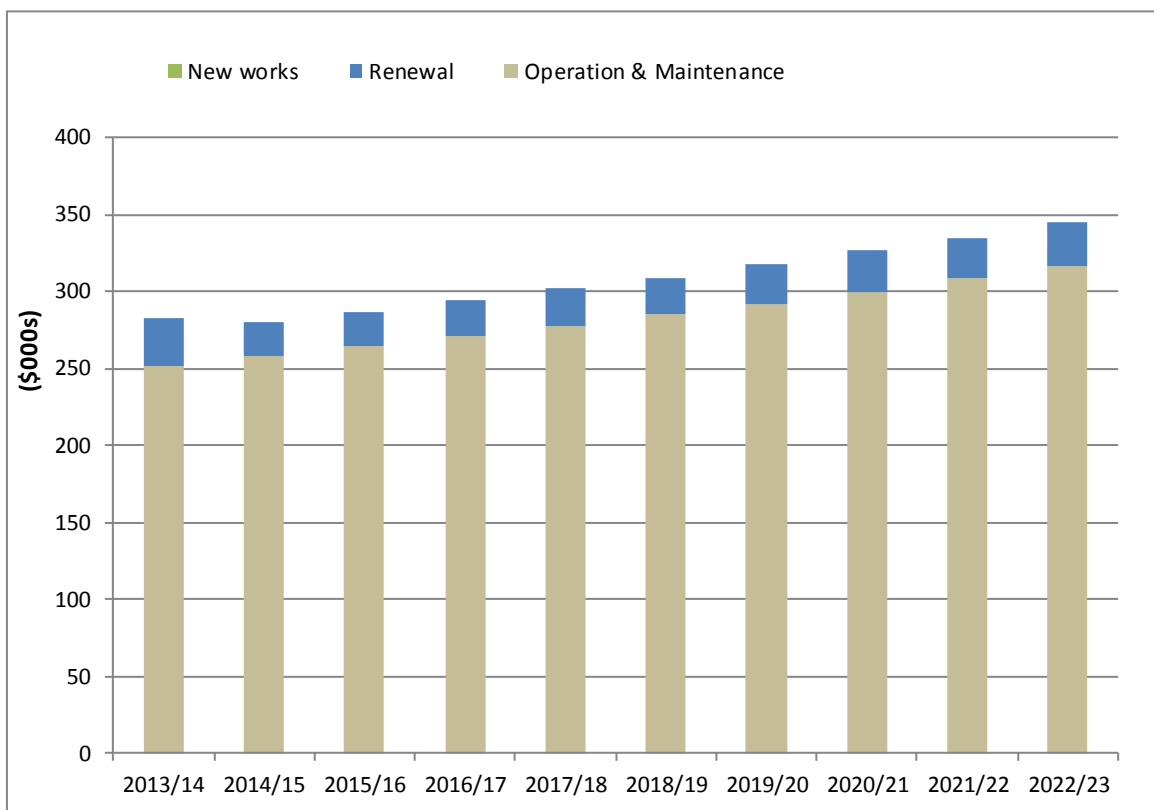
### 5c.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Increase of complaints from residents;
- Increase of public liability claims;
- Higher future costs associated with repair and renewals due to lack of investment in the maintenance of the assets in the next few years.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans actions and expenditures included within projected expenditures.

**Figure 5c.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source:

Council's draft LTFP (25 October 2013)

Note that the budget figures are inflated.

## 5d. LIFECYCLE MANAGEMENT PLAN - FOOTPATHS AND CYCLEWAYS

The Footpath and Cycleways Lifecycle Management Plan details how the organisation plans to manage and operate the footpath and cycleway assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

**Table 5d.1: Current and Desired Service Levels q- footpaths**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
Function – safety	Number of people using footpaths daily	6 monthly site inspections at selected sites	To start measuring in July 2014	3,000
	Number of pedestrian injuries on road network (based on 3 year rolling average)	Collate RMS accident data	To start measuring in July 2014	To start target after baseline set
	Provision of safe footpaths for suitable for walking that is free from hazards and obstructions	Customer Service Requests Insurance claims/incidents	To start measuring in July 2014	<12 complaints regarding hazards per year  <2 footpath related insurance claims per year
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Footpath assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle	73% of footpaths in fair or better condition (September 2013)	>95% of footpaths in fair or better condition
Maintenance	None identified at this stage			
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			

OVERALL ASSET MANAGEMENT SUSTAINABILITY				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	2.02%	
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0.31%	2.02%
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	9.01%	95 – 105%

## 5d.1 Background Data

### 5d.1.1 Physical parameters

The footpath and cycleway assets covered by this Asset Management Plan are shown in Table 2.1.

Council manages almost 62 kilometres of footpaths and cycleways as per condition survey conducted recently in 2013. The type of footpaths and cycleways within the Council boundaries consists of concrete, asphalt, paving and gravel. Only 38 km are recorded and valued in the asset register and now it requires to be updated and valuation of the additional assets needs to occur.

The majority of the footpaths are located in Kempsey, although footpaths have been established at South West Rocks, Crescent Head, Stuart Point, Frederickton, Bellbrook, Smithtown and Gladstone. The majority of the footpaths are constructed as concrete, with some being asphalt, paving or gravel.

Age profile information is not currently available and will be developed in future revisions of the asset management plan.

Studies undertaken in Southern Queensland have identified that approximately 60% of the community regularly uses the footpath network each day/week. Generally this use is associated with recreational activity. This indicates that this particular asset group is highly valued by the community and is very well utilised. The study results add weight to further investment in this form of infrastructure, particularly connecting key or desire nodes together as it is relatively low in capital and maintenance costs for the level of benefit derived from the community. Having a good footpath/bicycle path network builds an alternative to using vehicles for transport and regular use by the community aid in building community wellbeing.



### 5d.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5d.1.1 below. These are all for assets with known very poor condition.

**Table 5d.1.1: Known Service Performance Deficiencies**

Location	Service Deficiency
Eden St between Austral Ave & Sydney St, Kempsey	264 m in very poor condition (condition grade 5)
Forth St between Yaelwood St & Holman, Kempsey	35 m in very poor condition (condition grade 5))
Forth St between Holman St and Regent St, Kempsey	80 m in very poor condition (condition grade 5))
John St between Belgrave St & Verge Ln, Kempsey	30 m in very poor condition (condition grade 5))
John St between Verge Ln & Verge St, Kempsey	39 m in very poor condition (condition grade 5))
John St between Verge Ln & Eden St Kempsey	98 m in very poor condition (condition grade 5))
Lachlan St between Bloomfield St and Druitt St, South Kempsey	114 m in very poor condition (condition grade 5))
Lord St between M and Herborne Ave, East Kempsey	135m in very poor condition (condition grade 5))
Regent St between Forth St and End, Kempsey	193 m in very poor condition (condition grade 5))
Tozer St between Jubilee Ln and Short St, West Kempsey	110 m in very poor condition (condition grade 5))
Pacific Hwy between Macleay St & Rawson St, Frederickton	53 m in very poor condition (condition grade 5))

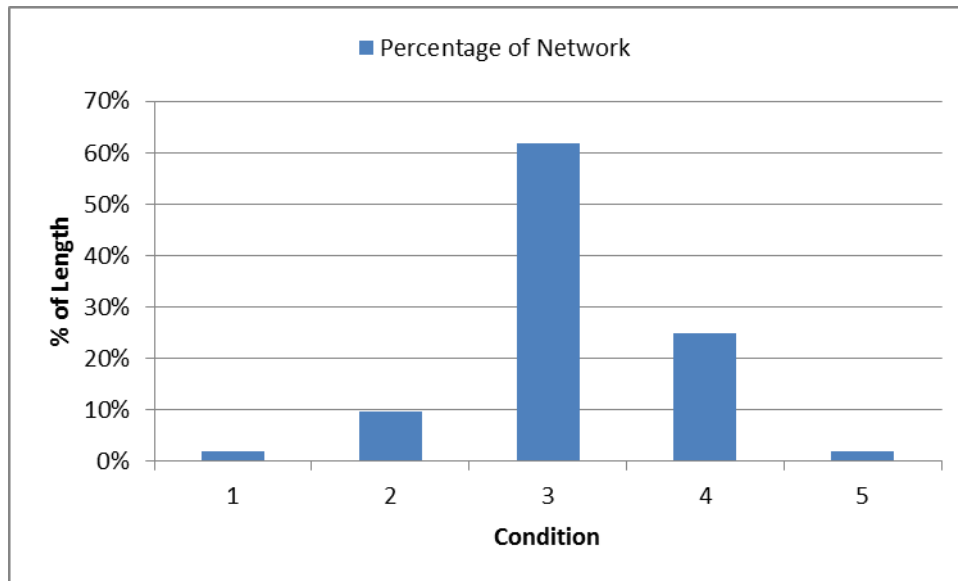
The above service deficiencies were identified from 2013 Condition Survey of Footpaths.

### 5d.1.3 Asset condition

Condition is monitored infrequently but was last done in June 2013 along with the road condition monitoring survey.

The condition profile of our footpath and cycleway assets is shown in Figure 5d.1.1 below. This shows that 73 per cent are on fair to very good condition, and 27 per cent are in poor to very poor condition. Council has a current investment deficit compared with the optimum profile with a large proportion on condition grades 4 and 5 (27 versus 5 per cent). There are also future liabilities as the asset currently in condition grades 3 and 4 deteriorate to condition grades 4 and 5 respectively.

**Fig 5d.1.1: Asset Condition Profile- footpaths**



\*The condition profile was based on 2013 condition survey

Condition is measured using a 1 – 5 grading system<sup>18</sup> as detailed in Table 5.1.3.

**Table 5d.1.2: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Very Good:</b> New construction, with perfect alignment and as new surface condition displaying no defects, substantial surface blemishes, post construction patching or reinstatements.
2	<b>Good:</b> Sound construction with good surface condition and no perceptible distortion but may show limited surface ageing or joint stepping < 15mm, successful reinstatements, isolated slight surface grinding or minor distress not exceeding 10% of the inspection area.
3	<b>Fair:</b> Reasonable construction with a serviceable surface showing some surface aging and or signs of minor surface defects, moderate to heavy surface grinding, areas of substantial surface deterioration or distortion. Such distortions may consist of stepping which is estimated to be typically between 15mm – 30mm vertical movement or reasonably obvious undulations typically up to 75mm or the presence of non-reinstated sections. The extent of Minor and Major defects will typically affect <25% and <10% respectively of the area targeted for assessment.
4	<b>Poor:</b> Construction may display substantial surface deterioration from material oxidation over the majority of the surface and or between 25% to 50% or <25% of minor or major defects respectively or distortion which may consist of stepping estimated to be typically but not exclusively between 30mm to 50mm vertical movement or obvious undulations typically between 75 to 150mm and obtrusive to pedestrian traffic
5	<b>Very Poor:</b> Construction displays >50% or >25% areas of minor or major surface distress respectively, extreme ageing, substantial distortion typically > 150mm and a likely impediment to pedestrian traffic or the presence of >50mm trip or shear displacements within the predominant pedestrian traffic area.

<sup>18</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.



Notes:

- The above definitions are considered generic and apply to all hard standing constructions regardless of material type.
- Minor Defects includes Cracking <5mm wide, Chipping or spalling <150mm diameter & <25mm depth, corner or edge breaks < 150 diagonal <15mm distortion.
- Major Defects includes Cracking >5mm width, Cracking with >5mm differential movement, Stepping >25mm, Distortion >75mm, Inadequate surface grip.



#### 5d.1.4 Asset valuations

The value of assets recorded in the asset register as at 30 June 2013 covered by this asset management plan is shown below. Assets were last revalued at June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$6.793,106
Depreciable Amount	\$6.793,106
Depreciated Replacement Cost <sup>19</sup>	\$3.875,724
Annual Depreciation Expense	\$137,072

Useful lives were reviewed in June 2011 by Infrastructure Department. A KSC Asset Revaluation Report – (June 2011) provides the methodology used for assessing useful life and remaining lives for Council assets including footpaths.

Key assumptions made in preparing the valuations were:

- Unit rates have been based on 2011 revaluation and indexed;
- Useful life of footpath are based on the type of material and independent of their locations;
- Average renewal expenditure is based on composite useful life and 2012/13 valuation.

Major changes from previous valuations are due to Council revaluing its road and associated infrastructure assets including the bridge assets as at 30 June 2011. The valuation was undertaken by Council staff and resulted in a net write on in valuation of \$270,062. As at 30 June 2013 the roads and associated infrastructure were indexed with reference to the ABS – Producers Price Index 6427.0 and an indexation increase at the rate of 7.399% was applied.

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<sup>19</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	2.02%	(\$137,072/\$6,793,106*100)
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.31%	(NPV of LTFP Exp./yr(\$20,720)/\$6,793,106*100)
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%	(no new works planned)
Rate of Annual Asset Upgrade/New (including contributed assets)	0%	(None documented)

In 2014 the organisation plans to renew assets at 15.12% of the rate they are being consumed and will not be increasing its asset stock in the year.

### 5d.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables shows summary costs for the past 5 years.

	2012/13	2011/12	2010/11	2009/10	2008/09
<b>R and M</b>	\$91,463	\$136,558	\$103,900	\$166,424	\$146,341
<b>Operational</b>	-	\$268	-	\$89,513	\$77,232
<b>Depreciation</b>	\$139,215	\$134,961	\$146,218	\$146,619	\$143,244
<b>Total</b>	<b>\$230,678</b>	<b>\$271,788</b>	<b>\$250,118</b>	<b>\$402,557</b>	<b>\$366,817</b>
<b>Capital</b>	\$25,061	\$48,918	-	\$4,995	\$116,394

### 5d.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan is operational are summarised in Table 5d.2.1 below. These risks are reported to management and Council.

**Table 5d.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Footpath network	Injury from trips and hazards	High (Likely, Moderate)	Site investigations, review footpath renewal programme, analyse footpath condition data and develop strategies to address current issues; implement maintenance management system	High (Possible, Moderate)	To be determined

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

### 5d.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5d.3.1 below.

**Table 5d.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
	Planned and Unplanned
2012/13	\$91,463
2011/12	\$136,558
2010/11	\$103,900
2009/10	\$166,424
2008/09	\$146,341

Planned maintenance work is currently 30% of total maintenance expenditure.

#### 5d.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5d.3.2 below.

**Table 5d.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
The footpaths are broken to segment blocks that are parallel to road segments.	Primarily to identify, inspect, repair and/or renew the footpath network

#### 5d.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5d.3.3 below.

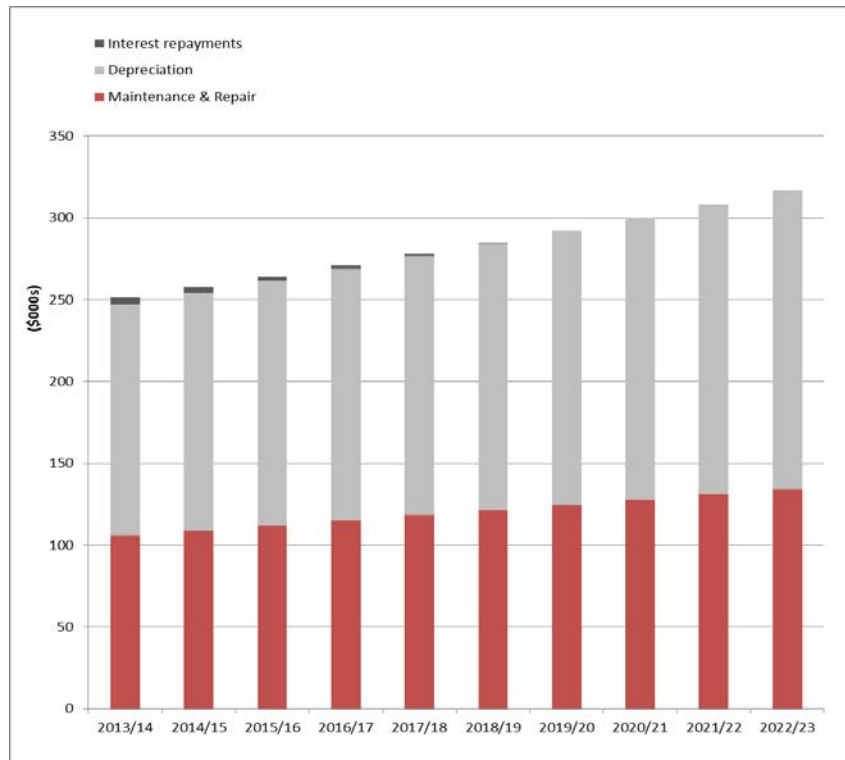
**Table 5d.3.3: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Busy cycle and footpaths that are highly utilised	Safety concerns to the users	Utilised for cycling and walking. Defect identification by using Reflect. Condition audit last carried out in 2103.
Assets near high risk locations such as schools, aged care facilities and medical businesses	At risk members of the community more likely to trip on an uneven footpath due to partial incapacity potentially resulting in significant injury	Utilised for cycling and walking. Defect identification by using Reflect. Condition audit last carried out in 2103. More frequent inspection of condition and rectification of defects.

#### 5d.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5d.3.1 below. Note that all costs are shown in current inflated dollar values.

**Figure 5d.3.1: Projected Operations and Maintenance Expenditure**



Source: Councils draft LTFP (18 October 2013)  
 Note that the budget figures are inflated.

## 5d.4 Renewal/Replacement Plan

### 5d.4.1 Renewal Plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5d.4.1 below. Asset useful lives were last reviewed in June 2011.<sup>20</sup>

**Table 5d.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Concrete	50
Asphalt	40
Paved	30
Gravel	20

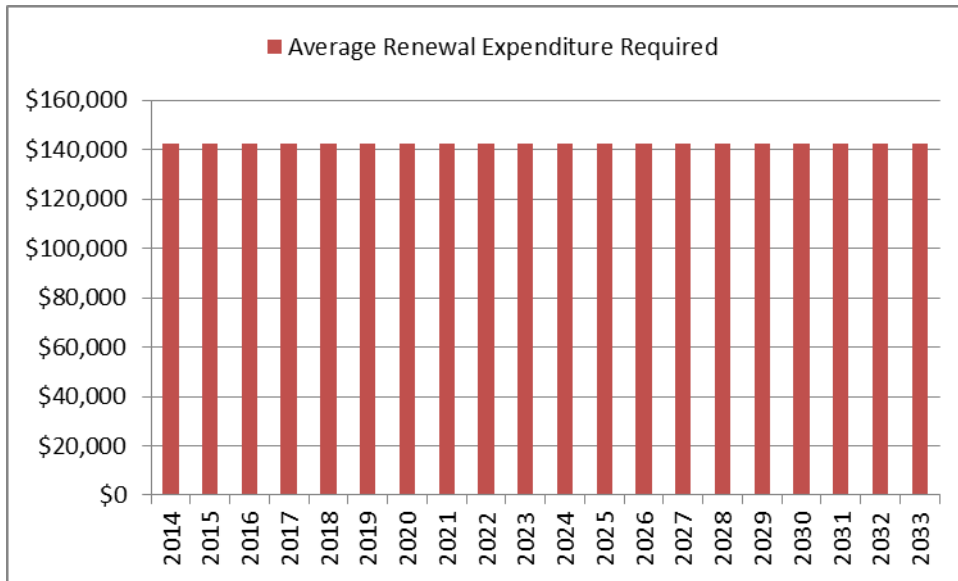
### 5d.4.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5d.4.1 below. Note that all amounts are shown in real values.

<sup>20</sup> KSC Asset Revaluation Report – June 2011

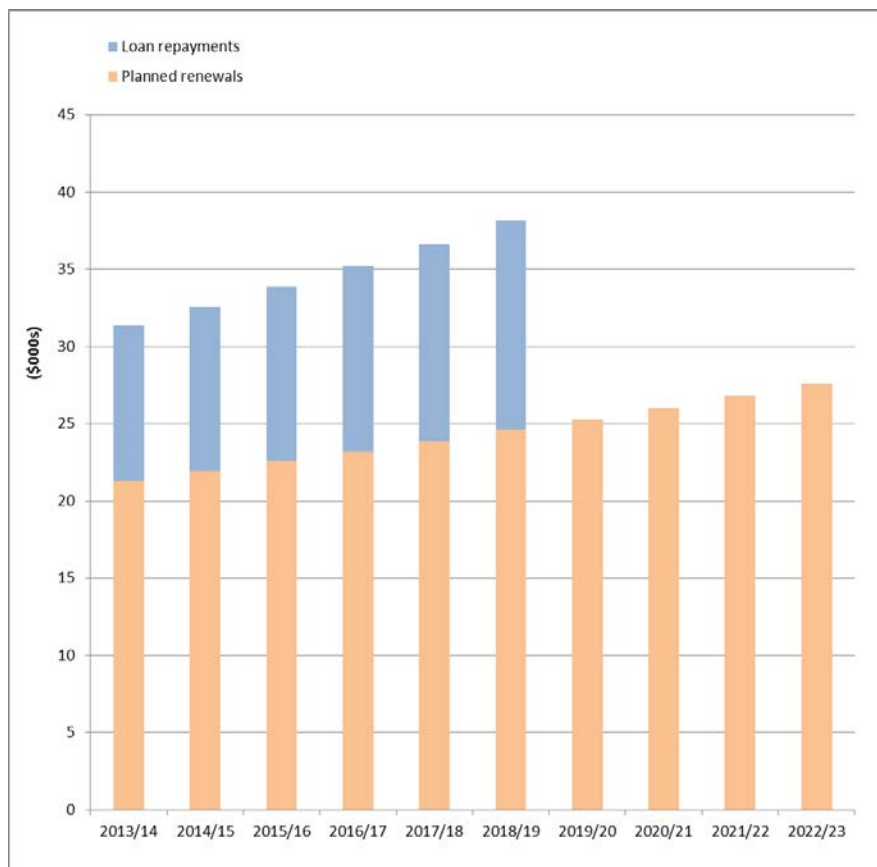
The projected capital renewal and replacement program is shown in Fig 5d.4.2 below.

**Fig 5d.4.1: Estimated Renewal Expenditure - age based**



*\*Based on average useful life of 48.7 years as the footpaths are a mix of concrete, asphalt and paving. It is based on the 38 km of footpath assets recorded in the Asset Register.*

**Fig 5d.4.2: Planned Capital Renewal and Replacement Expenditure LTFP**



Source: Councils draft LTFP (18 October 2013)

Note that the budget figures are inflated.

Average renewal required per year based on simple modelling (Value/ Composite useful life) is \$142,541 per year. This figure is based on the 38 km of footpath in the asset register. There is however 62 km of footpaths in the Council recorded from the 2013 condition survey. This means a total of approx. \$230,000 of funding will be required per year when calculated on a pro-rata basis. The renewals planned in 2013 dollars are \$20,720. This results in a shortfall of \$210,000. However LTFP has a budgeted R and M expenditure of approx. \$120,000 per year, which will cover a fair percentage of renewals too, depending on the capitalisation threshold. This indicates that the real shortfall in renewals funding is more likely to be \$130,000 per year.

## 5d.5 Creation/Acquisition/Upgrade Plan

### 5d.5.1 Summary of future upgrade/new assets expenditure

There are no new footpath assets planned LTFP. Council regularly lodges grant funding applications to extend the recreational footpath network on the basis that the grants are 100% externally funded.

## 5d.6 Disposal Plan

This asset group is considered to be a lower priority group than other transport assets and as the condition of the infrastructure deteriorates there will be a need to review the warrant for that providing infrastructure in its current location. It is likely that some footpaths will be identified to be disposed of at the end of their effective lives rather than be replaced. This disposal plan will be developed for future revisions of the AM Plan. In addition to this planned disposal, if the risk posed by a footpath became too significant and funding was not available for repair or replacement then disposal without replacement will become a viable option for Council to address particular circumstances.

**Table 5d.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No footpaths are yet identified for disposal				

## 5d.7 Service Consequences and Risks

### 5d.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- All new works due lack of funding for new projects in the LTFP;
- 24 km of footpath not recorded in the Asset Register. Therefore the maintenance including renewals are not funded.

### 5d.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- General deterioration of footpath network;
- General increase of risks to the users due to increase in defects over the LTFP.

### 5d.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

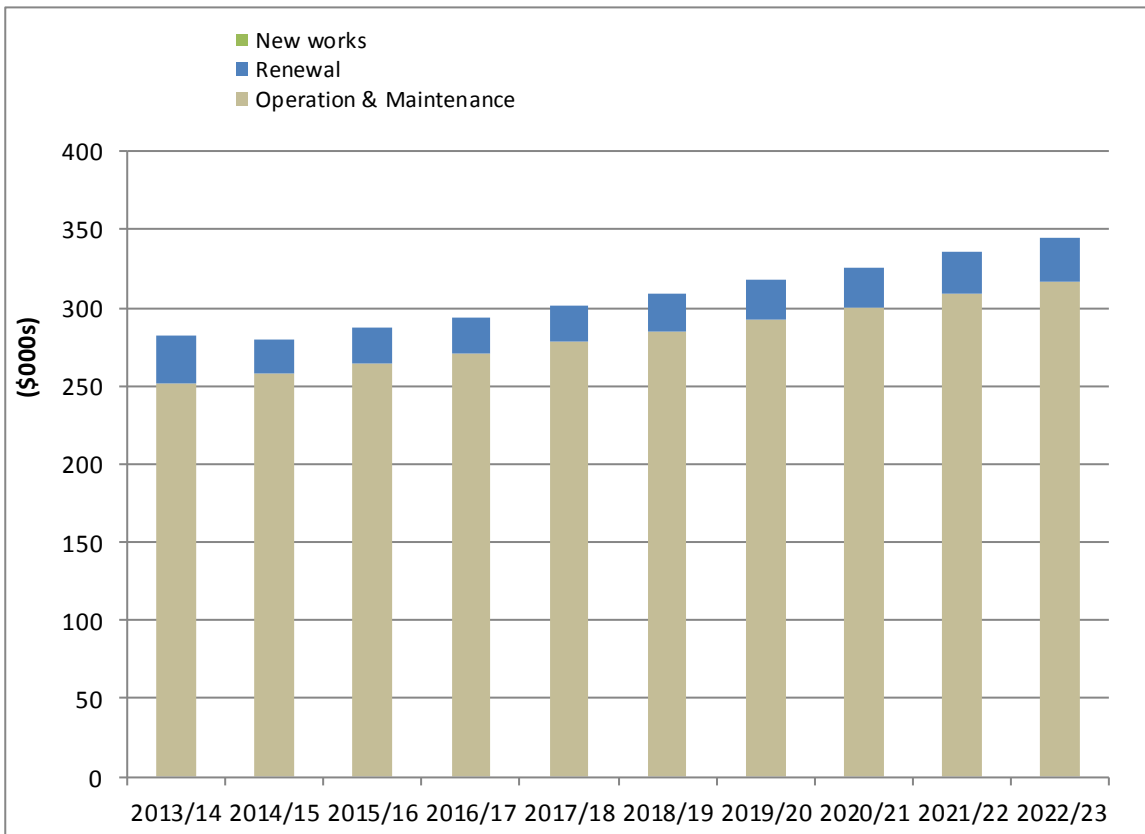
- Risks associated with future compensation claims due to trips and falls;
- Higher future costs associated with repair and renewals due to lack of investment in the maintenance of the assets in the next few years.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans, actions and expenditures included within projected expenditures.

#### Summary 10 Year Planned Expenditure

The planned 10 year expenditure for footpaths is presented below, which shows that there are no planned new works, only operations and maintenance for the next ten years.

**Fig 5c: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source:

Source Council's draft LTFP (18 October 2013)

Note that the budget figures are inflated.

## 5e. LIFECYCLE MANAGEMENT PLAN – STORMWATER DRAINAGE

The stormwater lifecycle management plan details how the organisation plans to manage and operate the stormwater drainage assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

Our current service levels for the stormwater drainage assets are detailed in the table below.

**Table 5e.1: Current and Desired Service Levels - stormwater drainage**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
Function – safety	Reduction in the number of habitable floors that are below the 100 year flood plain.	Collated from call centre database, works reports & house raising Development Approvals	To start measuring in July 2014 then re set target	Reducing trend
Responsiveness	Percentage of blockages to drainage systems likely to cause property damage cleared within 24hrs of reporting	Collated from call centre database and works reports	100% (accumulated average)	90%
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Stormwater drainage assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle (timed with valuation process)	66% of stormwater pipes in fair or better condition (2011)	>95% of stormwater pipe assets in fair or better condition
Maintenance	None identified at this stage			
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	0.98%	



Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0%	1.00%
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	0%	95-105%

## 5e.1 Background Data

### 5e.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 2.1. The stormwater drainage asset includes 98.4 km of pipelines, 3,657 pits and 764 headwalls, pollution control devices (GPT), and 184 rural culverts. The stormwater drainage services the urban centres of Kempsey, South West Rocks, Crescent Head, Frederickton, Gladstone, Smithton, Willawarrin, Hat Head and Bellbrook. Its main purpose is for road drainage rather than stormwater management for properties and the environment.



The age profile of the stormwater head wall assets included in this AM Plan is shown in Figure 5e.1.1 below.

**Figure 5e.1.1: Asset Age Profile- stormwater head walls**



Source: Council’s Finance asset register (July 2013)

**5e.1.2 Asset capacity and performance**

The organisation’s services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5e.1.2.

**Table 5e.1.2: Known Service Performance Deficiencies- stormwater drainage**

Location	Service Deficiency
Stormwater reticulated systems	Poorly designed and ad hoc planned stormwater systems
Stormwater inlets in West Kempsey	Flooding due to inlet issues
All town centres	Unreticulated or limited stormwater reticulation exists in all towns
Stormwater reticulated systems	Stormwater system designed primarily as road drainage rather than stormwater management for protecting properties and the environment

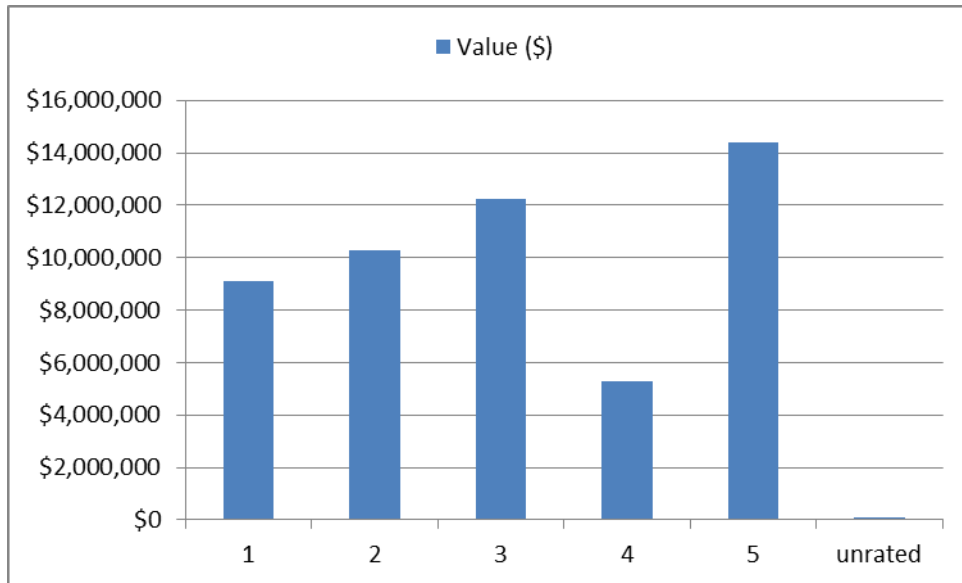
The above service deficiencies were identified from Council staff based on anecdotal evidence.

**5e.1.3 Asset condition**

Condition is monitored of the stormwater drainage through planned surveys timed with the valuation process. In 2011 the current condition information was consolidated and field survey undertaken where there was missing information. It is planned to condition survey the complete network on at least a ten yearly basis. Some identified defects may need more regular inspection to determine when their condition prompts the need for intervention.

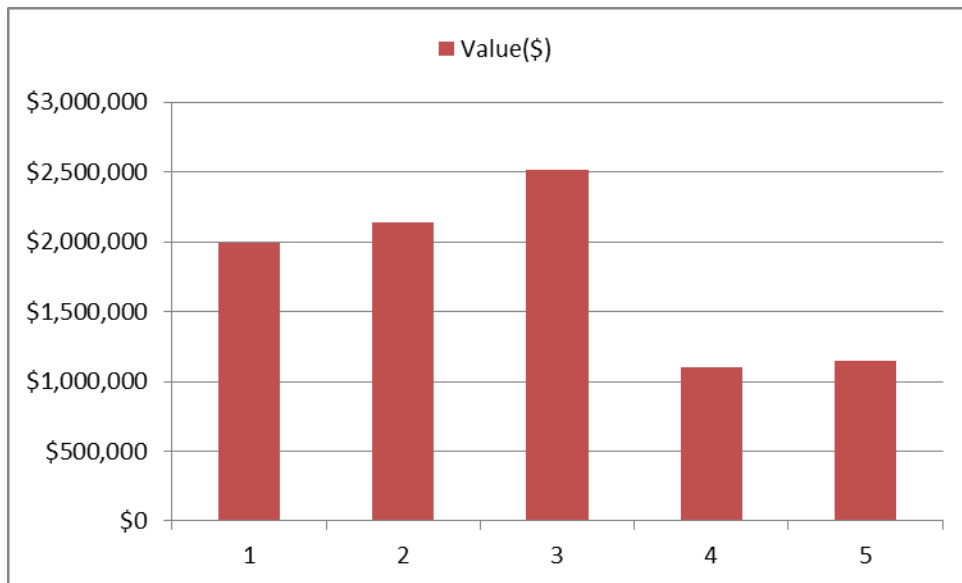
The condition profile of our assets is shown in Figures 5e.1.2 to 5e.1.5 below.

**Fig 5e.1.2: Asset Condition Profile – stormwater pipes**



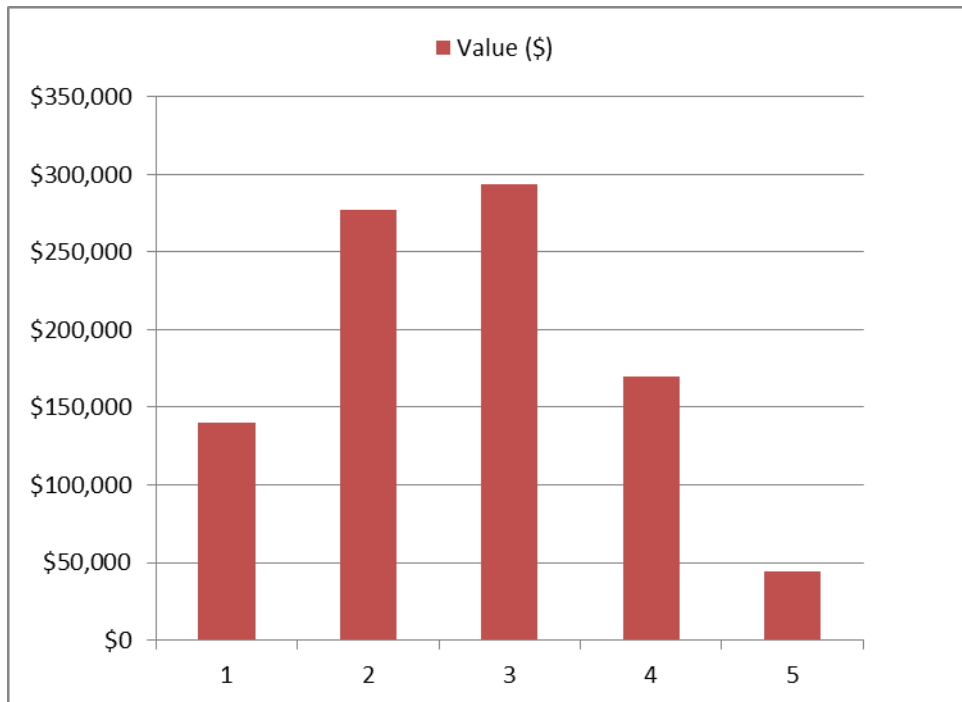
Source: Council's Finance asset register (July 2013)

**Fig 5e.1.3: Asset Condition Profile – stormwater pits**



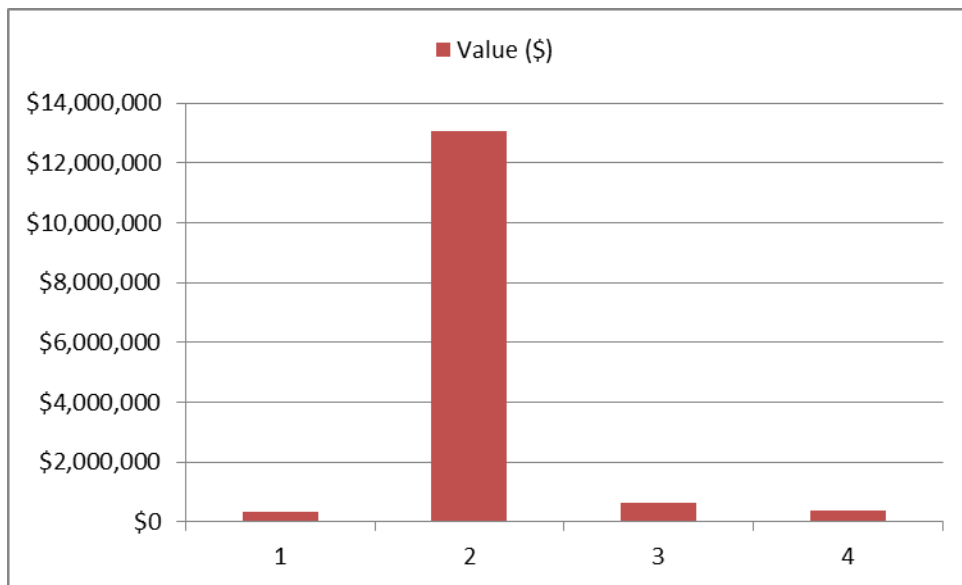
Source: Council's Finance asset register (July 2013)

**Fig 5e.1.4: Asset Condition Profile – stormwater headwalls**



Source: Council's Finance asset register (July 2013)

**Fig 5e.1.5: Asset Condition Profile –rural culverts**



Source: Council's Finance asset register (July 2013)

Condition is measured using a 1 – 5 grading system<sup>21</sup> as detailed in Table 5e.1.3 below.

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<sup>21</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

**Table 5e.1.3: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Very Good:</b> only planned maintenance required
2	<b>Good:</b> minor maintenance required plus planned maintenance
3	<b>Fair:</b> significant maintenance required
4	<b>Poor:</b> significant renewal/rehabilitation required
5	<b>Very Poor:</b> physically unsound and/or beyond rehabilitation

#### 5e.1.4 Asset valuations

The value of stormwater drainage assets including rural culverts recorded in the asset register as at 30 June 2013 covered by this AMP is shown below. Assets were last revalued at 30 June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$75,704,272
Depreciable Amount	\$75,704,272
Depreciated Replacement Cost <sup>22</sup>	\$36,019,201
Annual Depreciation Expense	\$742,926

Useful lives were internally reviewed in June 2011. Council's Asset Revaluation Report (June 2011) provides the methodology used for assessing useful life and remaining lives for stormwater drainage assets.

Key assumptions made in preparing the valuations were:

- Unit rates for calculating replacement costs have been based on existing materials.

Major changes from previous valuations are due to Council revalued its drainage assets at 30 June 2011 resulting in a net write down of \$2,720,000. The valuation was undertaken by Council staff. As at 30 June 2013 the drainage assets were indexed with reference to the Dept of Primary Industries Office of Water - NSW Reference Rates and an indexation increase at the rate of 5% was applied.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	0.98%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (including contributed assets)	0%

<sup>22</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

In 2013 the organisation plans to renew assets at 0% of the rate they are being consumed and will not be increasing its asset stock in the year. The current focus for asset renewal is road and bridges. It is unlikely that significant increases in funding for stormwater asset renewal/replenishment will become available until towards the end of the LTFP. This will provide the opportunity for Council to complete a visual inspection and condition rating of all of the network, assisting to determine priority actions for when funding does become available.

### 5e.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables show the summary costs for the past five years for stormwater drainage assets.

Repair and maintenance (R & M) costs:

Opex	2012/13	2011/12	2010/11	2009/10	2008/09
R and M	\$151,319	\$383,877	\$425,146	\$190,768	\$194,801
Operational	-	-	-	\$68,695	\$58,452
Depreciation	\$577,615	\$577,615	\$183,162	\$254,543	\$248,343
<b>Total</b>	<b>\$728,934</b>	<b>\$961,492</b>	<b>\$608,308</b>	<b>\$514,006</b>	<b>\$501,595</b>

Capital expenditure costs:

Capex	2012/13	2011/12	2010/11	2009/10	2008/09
Stormwater	\$80,310	\$143,000	\$256,139	\$274,075	\$126,854



## 5e.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan is operational are summarised in Table 5e.2.1 below. These risks are reported to management and Council.

**Table 5e.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Stormwater drainage	Negative Council image due to increased water pollution as a result of increased stormwater runoff.	High (Possible, Moderate)	Increase trade waste inspections for high risk sites	High (Possible, Moderate)	To be confirmed
Stormwater drainage	flooding of properties	High (Almost certain, Moderate)	N/A	N/A	To be confirmed

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

## 5e.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5e.3.1.

**Table 5e.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
2012/13	\$728,934
2011/12	\$961,492
2010/11	\$608,308
2009/10	\$514,006
2008/09	\$501,595

Planned maintenance work is currently 25% of total maintenance expenditure.



### 5e.3.1 Asset hierarchy

The organisation’s service hierarchy is shown in Table 5e.3.2.

**Table e5.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Pipes	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals. Pipes must connect to other components in the system(s).
Pits	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals. Pits must connect to at least one pipe unless they are part of an infiltration drainage system.
Headwalls	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals. Headwalls must connect to a pipe or multiple pipes where it is the common outlet.
GPTs	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals. GPT will generally connect to pits near the outlet for the drainage system.
Rural culverts	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals. Rural culverts ensure the safe movement of vehicles in rural areas.





### 5e.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5e.3.3.

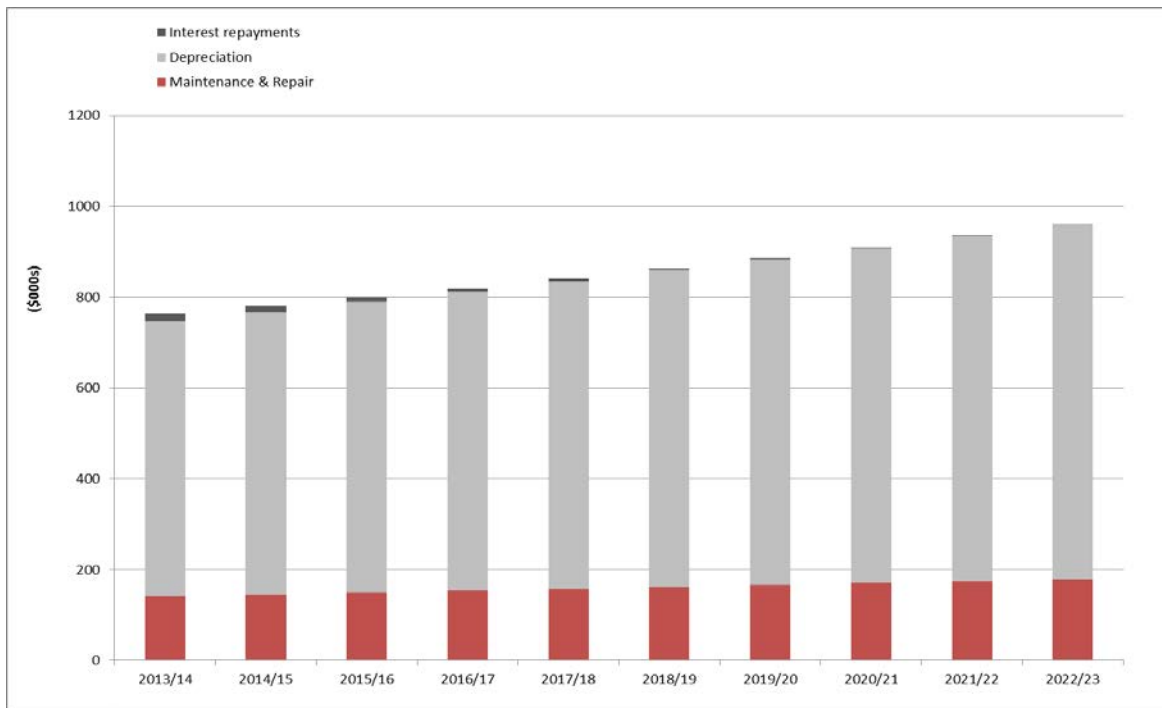
**Table 5e.3.3: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Pipes reticulating the Kempsey CBD	Third party damage Structural failure	Needed for the town’s economy and emergency services and road availability. Failure has the potential to cause disruption to access, services and businesses
Pipes reticulating the Kempsey hospital	Third party damage Structural failure	Need to ensure the hospital is accessible especially in disasters
Rural culverts for single access and school bus routes	Third party damage Structural failure	Need to ensure the properties have at least one road access especially in adverse events

### 5e.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5e.3.1. Note that all costs are shown in current inflated values.

**Figure 5e.3.1: Projected Operations and Maintenance Expenditure- planned budget**



Source: Council’s draft LTFP (25 October 2013)

Note that the budget figures are inflated.

## 5e.4 Renewal/Replacement Plan

### 5e.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5e.4.1. Asset useful lives were last reviewed on June 2011.<sup>23</sup>

**Table 5e.4.1: Useful Lives of Assets**

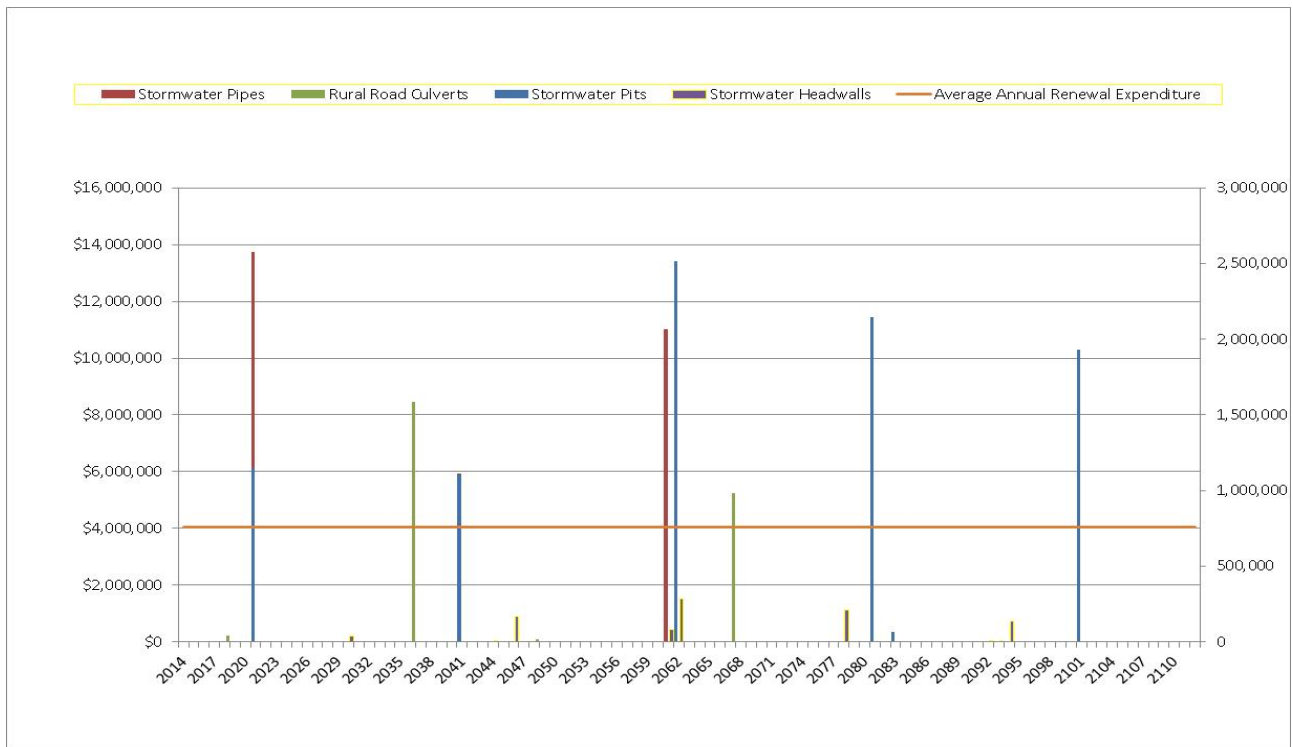
Asset (Sub)Category	Useful life
Stormwater Pipes	100 years
Stormwater Pits	100 years for concrete and 80 years for steel and plastic
Headwalls	100 years
Rural culverts	100 years

### 5e.4.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5e.4.1 by age and limited condition data where available. A formal condition survey for the stormwater drainage asset group is identified as a future improvement so that robust renewal profiles can be developed. Note that all amounts are shown in real values. The planned budget available in the third graph is inflated figures to account for indexing. There is currently no planned renewal budget allowed in the LTFP.

The projected capital renewal and replacement program is shown in Figure 5e.4.2.

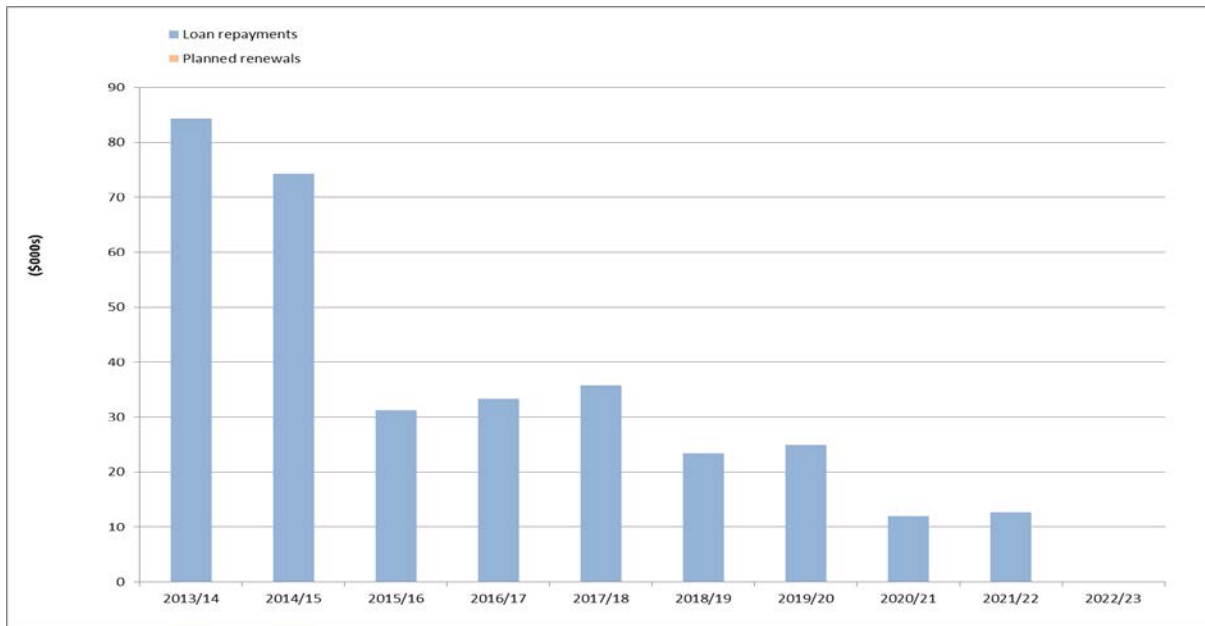
**Fig 5e.4.1: Projected Capital Renewal and Replacement Expenditure- age based**



Source: Council's asset revaluation (2011)

<sup>23</sup> KSC Asset Revaluation Report – June 2011

**Fig 5e.4.2: Projected Capital Renewal and Replacement Expenditure- planned budget**



Source: Council’s draft LTFP (18 October 2013) Note that the budget figures are inflated. The actual asset needs are \$761,000 per annum averaged over 20 years and there is no planned budget. This means that the stormwater infrastructural backlog is not being addressed through a planned renewal program. A planned condition assessment has been identified and will provide a better understanding of the actual condition profile and any assets approaching grades 4 and 5 or close to the end of its economic life and or service failure.

**5e.5 Creation/Acquisition/Upgrade Plan**

**5e.5.1 Summary of future upgrade/new assets expenditure**

There are currently no new assets for stormwater drainage planned in the Council’s draft LTFP.

**5e.6 Disposal Plan**

**Table 5e.61: Assets Identified for Disposal**

• Asset	• Reason for Disposal	• Timing	• Disposal Expenditure	• Operations & Maintenance Annual Savings
No stormwater drainage assets have currently been identified for disposal.				

**5e.7 Service Consequences and Risks**

**5e.7.1 What we cannot do**

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years.

These include:

- Renew stormwater drainage assets when they have reached the end of their life or functionally failed;
- Install any new stormwater drainage assets required to address flooding or water quality issues.

#### 5e.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- A disproportional amount of stormwater drainage assets will reach the end of their life creating a liability for Council;
- An unacceptable number of houses may experience habitable floor flooding;
- Roads may become unsafe to use during rainfall events with unacceptable flooding from Council's stormwater drainage.

#### 5e.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

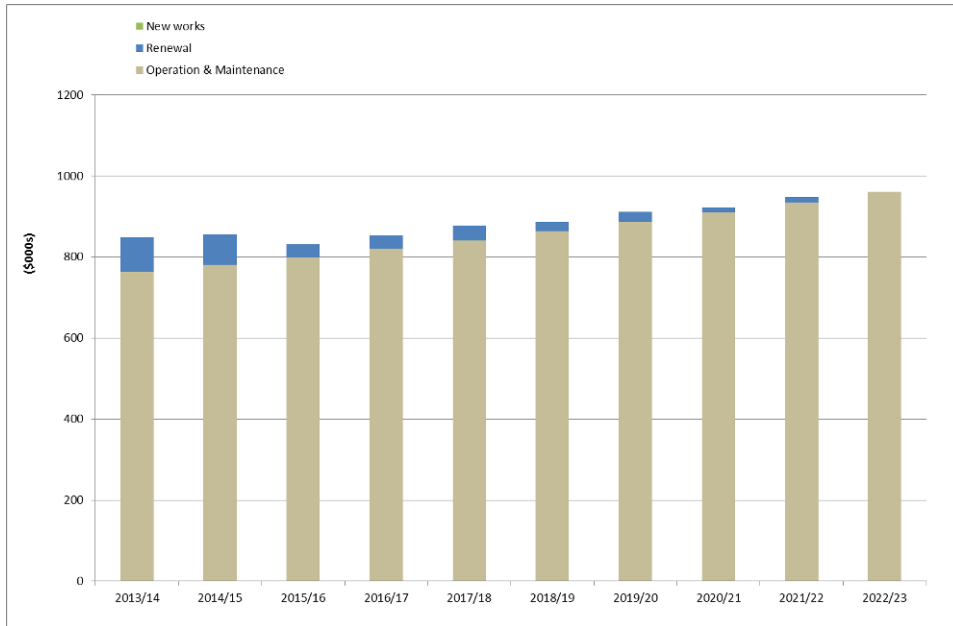
- Service interruption for road availability due to significant flooding and may cause public safety issues;
- Liability claims from habitable floor flooding caused by inadequate stormwater drainage system.

These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and risk management plans actions and expenditures included within projected expenditures.

#### **Summary 10 Year Planned Expenditure**

The planned 10 year expenditure for stormwater drainage is presented below. This shows that there are no planned new works, and operations and maintenance consists 96 per cent of the planned expenditure for the next ten years.

**Fig 5e.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source: Council's draft LTFP (25 October 2013)  
Note that the budget figures are inflated.

## 5f. LIFECYCLE MANAGEMENT PLAN – FLOOD MITIGATION

The Flood Mitigation Lifecycle Management Plan details how the organisation plans to manage and operate the flood mitigation assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

Our current service levels for the flood mitigation assets are detailed in the table below.

**Table 5f.1: Current and Desired Service Levels- flood mitigation**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Flood mitigation assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle (timed with valuation process)	100% of levee bank assets in fair or better condition (2011)	>95% of levee bank assets in fair or better condition
			79% of flood gate assets in fair or better condition (2011)	>95% of flood gate assets in fair or better condition
			No flood drain assets in fair or better condition (2011)	>95% of flood gate assets in fair or better condition
	Drains and floodgate structures maintained to ensure flood mitigation system is available for operation	Collated from call centre database and works reports	To start measuring in July 2014	>95%
Maintenance	Percentage of grass levee banks protecting the Kempsey CBD inspected and maintained within last six months.	Collated from works reports	91.7%	75%
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			

OVERALL ASSET MANAGEMENT SUSTAINABILITY				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	1.51%	
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	1.61%	
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	98.73%	

## 5f.1 Background Data

### 5f.1.1 Physical parameters

The Kempsey Shire is located in the Macleay Valley which consists of approximately 11,500 km<sup>2</sup> of catchment above Kempsey and almost 400km<sup>2</sup> of floodplain below Kempsey. The shire is significantly impacted by extreme storm events on the community as well as the physical infrastructure. Council's flood mitigation assets are critical to reduce the impact of these extreme weather events.

There were three significant events in early 2013 - late January, late February and March. Prior to 2013, significant flood events were experienced in June 2011, November 2010 and February, May & November 2009. The late January 2013 event caused major flooding and the low level bridges upstream of Kempsey were inundated and the flood gates on the Lower Macleay Floodplain at Belmore River & Kinchela Creek were opened due to the river levels.

Flooding causes instability in the soils underlying levees, leading to failure and land slips. Bridges can become damaged from large debris impact and often the abutments suffer significant erosion due to the velocity of water flowing around them and over the bridge. Roads get damaged by the erosive force of the flooding and in some areas the velocity is fast enough to rip the bitumen seal off roads. The accumulation of silt and debris on the road surface and in the table drains results in the need for a massive clean-up immediately following a major flood event.

One of the most significant cumulative infrastructure impacts from a flood is the damage done to sealed road pavements immediately following a flood event, where the pavement is subjected to heavy vehicle loads whilst still being saturated. In these circumstances extensive damage can be done to the road pavement over a very short period of time immediately following a flood event. Flood mitigation seeks to reduce the impact of these events by optimising the hydraulic capacity of the river system handle flood flows and effectively drain the floodplain in an efficient manner.

The assets covered by this Asset Management Plan are shown in Table 2.1. The flood mitigation assets include 175 gates, 55 flood drains, 46 levees and rock walls, and 50 timber flood bridges. Note that flood mitigation timber bridges are no longer considered as Council assets and will be written off. There is an extensive network of drainage assets on the lower floodplain which were privately constructed and are not recognised by Council as public assets. These assets could have been constructed by either a former drainage union(s) and/or the private property owners directly.

The drains and levee bank system is designed to have different uses and impacts. The system is designed to minimise the impact on flooding by providing protection from lower level flood impacts. This is achieved through levees keeping the water within the river banks above what would normally occur. In other areas there are a series of gates that retain the flood waters within the river bank up to certain trigger points. Once these are reached, the gates are used to allow water to spread across the floodplains, increasing the water storage capacity of the river system and thus increasing the height to which the levy banks will prevent flooding in other areas. The gates allow control of over bank flooding.

The age profile of the flood mitigation assets are not recorded. It is understood that most flood gates (71%) were built in 1954 and 1966 with the remaining built in 1990. The system was primarily built in response to major floods previously experienced in the area in 1949, 1950 and 1963. Following construction further studies recommended improvements to the original constructed system and these were later implemented.



Council is currently in the process of auditing the levee system to identify construction dates, stability, subsidence/settlement and other omissions/defects in the original construction. The next revision of this AM Plan will be based upon this new information when it becomes available.

### 5f.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5f.1.1.

**Table 5f.1.1: Known Service Performance Deficiencies- flood mitigation**

Location	Service Deficiency
All minor flood gates	May block due to debris during storm events
Major flood gates at Belmore and Kinchela	Failure due to power outages at times

The above service deficiencies were identified from Council staff based on anecdotal evidence.

### 5f.1.3 Asset condition

Condition of the flood mitigation assets is monitored through planned surveys timed with the valuation process. In 2011 the current condition information was consolidated and field survey undertaken where there was missing information.



Council's major urban levees protecting the Kempsey CBD are visually inspected annually, with the remaining levees generally inspected after a flood event or on an informal basis. All levees are generally classified as being in condition grade 2 or in good condition.

An audit and condition inspection of the levee bank network is currently in process, which will assess the structural stability of the levees as well as survey their current height so that a comparison to the design can be made. This audit/inspection will be carried out over a two year period and be finalised in 2014. The results will provide information to update the condition data for all levees and will be included in the next revision of this AM Plan.

Whilst Council has not formally rated the condition of the entire flood mitigation assets, a condition inspection of the flood gate structures was completed in 2012 by Local Government Engineering Services (LEGS). The documentation provided by LEGS is extensive and contains individual reports prepared for each component of each asset, such as reinforced concrete beams, girders, decking, headstocks, piles, wingwalls, culverts, waterways at bridges etc., together with numerous photographs, inspection sheets and reports.

The condition of each component was rated on a 1 to 4 basis with condition 1 being in good condition with no deterioration and condition 4 being in poor condition with advanced deterioration. The documentation has identified those sections of the assets having a condition rating of 3 and/or 4, together with an estimate of the costs to repair them.

This information has formed the basis used to prioritise the current maintenance efforts and will also be used to pursue funding under the 2:1 Floodplain Risk Management Grants Program. It is planned to condition survey the complete network on a five yearly basis.

The documentation provided by LEGS will be revisited and analysed with the results included in the next revision of this AM Plan.

#### 5f.1.4 Asset valuations

The value of assets recorded in the asset register as at 30 June 2013 covered by this AM Plan is shown below. Assets were last revalued at 30 June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$30,312,145
Depreciable Amount	\$30,312,145
Depreciated Replacement Cost <sup>24</sup>	\$20,987,928
Annual Depreciation Expense	\$344,919

Useful lives were internally reviewed in June 2011. Council's Asset Revaluation Report (June 2011) provides the methodology used for assessing useful life and remaining lives for flood mitigation assets.

Key assumptions made in preparing the valuations were:

- Unit rates for calculating replacement costs have been based on existing materials.

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<sup>24</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Major changes from previous valuations are due to Council revalued its drainage assets at 30 June 2011 resulting in a net write down of \$2,720,000. The valuation was undertaken by Council staff. As at 30 June 2013 the drainage assets were indexed with reference to the Dept of Primary Industries Office of Water - NSW Reference Rates and an indexation increase at the rate of 5% was applied.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	1.51%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	1.61%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (including contributed assets)	0%

In 2013 the organisation plans to renew assets at 106.31% of the rate they are being consumed and will not be increasing its asset stock in the year.

#### 5f.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables show the summary costs for the past five years for flood mitigation assets.

Repair and maintenance (R and M) costs:

Opex	2012/13	2011/12	2010/11	2009/10	2008/09
R and M	\$310,524	\$408,625	\$207,529	\$327,355	\$269,024
Operational	\$20,445	\$4,120	\$61,609	\$224,123	\$212,395
Depreciation	\$346,932	\$289,329	\$763,074	\$743,408	\$742,563
<b>Total</b>	<b>\$677,900</b>	<b>\$702,075</b>	<b>\$908,995</b>	<b>\$1,294,886</b>	<b>\$1,223,982</b>

Capital expenditure costs:

Capex	2012/13	2011/12	2010/11	2009/10	2008/09
Flood mitigation	\$154,885	\$199,531	\$ 933,111	\$75,989	\$89,748

## 5f.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan are summarised in Table 5f.2.1. These risks are reported to management and Council.

**Table 5f.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Flood mitigation-levees	Flooding of properties, farms, roads, and town centres	High (Likely, Major)	Undertake full geotechnical assessments and audit of levee condition/stability	High (Possible, Major)	To be confirmed
Flood mitigation-major flood gates	Flooding of properties, farms and roads. Severe Damage to road and other infrastructure resulting from uncontrolled overtopping of the levy system	High (Likely, Major)	Increase gate inspections for three critical sites and manually test operate the gates every three months	High (Possible, Major)	To be confirmed
Flood mitigation-minor flood gates	Flooding of properties, farms and roads	High (Likely, Moderate)	Implement the use of dewatering pumps wherever possible	NA	To be confirmed

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

## 5f.3 Routine Operations and Maintenance Plan

### 5f.3.1 Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5f.3.1.

**Table 5f.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
2012/13	\$677,900
2011/12	\$702,075
2010/11	\$908,995
2009/10	\$1,294,886
2008/09	\$1,223,982

Planned maintenance work is currently 50% of total maintenance expenditure.

### 5f.3.2 Asset hierarchy

The organisation's service hierarchy is shown in Table 5f.3.2.

**Table 5f.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Flood gates	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals. There are two types of flood gates, drainage gates and flood control gates. Drainage gates are at the end of urban or rural drainage systems and prevent water from the river entering back into the drainage systems (like a one way valve), Control gates provide the ability for Council to control the flow of water during a flood.
Levees	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.
Drains	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data, regular weed spraying/removal and periodic drain cleaning.

### 5f.3.3 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5f.3.3.

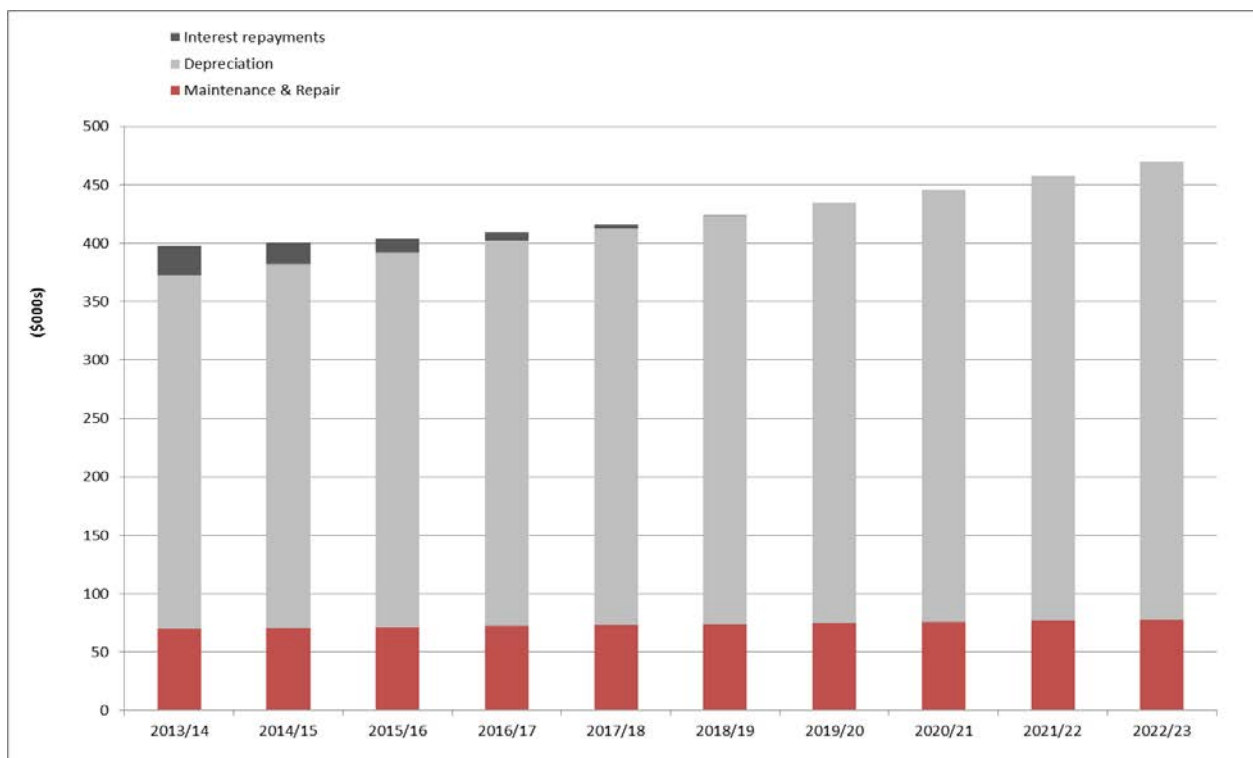
**Table 5f.3.3: Critical Assets and Failure Modes**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Flood gates- major (three in total at Belmore River and Kinchela Creek)	Third party damage Structural failure Power outage	Needed to allow controlled release of floodwaters into floodplain storage basins to protect public infrastructure and private properties, from erosion due to uncontrolled surcharging of the levee system.
Flood levees	Third party damage Structural failure Overtopping Seepage	Needed to protect properties, farms, town centres and physical infrastructure

### 5f.3.4 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5f.3.1. Note that all costs are shown in inflated values.

**Figure 5f.3.1: Projected Operations and Maintenance Expenditure- planned budget**



Source: Council's draft LTFP (18 October 2013)  
Note that the budget figures are inflated.

## 5f.4 Renewal/Replacement Plan

### 5f.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5f.4.1. Asset useful lives were last reviewed on June 2013.<sup>25</sup>

**Table 5f.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Flood gates	60 years
Flood levees	100 years
Bank protection	80 years
Drains	10 years

### 5f.4.2 Summary of future renewal and replacement expenditure

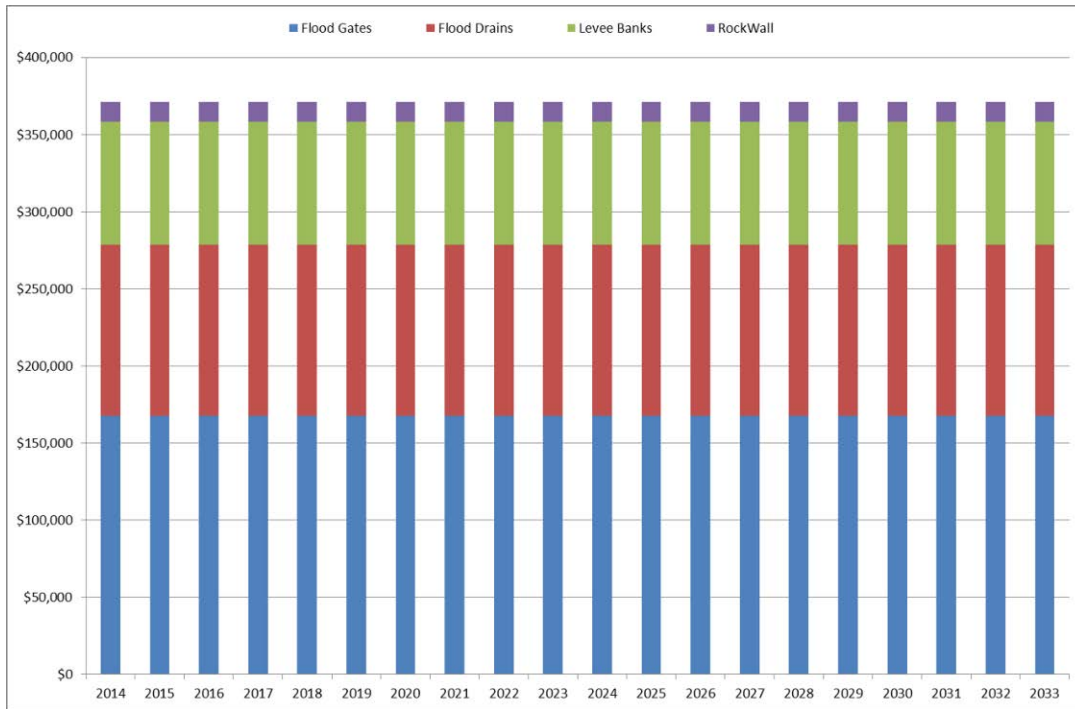
Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5f.4.1 by age and limited condition data

<sup>25</sup> KSC Asset Revaluation Report – June 2013

where available. A formal condition survey for the flood mitigation asset group is identified as a future improvement so that robust renewal profiles can be developed. Note that all amounts are shown in real values. The planned budget available is the third graph in inflated figures.

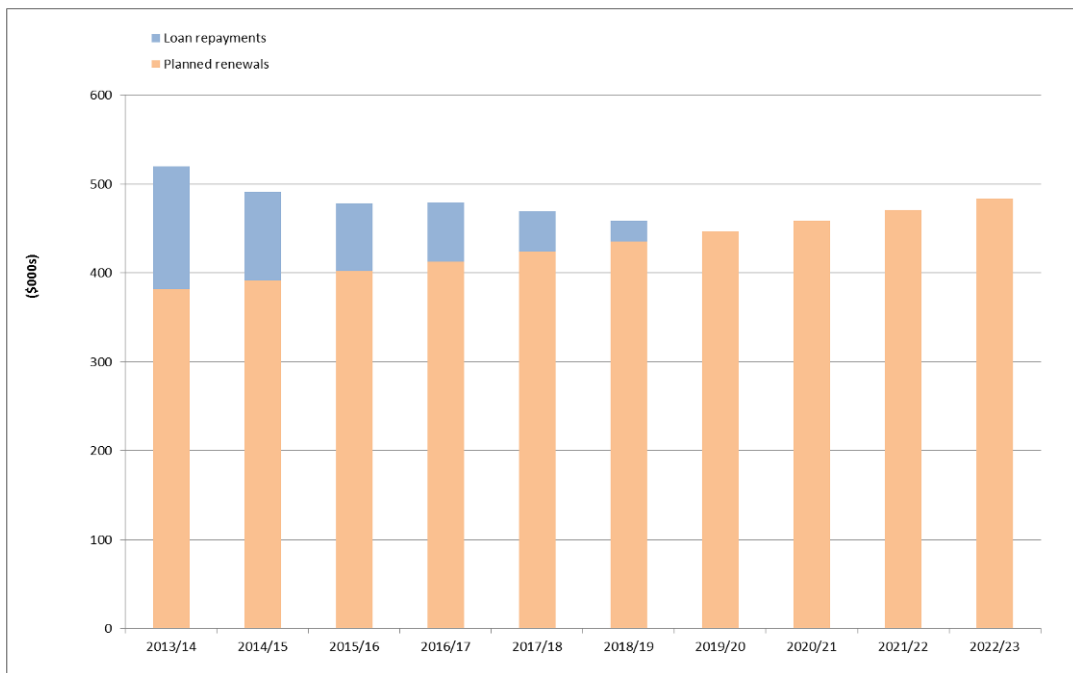
The projected capital renewal and replacement program is shown in Fig 5f.4.2

**Fig 5f.4.1: Projected Capital Renewal and Replacement Expenditure - age based redistributed**



Source: Council’s asset revaluation (2011)

**Fig 5f.4.2: Projected Capital Renewal and Replacement Expenditure- planned budget**



Source: Council’s draft LTFP (18 October 2013)

Note that the budget figures are inflated.

The actual asset needs are \$371,000 per annum averaged over 20 years and the planned budget is the amount of \$400,000 per annum. This shows that there is currently no backlog gap. However this is based on a simple age base approach and will be refined as the 2012 condition data is analysed.

## 5f.5 Creation/Acquisition/Upgrade Plan

### 5f.5.1 Summary of future upgrade/new assets expenditure

There are currently no new assets for flood mitigation planned in the Council's draft LTFP.

## 5f.6 Disposal Plan

**Table 5f.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
Bridges over flood drain on the lower Macleay (32 of).	Bridges within private property, whilst constructed by Council as part of the drainage works, are considered private access and are not Council's responsibility to maintain	Next asset revaluation	Nil	Nil – current O&M plan does not allow for any maintenance to these assets.

## 5f.7 Service Consequences and Risks

### 5f.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Renew flood mitigation assets when they have reached the end of their life or functionally failed;
- Install any new flood mitigation assets required to address flooding or water quality issues.

### 5f.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- A disproportional amount of flood mitigation assets will reach the end of their life creating a liability for Council;
- An unacceptable number of houses may experience habitable floor flooding or structural damage in lesser frequency flood events;
- Roads may become unsafe or damaged due to unacceptable flooding following failure of flood mitigation infrastructure.

### 5f.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

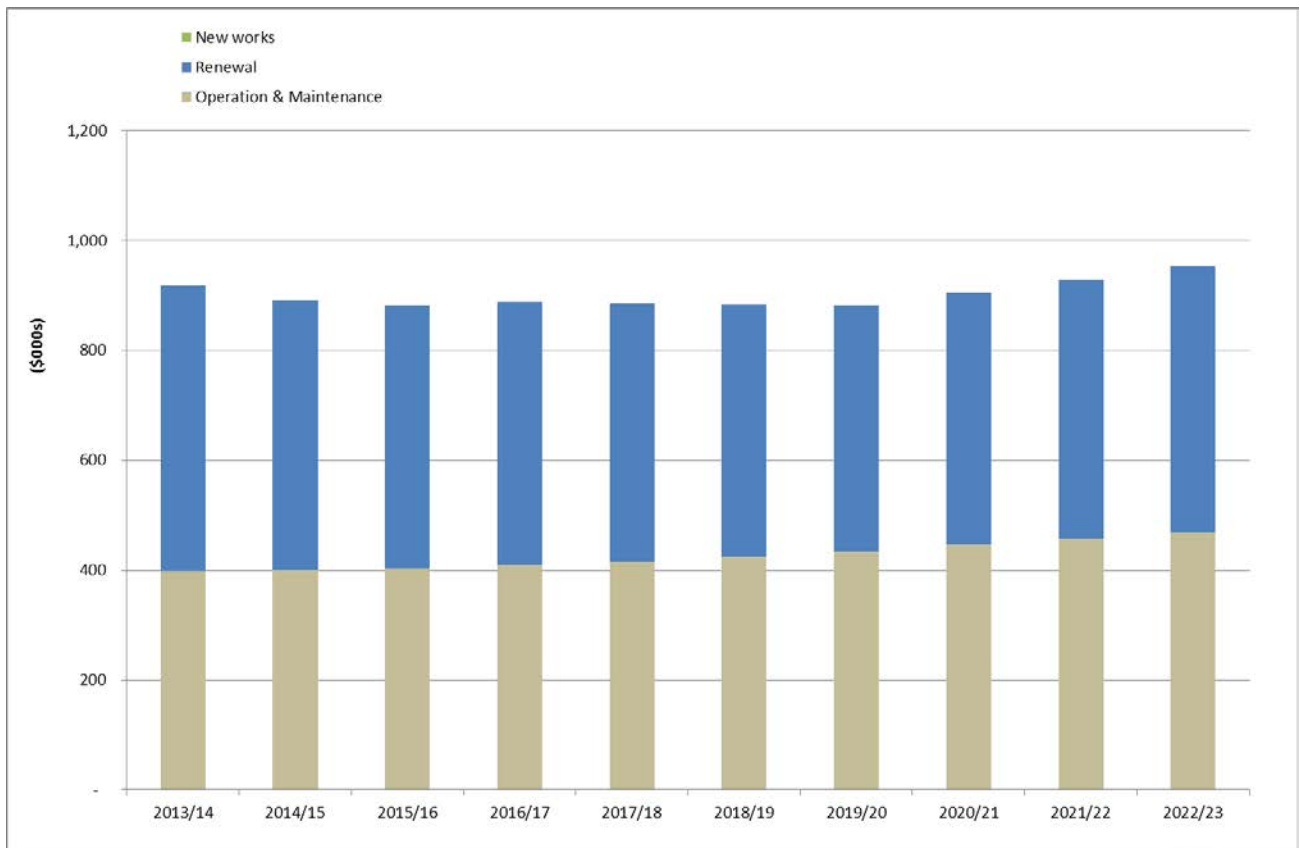
- Service interruption for road availability due to significant flooding and may cause public safety issues;
- Liability claims from habitable floor flooding caused by inadequate stormwater drainage system.

These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and risk management plans actions and expenditures included within projected expenditures.

#### Summary 10 Year Planned Expenditure

The planned 10 year expenditure for flood mitigation is presented below. This shows that there are no planned new works, and renewals consists 53 per cent of the planned expenditure for the next ten years.

**Fig 5f.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source: Council's draft LTFP (18 October 2013)  
Note that the budget figures are inflated.



## 5g. LIFECYCLE MANAGEMENT PLAN - BUILDINGS

The Buildings Lifecycle Management Plan details how the organisation plans to manage and operate the building assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

**Table 5g.1: Current and Desired Service Levels- buildings**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
	Number of complaints regarding the standard of amenities per year	Collated from call centre database	To start measuring in July 2014	<20 per annum
Safety	Ensure sporting clubhouses are safe for public use	Collated from works reports	To start measuring in July 2014	100% of clubhouses are proactively inspected annually
	Ensure public buildings are safe for public use	Collated from works reports	To start measuring in July 2014	100% of public buildings are proactively inspected quarterly
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Building assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle (timed with valuation process)	71% of building assets in fair or better condition (2011)	>95% of building assets in fair or better condition
Maintenance	Recreational facilities maintained within the adopted levels of service	Recorded monthly and collated from call centre database and works reports	To start measuring in July 2014	>90%
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	2.06%	
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0.03%	

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	0.91%	

## 5g.1 Background Data

### 5g.1.1 Physical parameters

**Table 5g.1.1: Building Assets**

Building Asset Type	No. of sites	No. of sub assets
Aerodrome	1	8
Community Buildings	various	27
Operational Assets (includes administration offices, depot offices, information centres, depot residence and other miscellaneous assets)	various	37
Fire and Emergency buildings	20	30
Rental Property	3	16
Saleyard	1	11

Source: Council's 2013 revaluation

Council has a portfolio of building assets consisting of an Aerodrome, bathing facilities, sporting facilities (consisting of pavilions, amenities, kiosks and grandstands), park amenity buildings, community buildings, Rural Fire Service buildings and State Emergency Services buildings, rental properties, a saleyard, tourist park assets and operational buildings. These buildings were condition rated and valued together in June 2013.

The buildings on bathing facilities, sporting facilities, tourist parks, park & reserves and cemeteries will be considered separately under the Open Space LCMP, while the rest of the buildings are considered under this LCMP.

The community buildings consist of a bandbox theatre, community halls at various locations, a scout hall, art galleries, girl guides hall, U3A hall, youth centre, Parklands cottage, PCYC building, a medical centre and a naval cadets hall. These are all maintained by Council.

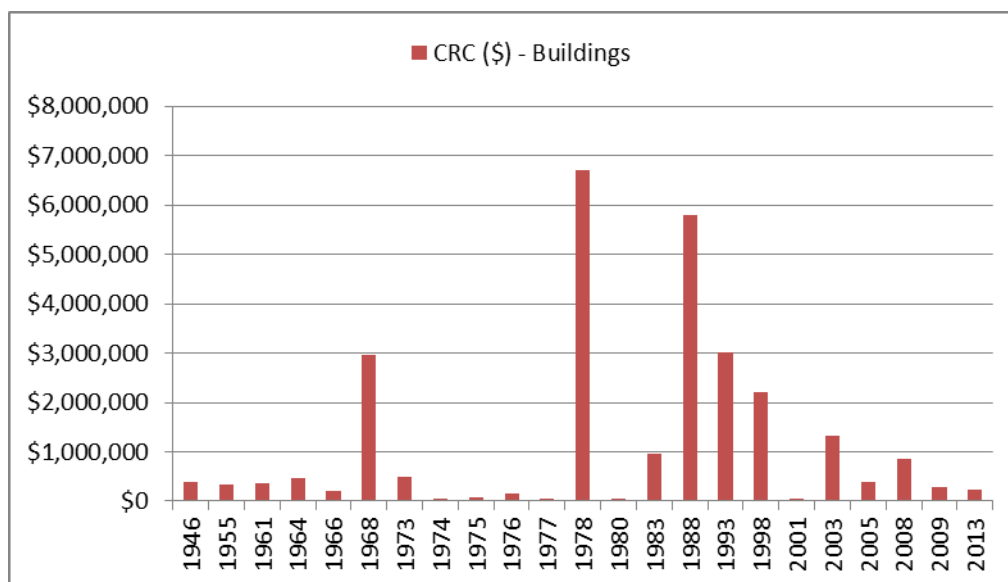
There are number of Rural Fire Service buildings scattered across the shire of Kempsey and are managed by a lease agreement with Council. Where the buildings are still operational the RFS is the occupant. Some surplus facilities are rented to tenants.

Council has a few rental buildings that include units for the aged community. The operational buildings consist of the Council chambers, office buildings and depot buildings. The Council also maintains a sale yard for the sale of livestock by farmers.

An issue is that Council has large number of low value asset stock scattered over the shire and as a result there are practical issues involved with maintaining these structures in a cost effective way. It is generally understood that some of these assets are not being utilised to their full potential by the community resulting in neglect and gradual asset deterioration. Council is in the process of determining the building asset utilisation and their value to the community in order to rationalise the asset stock.

The age profile of the building assets include in this AM Plan is shown in Figure 5g.1.1.

**Figure 5g.1.1: Asset Age Profile - Buildings**



Source: 2013 building revaluation

### 5.1.2 Asset capacity and performance

The organisation’s services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5g.1.2.

**Table 5g.1.2: Known Service Performance Deficiencies - buildings**

Location	Service Deficiency
Old Airport Shed (H0001)	Very rusted frame, a poor storage facility, in poor condition.
Old Airport Shed (H0002)	Poor storage facility, in poor condition.
Old Airport Shed (H0003)	No entry for cars, storage only, in poor condition.
Airport Residence (H0004)	Requires significant maintenance and in very poor condition requiring urgent renewal.
Airport Terminal Building (H0007)	Not been operated for its intended use for nearly eight years. Used occasionally for exercises but it is not suited for the purpose particularly well. It is also in very poor condition needing urgent renewal.
Bellbrook Council Depot bldg. (Former RFS building) - H0020	Building is old and in poor condition used as storage.
Comara RFS (H0048)	Being used as storage by a local farmer with a tractor inside.
Frederickton Dog Pound (H0055)	Obsolete and not functional.
Gladstone Old RFS (H0067)	Building is used as a store for SES boat and equipment. Council is currently constructing a replacement SES headquarters building in Gladstone, which when complete will make this building obsolete.

Location	Service Deficiency
Kundabung RFS (H0128)	Floor carpet stained and in very poor condition.
Millbank Hall (H0129)	Many gaps are significant in areas without cladding.
Dongdingalong Old RFS Shed (H0131)	Built in approx. 1980, the security system with thermal detectors are starting to malfunction on a semi regular basis according to RFS member.
Central Depot – Reuse Building	Cracked tiles present a trip hazard and would benefit from gutter guard.
Dongdingalong RFS Personnel Bldg	Gutter cleaned twice a year. Installation of gutter guard would be beneficial. Gaps between pavers. High wind area and pavers not under shelter and are slippery due to moss.
Frederickton Community Hall	The hall is in very poor condition with low use. Urgent need of painting for protection and presentation externally and internally. Major maintenance work planned for 2013/2014.
New Bellbrook Community Hall	Cracks to lower ground level slabs, stairway is steep. Used for exercises class once per week, occasional birthday and some public school uses.
Settlers Cottage (H0151)	External walls in some areas require maintenance, Timber ground floor framing in some areas require immediate repairs and represent a trip/fall hazard.
Collombatti Old RFS	Abandoned on construction of new RFS.

Source: 2013 building audit and revaluation

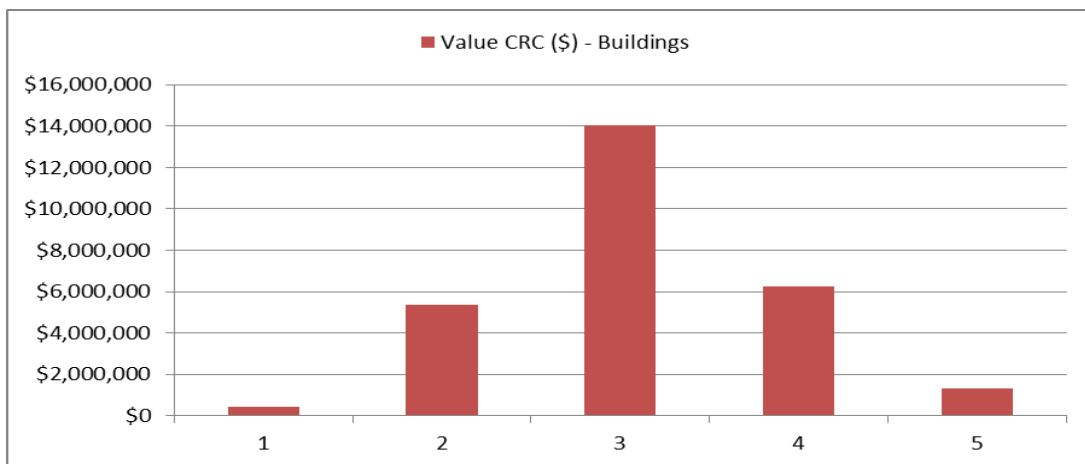
The above service deficiencies were identified from the 2013 condition audit and valuation.

### 5g.1.3 Asset condition - Buildings

Condition is monitored historically using a mixture of proactive and reactive maintenance management practices. Council in-house staff carried out a condition survey of 20% of its asset in 2012. Council recently conducted an external re-valuation of its building assets. In June 2013 all the building assets were inspected, condition rated and valued at building component levels, using useful lives and remaining useful lives, and also condition rated at its parent levels (i.e. for the whole building).

The condition profile of our assets is shown in Figure 5g.1.2 below.

**Fig 5g.1.2: Asset Condition Profile - Buildings**



Condition is measured using a 1 – 5 grading system<sup>26</sup> as detailed in Table 5g.1.3.

<sup>26</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

**Table 5g.1.3: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Excellent:</b> No work required (normal maintenance)
2	<b>Good:</b> minor maintenance work required
3	<b>Average:</b> Maintenance work required
4	<b>Poor:</b> Renewal required
5	<b>Very Poor:</b> Urgent renewal/upgrading required

\*P76, Planning & Reporting Manual 2010, Produced by DLG

#### 5g.1.4 Asset valuations - Building

The value of assets recorded in the asset register as at 30 June 2013 covered by this AMP is shown below. Assets were last revalued at 30 June 2013. Assets are valued at brownfield rates.

Current Replacement Cost	\$26,656,015
Depreciable Amount	\$23,381,763
Depreciated Replacement Cost <sup>27</sup>	\$14,194,900
Annual Depreciation Expense	\$481,468

Useful lives were reviewed in June 2013 by Council staff based on Australian Building Component Guidelines in Consultation with Asset Advisory Property Consultants Valuers and Quantity Surveyors and verified by external auditors .

The key assumptions made in preparing the valuations were:

- The remaining life was estimated using the judgement of experience of consulting valuers;
- The useful lives for components were estimated based on the Australian Building Component guidelines, experience of consultants and reviews by Council Staff to suit local conditions;
- Unit rates were based on Rawlinson by consultants with a mark up for Kempsey and were comparable to the rates from other Councils. The actual construction rates for the Council may be different but could not be used due to lack of sufficient in-house data.

Major changes from previous valuations are due to Council engaging Asset Advisory to undertake a valuation of Council buildings as at 30 June 2013. The valuation has resulted in net write down in value of \$3,053,260.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	2.06%	(\$481,468/\$23,381,763*100)
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.03%	(\$7046(*NPV Average renewals/yr) /\$23,381,763*100)
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%	(Note: As no upgrades are planned in the LTFP)

<sup>27</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Rate of Annual Asset Upgrade/New (including contributed assets) 0% (Note: As no contributed building assets anticipated of LTFP)

In 2014 the organisation plans to renew assets at 1.46 % of the rate they are being consumed and will not be increasing its asset stock in the year.

### 5g.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'.

#### O and M and Operational Costs

Buildings		2012/13	2011/12	2010/11	2009/10	2008/09
	R and M	\$473,391	\$514,275	\$465,940	\$503,786	\$444,019
	Operational	\$159,940	\$106,457	\$133,463	\$208,321	\$201,969
		<b>\$633,331</b>	<b>\$620,732</b>	<b>\$599,403</b>	<b>\$712,107</b>	<b>\$645,988</b>

#### Capital Expenditure

		2012/13	2011/12	2010/11	2009/10	2008/09
<b>Buildings</b>		<b>\$920,213</b>	<b>\$27,832</b>	<b>\$1,258,571</b>	<b>\$ 977,135</b>	<b>\$466,494</b>

### 5g.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan are summarised in Table 5g.2.1. These risks are reported to management and Council/Board.

**Table 5g.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Buildings	Overall deterioration and serviceability decreases due to lack of basic maintenance and limited renewal programmes	High (Likely, Moderate)	Complete review of renewal priorities for buildings asset group and complete buildings asset rationalisation plan	High (Possible, Moderate)	To be confirmed
Buildings	Potential health risks from poorly maintained buildings	High (Possible, Moderate)	Implement programme to remove asbestos from buildings, review building usage and long term sustainability including disposals	High (Possible, Moderate)	To be confirmed
Buildings	Increased vandalism / malicious damage	High (Almost certain, Minor)	Replace/repair with vandal resistant fittings/design. Ensure that repairs/modifications and improvements are undertaken using "safer by design"	Moderate (Likely, Minor)	To be confirmed

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
			principles to reduce the potential for vandalism		
Buildings	Onsite wastewater management systems failing resulting in environmental damage/pollution	Medium (Likely, Minor)	Undertake inspections of systems on an annual basis. Regularly pump out accumulated sludge	Medium (Possible, Minor)	To be confirmed
All buildings on flood plain	Flooding of buildings	High (Possible, Moderate)	Identify at risk buildings with asset rationalisation plan	High (Possible, Moderate)	To be confirmed
Emergency Services Buildings	Unavailable emergency services buildings	High (Possible, Moderate)	Identify at risk emergency services buildings with asset rationalisation plan	High (Possible, Moderate)	To be confirmed
All buildings	damage to buildings as a result of fire	High (Possible, Moderate)	Identify at risk buildings for fire with asset rationalisation plan, Review Bushfire risk and implement asset protection zones	High (Possible, Moderate)	To be confirmed
Public toilets	Poorly maintained public toilets with limited or inadequate serviceability	Medium (Possible, Minor)	Revise facility rationalisation plan and remove unserviceable facilities as necessary	Medium (Possible, Minor)	To be confirmed

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

### 5g.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5.3.1.

**Table 5g.3.1: Maintenance Expenditure Trends - buildings**

Year	Maintenance Expenditure
2012/13	\$473,391
2011/12	\$514,275
2010/11	\$465,940
2009/10	\$503,786
2008/09	\$444,019

Planned maintenance work is currently approximately 50% of total maintenance expenditure.

### 5g.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5g.3.2.

**Table 5g.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Structure including substructure and superstructure further componentised	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.
Roof (further componentised to roof components and roof plumbing)	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.
Finishes componentised to ceilings, floor covers, paint etc., and Fittings componentised to cupboards, benches, stoves etc.,	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.
Service Elements further componentised to Mechanical services, sanitary plumbing, fire services, security, electricals, water service and sub componentised further	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.
Site elements includes site works, structures, external in the close vicinity	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.

### 5g.3.2 Critical Assets - Buildings

Council does not have a framework to identify critical building assets, however from experience and local knowledge the following critical assets groups, failure modes, required operations and maintenance activities are detailed in Table 5g.3.3.

**Table 5g.3.3: Critical Assets and Service Level Objectives - Buildings**

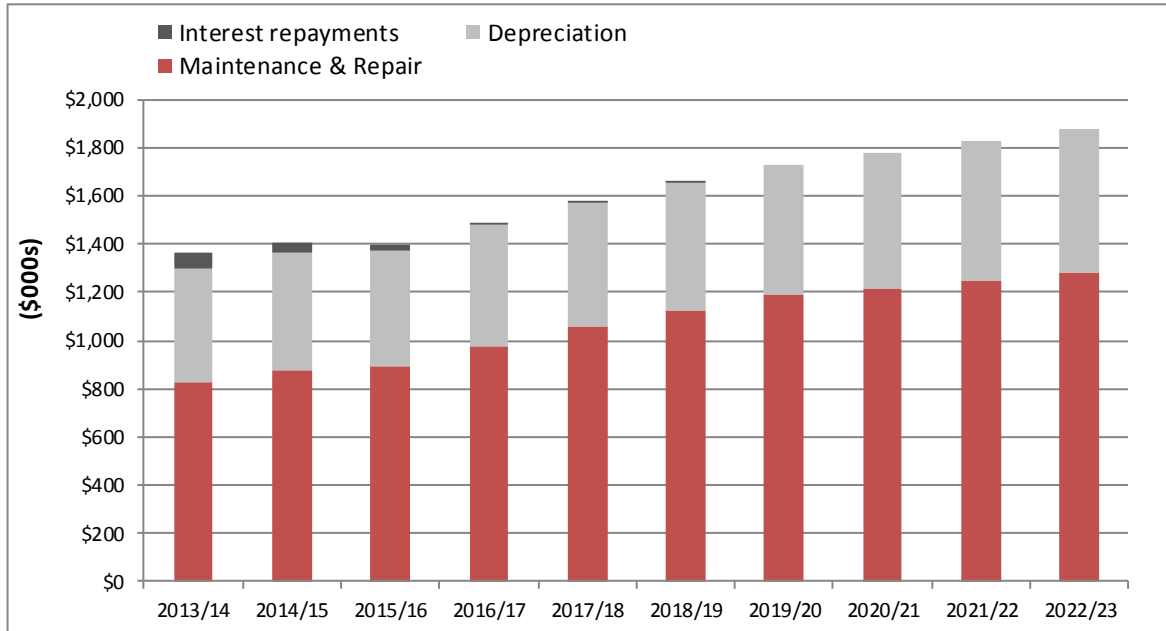
Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Rural Fire and SES Buildings, Community Buildings	Major Flood, fire, or storm preventing access to sites	Fire prevention and fire fighting activities, emergency work (e.g. cleaning duties after a storm), work involving community issues. Access to be maintained/improved where necessary.
Operational Building including Civic Centre, Community Services, Customer first, Library and Depot buildings in general.	A major flood, fire or earth quake. A complete failure of communication systems including computer services.	Council chambers, council offices, frontline customer services inclusive computer networks, communications. Depot buildings houses operational and maintenance staff. Backup IT redundancy made available at the Disaster Recovery site(s).
Central Garbage Depot	A fire or excessive rain causing leachate to the creek nearby	Garbage management
Saleyard	Flooding preventing access	Performs live stock sales
Homes for the aged	Fire or flood	Buildings suitable for specific needs of older persons (senior citizens). They require general and statutory maintenance



### 5g.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5g.3.1. Note that all costs are shown in inflated dollar values.

**Figure 5g.3.1: Projected Operations and Maintenance Expenditure**



Source: Council’s draft LTFP (25 Oct 2013) Note: dollar values are inflated

### 5g.4 Renewal/Replacement Plan

#### 5g.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5g.4.1. Asset useful lives were last reviewed on June 2013.

**Table 5g.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life (Years)
Airport hangar	50
Awning structure	50
BBQ Shelter	35
Change Rooms	50
Community Hall	70
Control building	50
Cottage	50
Dog Pound	40
Fire Shed	40
Grand stand	50
Pool - 25 metre	50
Residence	50
Shed	40

Asset (Sub)Category	Useful life (Years)
Sportsground Amenities	40
Toilet block	40

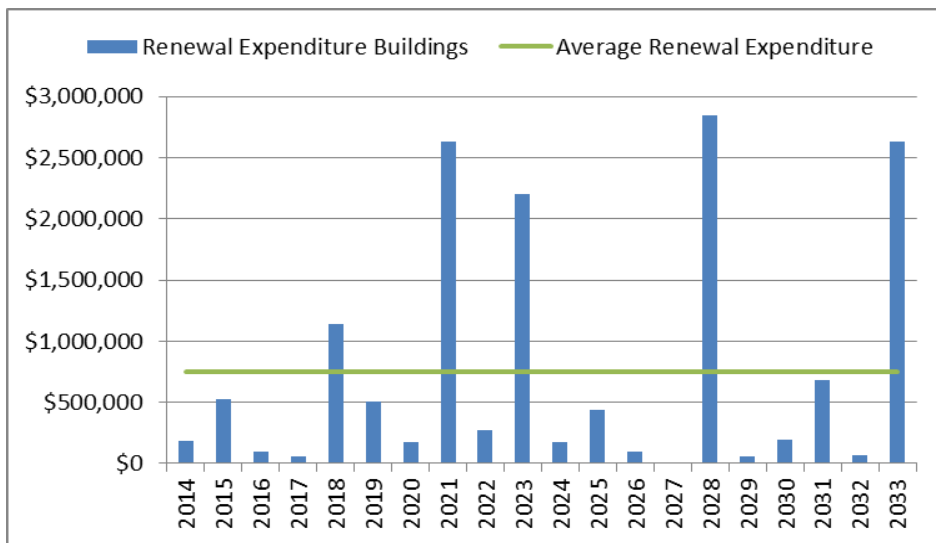
The full list is included in the Council’s financial system and at component level (e.g. Tennis Courts, fencing, gates).

**5g.4.2 Summary of future renewal and replacement expenditure**

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5g.4.1. Note that all amounts are shown in real values.

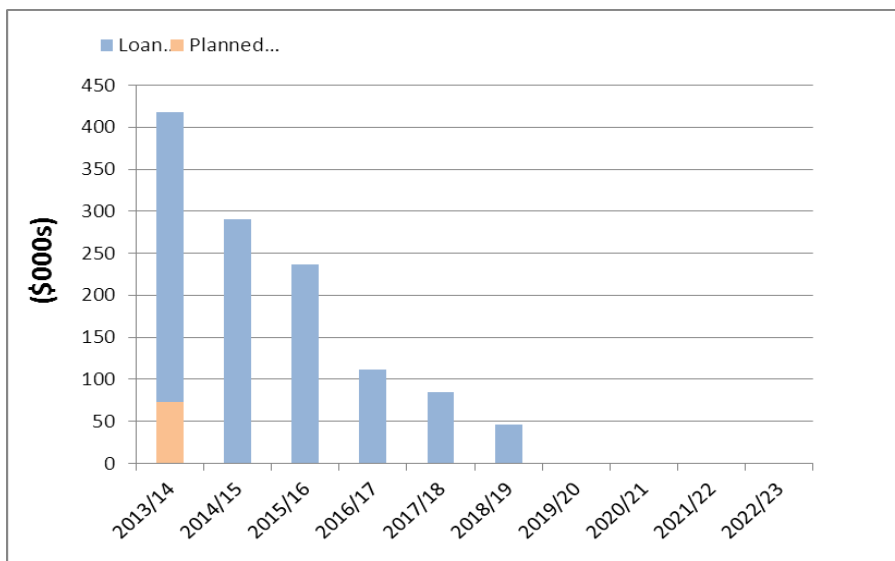
The projected capital renewal and replacement program is shown in Fig 5g.4.1.

**Fig 5g.4.1: Projected Capital Renewal and Replacement Expenditure - Buildings**



Source: Council’s Financial Modelling

**Fig 5g.4.2 Ten year projections as per LTFP (below)**



Source: Council’s Draft LTFP (25 Oct. 2013)

The graphs shows that there is a very significant gap between the amount that should be spent on building to keep the building to a satisfactory standard and the budget in the LTFP. The lack of investment to renew the assets will have long term implications and will cause the building assets to deteriorate over this period.

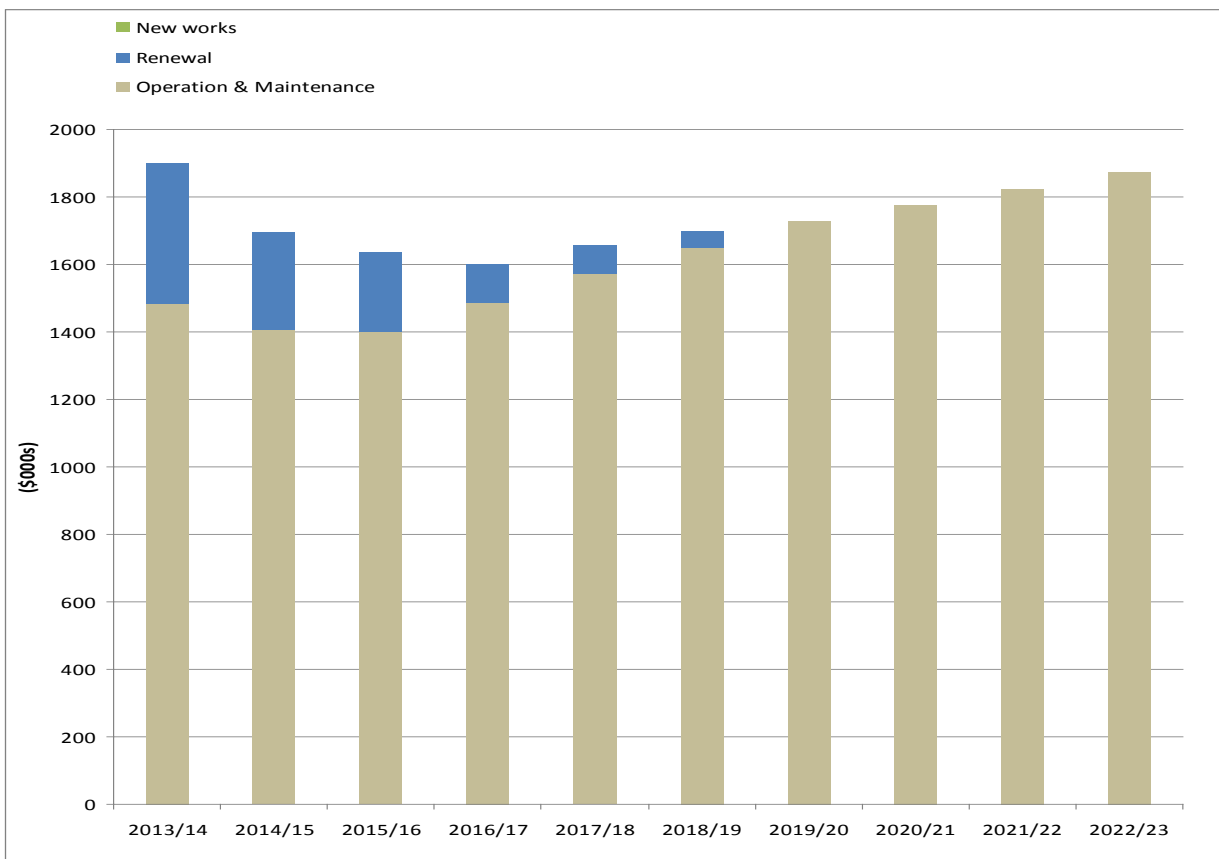
The revaluation model shows that an average of \$750,000 per annum is required to maintain the assets. The planned renewal expenditure amounts to \$7,250 per year for the next 10 years. The shortfall of funding is approximately \$743,000. This situation is unrealistic and will need to be analysed further for future AMP revisions. The current LTFP will lead to a situation where buildings are simply deteriorating without being renewed and eventually they will no longer useable. This situation emphasises the importance of Council to review its current asset stock and rationalise based on the usage. In some instances the management strategy will be to simply demolish the structure when it is no longer useable. The LTFP should also be revised based upon the buildings review to incorporate the funding for building renewals in to the future.

### 5g.5 Creation/Acquisition/Upgrade Plan - Buildings

#### 5g.5.1 Summary of future upgrade/new assets expenditure

There are no planned upgrades or investments on new building assets of the ten year period of the Long Term Financial Plan.

**Fig 5g.5.1: Capital and Operation & Maintenance Expenditure - Buildings**



Source: Council's Draft LTFP (25 Oct.2013) Note: dollar values are inflated

## 5g.6 Disposal Plan

**Table 5g.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
Airport Residence H0004	Obsolete and in poor condition. Not economically viable.	Within 7 years	Not quantified as yet	To be confirmed
Comara RFS Shed H0048	Obsolete, occupied by farmer. Not economically viable	Within 3 years	Not quantified as yet	To be confirmed
Frederickton dog pound	Obsolete. Not economically viable.	Within 5 years	Not quantified as yet	To be confirmed
Temagog No. 1 RFS shed H0199	New RFS built, old obsolete. Not economically viable.	Within 3 years	Not quantified as yet	To be confirmed
Landsborough St. House No. 18	Obsolete. Some work completed in 2013 to maintain rental income.	Within 7 years	Not quantified as yet	To be confirmed
Collombatti OLD RFS	Abandoned	Within 2 years	Not quantified as yet	To be confirmed
Millbank Community Hall	Poor condition – little or no use. Community committee dissolved. Asset surplus to needs unless community is prepared to maintain.	Within 2 years	Nil cost. Sale is likely to generate unplanned income which could be invested into other building renewals.	\$2k – to be confirmed.

## 5g.7 Service Consequences and Risks

### 5g.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years The reasoning for this include:

- Some major renewals projected cannot be completed due to lack of funding not being included in LTFP due to community priorities;
- Majority of projected renewals needs to be reviewed as to whether they should be renewed as per renewal forecast or be differed as the building assets are in the process of being rationalised;
- The renewal projects needs to be prioritised over competing projects as deemed necessary, but at this early stage more investigations required to identify which projects are needed to be implemented and consensus must be reached as to which assets must be rationalised;
- Majority of operations work are pre-planned however maintenance work is a mix of proactive and reactive maintenance perhaps due to lack of resources.

### 5g.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users.

These include:

- Being unable to maintain the facilities to satisfy the expectations of the community;
- The condition and performance of building deteriorating over the longer term;
- A risk of losing its aesthetic appeal over time.

### 5g.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Damage to the image of the Council;
- Risks to the health and safety of the occupants, residents and the general community;
- Risk of litigation;
- Risk of repair / renewal costs increasing exponentially to the Council.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans, actions and expenditures included within projected expenditures.

## 5h. LIFECYCLE MANAGEMENT PLAN – OPEN SPACE

The open space lifecycle management plan details how the organisation plans to manage and operate the open space assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

Our current service levels for the open space assets are detailed in the table below.

**Table 5h.1: Current and Desired Service Levels- open spaces**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
	Annual level of usage of the swimming pools (including aquatic centre related activities)	Records by pool operators	To start measuring in July 2014	70,000
Safety	Ensure play grounds are safe for public use	Collated from works reports	To start measuring in July 2014	100% of playgrounds proactively inspected quarterly
	Ensure playing fields are safe for public use	Collated from works reports	To start measuring in July 2014	95% of sportsfields proactively inspected quarterly
	Number of complaints regarding overflowing bin in public areas per year	Collated from call centre database and works reports	1	<10
	Number of complaints about litter on roadsides and public spaces per year	Collated from call centre database and works reports	48	<20
	Number of complaints about public toilets conditions per year	Collated from call centre database and works reports	9	<20

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Playground assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle (timed with valuation process)	87% of playground assets in fair or better condition (2011)	>95% of playground assets in fair or better condition
	Percentage of Category 1 open space areas mowed with service standards	Collated from works reports	97.5%	80%
	Percentage of Category 2 open space areas mowed with service standards	Collated from works reports	91.8%	75%
	Percentage of Category 3 open space areas mowed with service standards	Collated from works reports	88.4%	60%
Maintenance	Maintenance of public areas within levels of service	Recorded monthly and collated from call centre database and works reports	To start measuring in July 2014	>90%
	Sporting fields maintained within adopted levels of service	Recorded monthly and collated from call centre database and works reports	To start measuring in July 2014	>90%
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	2.65%	
Asset sustainability ratio	Rate of annual asset renewal (how much of asset stock being	Ratio of capital renewal expenditure in a year to depreciable	2.63%	

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
	replaced each year)	amount		
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	57.05%	

## 5h.1 Background Data

### 5h.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5h.1.1.

Open Space Asset Type	No. of sites	No of sub assets
Bathing Facilities	4	25
Sporting Facilities	12	44
Parks & Reserve Amenities	various	29
Tourist Park Assets	5	104
Cemeteries (including reservations)	14	6
Land Improvement Assets – such as tanks, fences, furniture, playgrounds, and other miscellaneous items	various	293

Source: Council's 2013 revaluation

Council maintains and operates parks and gardens and crown reserves across Kempsey Shire Local Government Area. These include parks and open spaces, crown reserves and associated structures, bathing facilities, sporting facilities, playground equipment, tourist parks, cemeteries and other structures.

The bathing facilities consist of swimming facilities at Central Kempsey, South West Rocks, Gladstone and Crescent Head. Except for the pools at Kempsey and Crescent Head, the pools are not heated and only operate during the summer seasons. Crescent Head is open for all but four months of the year and Kempsey is only closed for two months of the year. They are managed by external service providers on a lease agreement with the Council. Council however maintains the facilities. The annual closure of the pool over winter permits major periodic maintenance be completed.

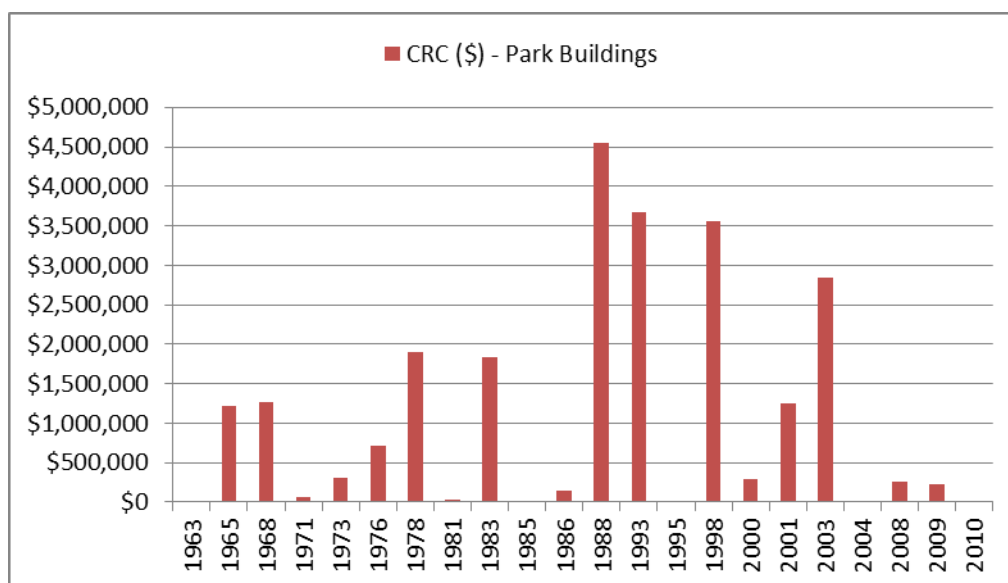
Amenity buildings, offices and tourist park cabins are located at Council caravan parks in Hat Head, Grassy Head, Horseshoe Bay, Stuart Point and Crescent Head which are managed by external service providers under a maintenance contract. The buildings are maintained by Council.

There a number of amenities in parks such as toilets and BBQ shelters scattered across the shire.

Age profile information is currently available for park building asset. An age profile will be developed for other assets in future revisions of the asset management plan.



**Figure 5h.1.1: Asset Age Profile – Park Buildings**



**5h.1.2 Asset capacity and performance**

The organisation’s services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5h.1.1.

**Table 5h.1.1: Known Service Performance Deficiencies**

Location	Service Deficiency
All sportsfields	Some sportsfields are in poor condition (eg Kemp Street sportsfield). All sportsfields require top dressing and capital improvements. They consist of drainage, irrigation, laser levelling and maintenance issues such as scarifying, aeration, spraying and propagation of sportsfields not carried out due insufficient maintenance funding. There is also inadequate levels of lighting in most sportsfields. These issues are likely to expose the Council for future compensation payments if a person is injured.
All open space facilities	Require a strategic plan of asset rationalisation, efficient and effective operation, maintenance and management.
Bellbrook Tennis courts (H0018)	Only one court is being used in recent times.
Blackbird Flat BBQ Shelter (H0022)	Low use facility. Fixing edges could reduce long term maintenance.
Rudder Park Toilets (H0053)	Local issues. Permanently closed. Used by adjoining community radio station otherwise would be demolished.
Frederickton Clubhouse /Tennis Courts (H0059)	Derelict tennis court.
Gladstone Sportsground Toilets /Amenities (H0061)	Built in approx. 1985. A basic building which is used by a small local group in the summer season only.
Gladstone Tennis Club House/ Tennis Courts (H0062)	Used in summer season only, tennis courts are in poor condition.
Gladstone Memorial Park – Electric BBQ (H0066)	Not functioning.
Kalateenee Reserve Toilets	Very basic long drop toilet. New toilet base and seat required.

Location	Service Deficiency
(H0132)	
Smithtown Sportsground Grandstand (H0141)	Some cracks, need urgent repair. Water leaking to store.
Willawarrin Sportsground Kiosk (H0237)	A high maintenance building in poor condition.
Willawarrin Sportsground Tennis Club (H0242)	Poor club house with low usage in recent times. Large cracks to court particularly near the base line.
Frederickton Sportsground – Roller shutter door (H0249)	Shows signs of forced entry.
Central Depot – Reuse Building	Cracked tiles present a trip hazard and would benefit from gutter guard.
Temagog Reserve Toilets	Very low level of amenity, maintenance and presentation.
Hat Head Tennis Club	Structural members have failed.
Kempsey Bath Pump House	Paint in metal ceiling in very poor condition along with ceiling mounted fluorescent lights.
Riverside Park Toilets (H0115)	Painted every 5 years due to high vandalism rate, Ceiling mounted fluorescent lights are very dirty and needs cleaning. Colorbond Screen Panel has impact damage.
Stuart Point Tennis Club House verandah	Structural members have failed.

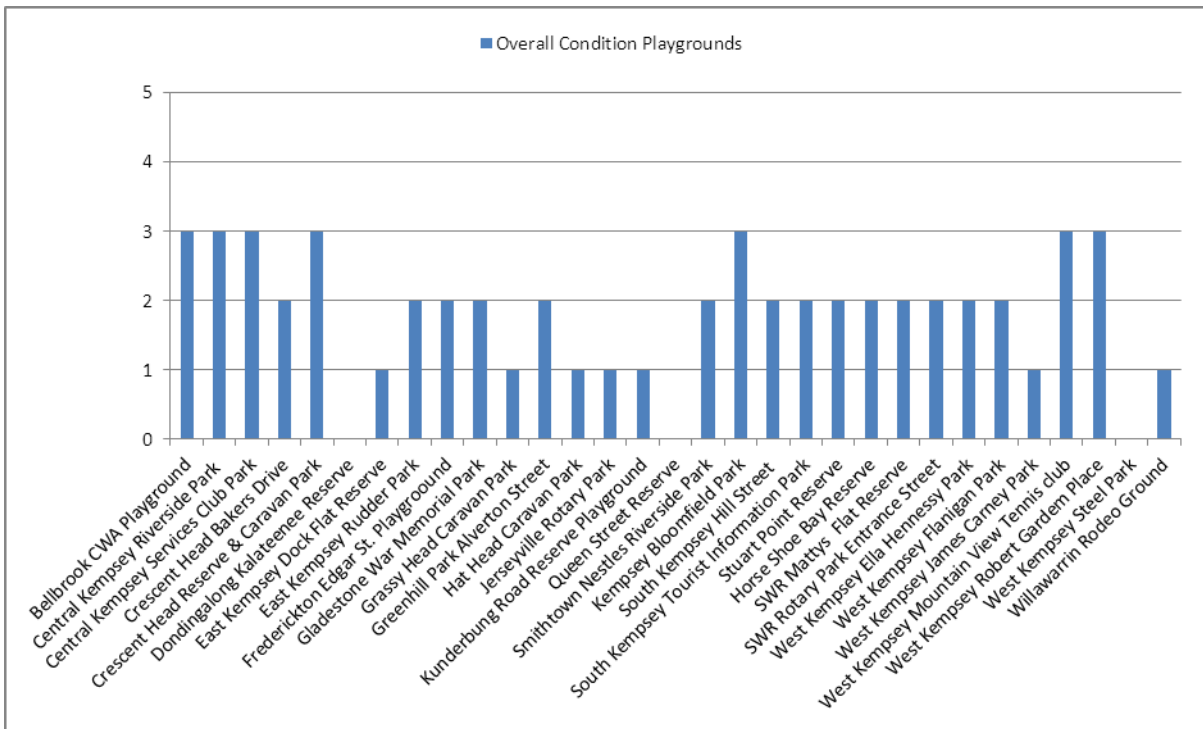
Some of the above service deficiencies were identified by council officers. The deficiencies of buildings in open spaces were identified from the 2013 building revaluation.



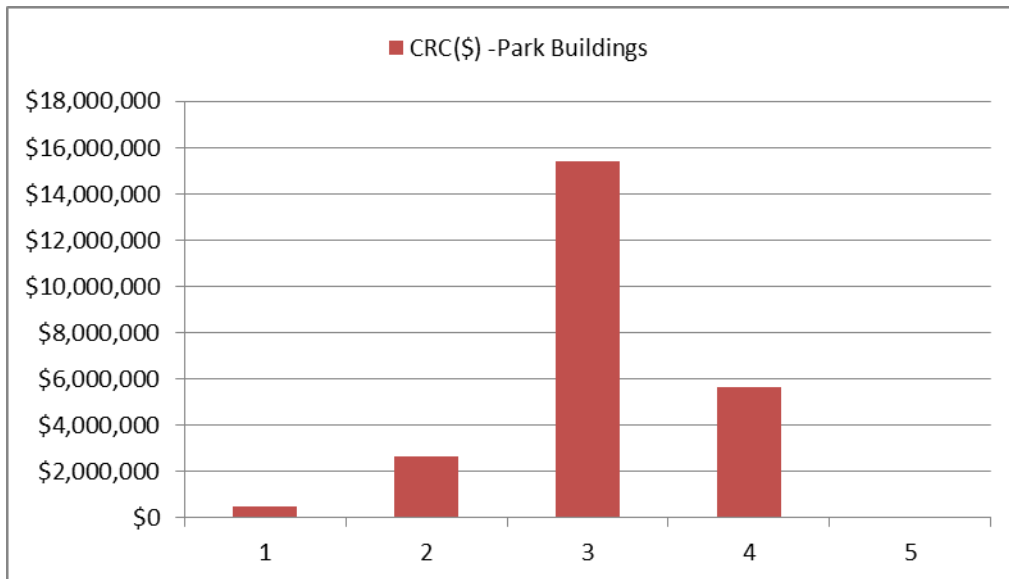
Detailed condition assessments are not carried out on a regular basis. However defect inspections are being carried out on a regular basis especially with playgrounds. A default condition rating of 2 to 3 (good to fair condition) in general can be applied to parks and open space assets in the absence of condition assessment data. Council intends to carry out condition assessments of parks and open space assets for future revisions of the AM Plan. The condition of park building assets was completed in 2013 along with building revaluations.

A condition assessment of the playgrounds was completed in August 2013. The condition profiles of our playgrounds are shown in Figure 5h.1.2. This shows that all playground assets are in fair to very good condition and there are no poor or very poor condition assets.

**Fig 5h.1.2: Asset Condition Profile Playgrounds**



**Fig 5h.1.3: Asset Condition Profile Park Buildings**



Source: Buildings revaluation 2013, \*too many buildings to show individual conditions graphically for park buildings

Condition is measured using a 1 – 5 grading system<sup>28</sup> as detailed in Table 5h.1.2.

<sup>28</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

**Table 5h.1.2: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Very Good:</b> only planned maintenance required
2	<b>Good:</b> minor maintenance required plus planned maintenance
3	<b>Fair:</b> significant maintenance required
4	<b>Poor:</b> significant renewal/rehabilitation required
5	<b>Very Poor:</b> physically unsound and/or beyond rehabilitation

#### 5h.1.4 Asset valuations

The value of open space assets recorded in the Asset Register as at 30 June 2013 covered by this Asset Management Plan is shown below. Assets were last re-valued at June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$32,793,777
Depreciable Amount	\$29,263,625
Depreciated Replacement Cost <sup>29</sup>	\$16,748,223
Annual Depreciation Expense	\$775,023

Note: some open space assets are valued along with building assets. New Asset Register needs to be developed for recording accurate information.

Useful lives have not been reviewed for some time and will be reviewed with the next revision of the AM Plan.

Key assumptions made in preparing the valuations were:

- The useful lives were appropriate for the type of asset;
- The unit rates used for valuations are current;
- Average renewal expenditure is based on composite useful life and current valuations.

Major changes from previous valuations are due to the fact they were not re-valued for some time and expected to be done in the next couple of years.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	2.65%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	2.63%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%

<sup>29</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Rate of Annual Asset Upgrade/New (including contributed assets) 0%

In 2014 the organisation plans to renew assets at 99.37% of the rate they are being consumed and will not be increasing its asset stock in the year.

### 5h.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables shows summary costs for the past 5 years.

#### R and M Expenditure

		2012/13	2011/12	2010/11	2009/10	2008/09
Open Space Assets	R and M	\$626,413	\$546,405	\$472,680	\$537,527	\$493,540
	Operational	\$891,952	\$848,007	\$795,158	\$921,058	\$817,082
	Depreciation	\$384,553	\$379,559	\$383,363	\$367,058	\$355,121
	<b>Total</b>	<b>\$1,902,918</b>	<b>\$1,773,971</b>	<b>\$1,651,201</b>	<b>\$1,825,643</b>	<b>\$1,665,743</b>

#### Capital Expenditure

		2012/13	2011/12	2010/11	2009/10	2008/09
Open Space Assets	Capital Expenditure	\$63,836	\$14,987	\$256,572	\$576,828	\$173,132

### 5h.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plans are summarised in Table 5h.2.1. These risks are reported to management and Council.

**Table 5h.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Council reserves	Significant environmental damage	High	Increase staff training, increase signage for sensitive areas	High	To be confirmed

\*The risks to open space building assets are covered under buildings lifecycle management plan

### 5h.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5h.3.1.

**Table 5h.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
	Planned and Unplanned
2012/13	\$626,413
2011/12	\$546,405
2010/11	\$472,680
2009/10	\$537,527
2008/09	\$493,540

Planned maintenance work is currently 20% of total maintenance expenditure.

### 5h.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5h.3.2.

**Table 5h.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Sportsfields	Facilitates sports in the community and encourages healthy lifestyles.
Parks and reserves	Promotes relaxation and recreational activity within the community, creates opportunities for tourism, encourages healthy lifestyles
Playgrounds	Provides opportunities for children to play and enjoy, promotes recreation and outdoor activity
Caravan parks (Tourist Parks)	Designed for short to medium term occupation by holiday makers with facilities for recreational activities.
Cemeteries	Provision of adequate and appropriate places for interment and remembrance. Council is responsible for maintenance and management of the cemeteries.
Road reserves	Provision for future construction of roads, they are managed as parks for the enjoyment by public or degraded bushlands

### 5h.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5h.3.3.

**Table 5h.3.3: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Sportsfields- premium fields	Not complying with Australian Standards	Meant for activities such as football, cricket, netball and other sporting activities. Maintenance of turf, grass cutting, irrigation and maintenance of floodlights etc
Parks and reserves- structures	Structural failure Damage from adverse weather event	Walking tracks, jetties for recreational boating, general outdoor activities such as BBQ's, cycling. Maintenance activities includes grass cutting, weeding and feeding, pest controls
Playgrounds	Structural failure Third party damage	Mainly for children to play/enjoy using play equipment. Equipment are inspected on a monthly basis for defects and safety issues.

All cemeteries are equally important and heritage listed	Insufficient burial plots and appropriate places for ash placement	Provision of adequate and appropriate places for interment and remembrance. Council is responsible for maintenance and management of the cemeteries. Frederickton, East Kempsey and Euroka cemeteries have Asset Management Plans developed by consultants.
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### 5h.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5h.3.1. Note that all costs are shown in inflated dollar values.

**Figure 5h.3.1: Projected Operations and Maintenance Expenditure**



Source: Council's draft LTFP (25 October 2013)

Note that the budget figures are inflated.

## 5h.4 Renewal/Replacement Plan

### 5h.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5h.4.1. Asset useful lives were not reviewed for some time and shall be reviewed in the next couple of years.<sup>30</sup>

**Table 5h.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life (years)
Playground equipment	25
Fencing	20 to 50
Landscaping	25
Cricket practice net	20
Cricket wicket	25
Boat ramp	25 to 50
Synthetic grass	25
Shade cover	10
Skate park	25
Floodlights	25
BBQ	50
Fish table	20 to 50
Water features	50
Memorials and monuments	100
Park furniture	50
Basketball court	50
Tennis court	25
Bubbler	25

- Park buildings useful lives are included in the Buildings LCMP.

### 5h.4.2 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5h.4.1. Note that all amounts are shown in real values.

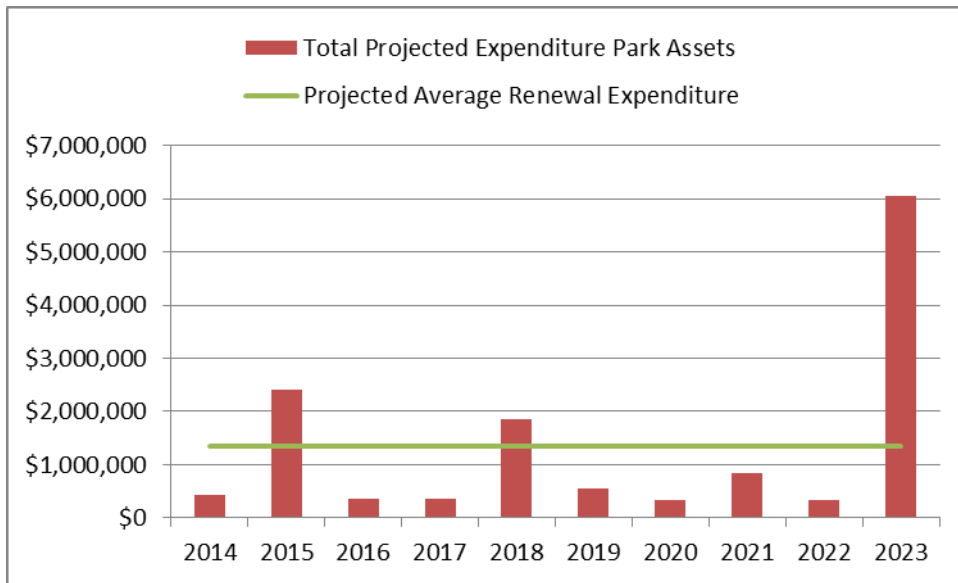
The projected capital renewal and replacement program is shown in Fig 5h.4.2.

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<sup>30</sup> Council's Land improvements Asset Register



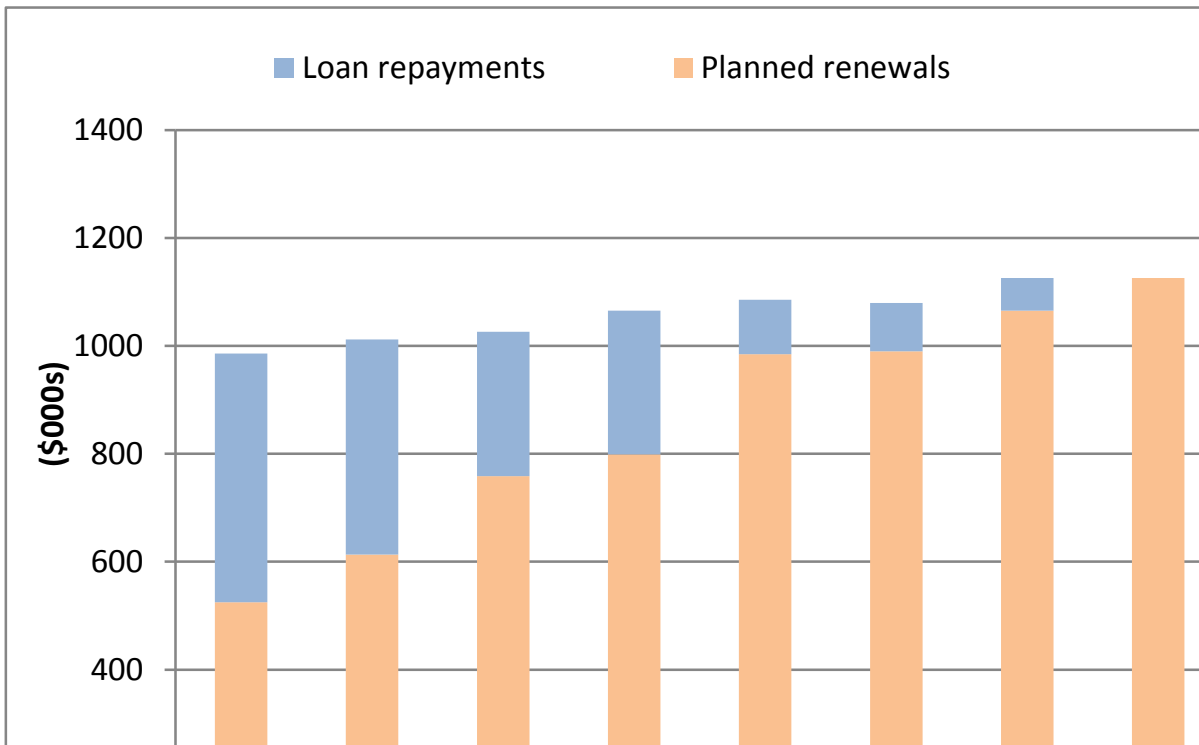
**Fig 5h.4.1: Projected Capital Renewal and Replacement Expenditure**



**Source: Council Modelling based on Open Space asset and Buildings valuation spreadsheets**

\* The renewals projections of land improvement assets was based on a composite useful life of 44.18 years as the open space assets are many with varying useful lives. It is based on the assets recorded in the Asset Register, its valuation and useful lives. The renewal park building assets were based on financial modelling using 2013 building revaluation data.

**Fig 5h.4.2: Planned Capital Renewal and Replacement Expenditure LTFP**



Source: Council's draft LTFP (25 October 2013)

Note that the budget figures are inflated.

The renewal projections indicates that there is a significant expenditure due in 2023 mainly due to park building assets amounting to approximately \$6 million. The average yearly renewal expenditure projections are \$1.35 million over the next ten years. The NPV of average planned expenditure in the LTFP is \$770,000. Therefore there is a gap of \$580,000 per year on renewals. Note that there is currently no planned renewal budget for sportsfields, playgrounds and parks.

## 5h.5 Creation/Acquisition/Upgrade Plan

### 5h.5.1 Summary of future upgrade/new assets expenditure

There is no new open space assets budgeted for in LTFP. Council regularly lodges grant funding applications to extend the open space assets on the basis that the grants are 100% externally funded.

## 5h.6 Disposal Plan

**Table 5h.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
Rudder Park Toilets H0053	To be demolished when adjoining community radio station develop their own amenities.	Unknown	Not quantified as yet	To be confirmed
Council is reviewing the utilisation of some public open spaces for future rationalisation.				

## 5h.7 Service Consequences and Risks

### 5h.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Some open space maintenance and renewal works (not quantified as yet);
- All playground, parks and sportsfield renewals.

### 5h.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- Not adequately meeting the service standards of the community ( under review);
- Increase of complaint and work orders to rectify issues to meet community expectations;
- Community dissatisfaction with Council services.

### 5h.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation.

These include:

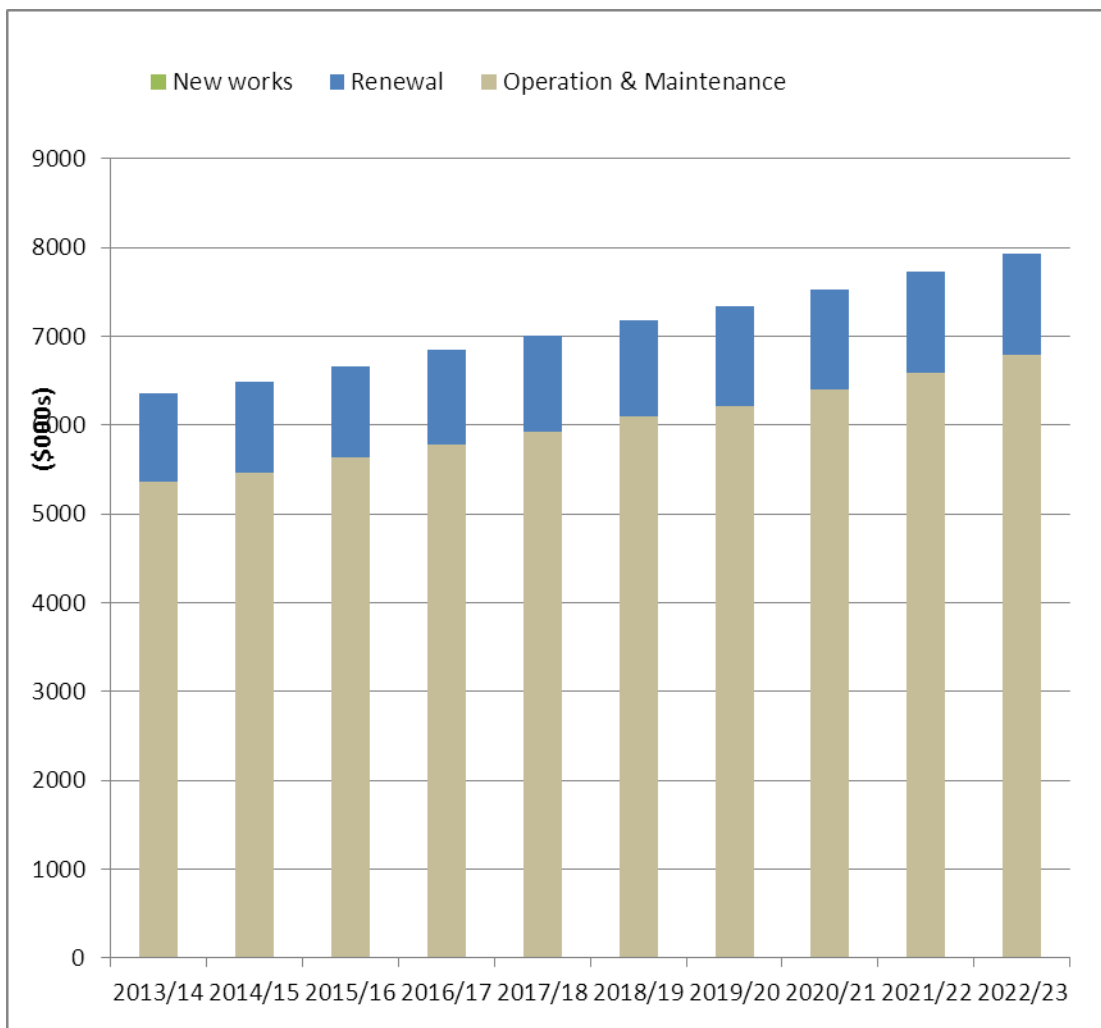
- Loss of reputational risks;
- Compensation payments due to perhaps preventable injuries;
- Community lacking appropriate spaces for physical activity and leading to an increase in preventable health issues.

These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and risk management plans actions and expenditures included within projected expenditures.

### Summary 10 Year Planned Expenditure

The planned 10 year expenditure for open space is presented below. This shows that there are no planned new works, and operations and maintenance consists 84.78 per cent of the planned expenditure for the next ten years.

**Fig 5h.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source: Council's draft LTFP (25 October 2013) Note that the budget figures are inflated.

## 5i. LIFECYCLE MANAGEMENT PLAN – CAR PARKS

The Car Parks Lifecycle Management Plan details how the organisation plans to manage and operate the car park assets at the agreed levels of service (defined in Section 3) while optimising lifecycle costs.

**Table 5i.1: Current and Desired Service Levels- car parking**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
	Number of complaints about standard of car parking	Collated from call centre database	To start measuring in July 2014	<5 per annum
Function – safety	Rating of personal safety at car parks	Customer satisfaction survey	To start measuring in July 2014 then re set targets	>80%
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Car park assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle	71% of car parks in fair or better condition (2011)	>95% of car parks assets in fair or better condition
Maintenance	None identified at this stage			
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	2.24%	Between 50% and 75%
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0%	Between 90% and 110%
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	0%	Between 95% and 102%

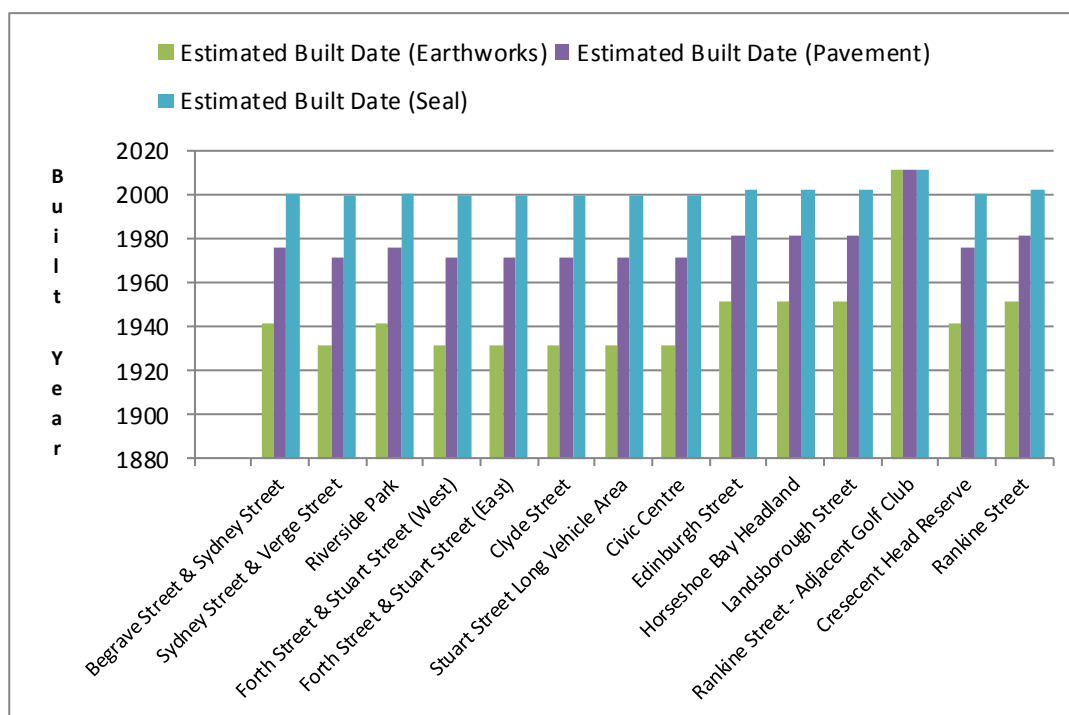
## 5i.1 Background Data

### 5i.1.1 Physical parameters

Council has 14 car parking facilities located at Kempsey CBD, West Kempsey, South West Rocks and Crescent Head.

The age profile of the assets included in this AM Plan is shown in Figure 5i.1.1.

**Figure 5i.1.1: Asset Age Profile**



Source: Asset Register - Council's estimated age profile based condition rating

### 5i.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5i.1.1.

**Table 5i.1.1: Known Service Performance Deficiencies**

Location	Service Deficiency
Belgrave & Sydney Streets, Kempsey CBD	Poor space layout and increase in vehicular traffic due to petrol station and taxi stand being located within carpark area.
Sydney & Verge Streets, Kempsey CBD	Inadequate lighting.
Riverside Park, Kempsey CBD	Security issue with anti-social behaviour and associated crime activities. Inadequate lighting which is made worse by extensive tree cover.
Forth Street & Stuart Street (East), Kempsey CBD	Large section in centre of carpark is privately owned and used by Council under agreement.
Rankine St, Crescent Head	Under utilised.

Horseshoe Bay Headland, SWR	<ul style="list-style-type: none"> <li>• Insufficient parking to meet the requirements of day visitors;</li> <li>• Parking is in prime locations;</li> <li>• Inefficient use of large paved area (number of parking spaces may be increased to meet demand).</li> </ul>
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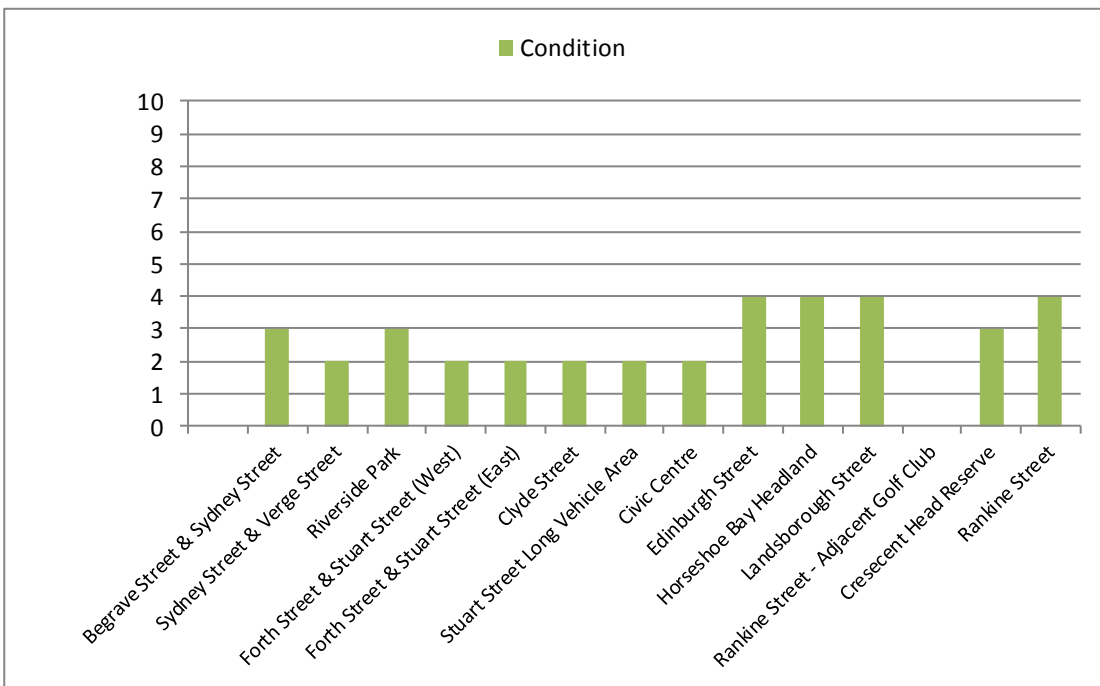
The above service deficiencies were identified by Council officers.

### 5i.1.3 Asset condition

Condition is monitored on an infrequent basis using a condition rating system.

The condition profile of our assets is shown in Figure 5i.1.2. This shows that all car parks are in good to excellent condition.

**Fig 5i.1.2: Asset Condition Profile**



Condition is measured using a 0 – 10 grading system<sup>31</sup> as detailed in Table 5i.1.2.

<sup>31</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

**Table 5i.1.2: Simple Condition Grading Model**

Condition Grading	Description of Condition
0	New
1	Near new
2	Excellent
3	Very good
4	Good
5	Fair
6	Fair to poor
7	Poor
8	Very poor
9	Extremely poor
10	Failed

#### 5i.1.4 Asset valuations

The value of assets recorded in the asset register as at 30 June 2013 covered by this Asset Management Plan is shown below. Assets were last revalued at June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$4,172,287
Depreciable Amount	\$2,466,445
Depreciated Replacement Cost <sup>32</sup>	\$3,930,645
Annual Depreciation Expense	\$55,179

Useful lives were reviewed in June 2011 by Infrastructure Department. A KSC Asset Revaluation Report – (June 2011) provides the methodology used for assessing useful life and remaining lives for earthworks, pavement and seals for car parks.

Key assumptions made in preparing the valuations were:

- Prediction of remaining life is based on assessed condition. The condition assessments are completed visually. Council developed a deterioration model for predicting remaining life of earthworks, pavements and seals based on assessed condition;
- The useful lives for earthworks, pavement and seals were constant for all car parks;
- Unit rates were based on in-house unit rates based on actual data available compared to those of nearby Councils such as Port Macquarie.

Major changes from previous valuations are due to Council revaluing its road and associated infrastructure assets including the bridge assets as at 30 June 2011. The valuation was undertaken by Council staff and resulted in a net write on in valuation of \$3,649,419. As at 30 June 2013 the roads and associated

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<sup>32</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

infrastructure were indexed with reference to the ABS – Producers Price Index 6427.0 and an indexation increase at the rate of 7.399% was applied.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	2.24%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (including contributed assets)	0%

In 2014 the organisation plans to renew assets at 0% of the rate they are being consumed and will not be increasing its asset stock in the year. Please note although there are no planned renewals and upgrades scheduled in the LTFP, the maintenance budget will cover a portion of renewals over the LTFP period. It should also be noted that although there are no funding for renewal included in the LTFP where addition funding is required, in-house prioritisation will divert funds if needed over the LTFP period.

#### 5i.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables shows summary costs for the past 5 years.

Tables to be prepared as information becomes available.

#### 5i.2 Infrastructure Risk Management Plan

No critical risks specific to car parks have been identified at this stage.

**Table 5i.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
No car park specific risks have been identified at this stage					



### 5i.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5i.3.1.

**Table 5i.3.1: Maintenance Expenditure Trends**

*(Maintenance expenditure will be updated as information becomes available)*

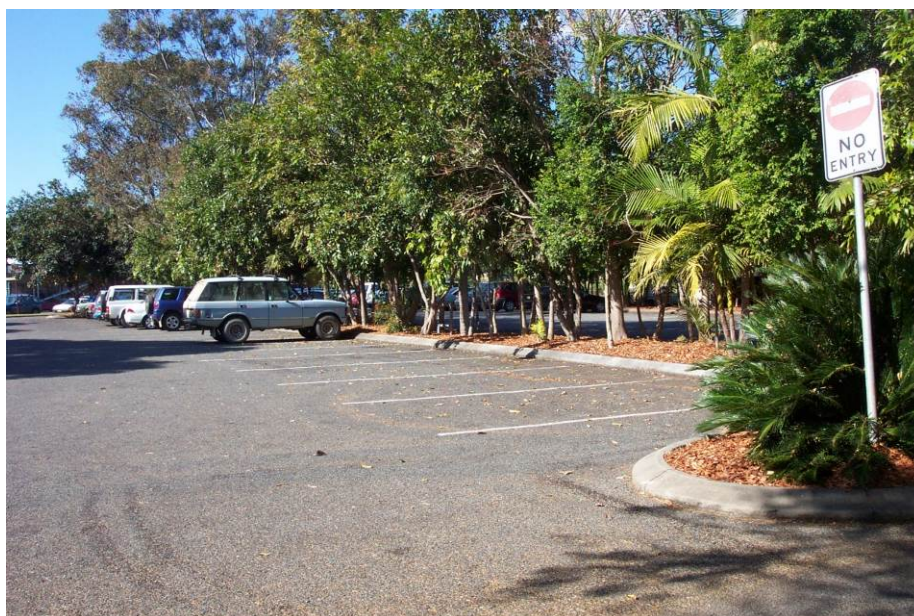
Planned maintenance work is currently 10% of total maintenance expenditure.

#### 5i.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5i.3.2.

**Table 5i.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Car parks	To provide a well maintained and a safe vehicle parking facility with adequate illumination and drainage, with appropriate lines and signs for guidance with a particular emphasis on providing sufficient parking spaces near the CBDs of each town.



#### 5i.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5i.3.3.

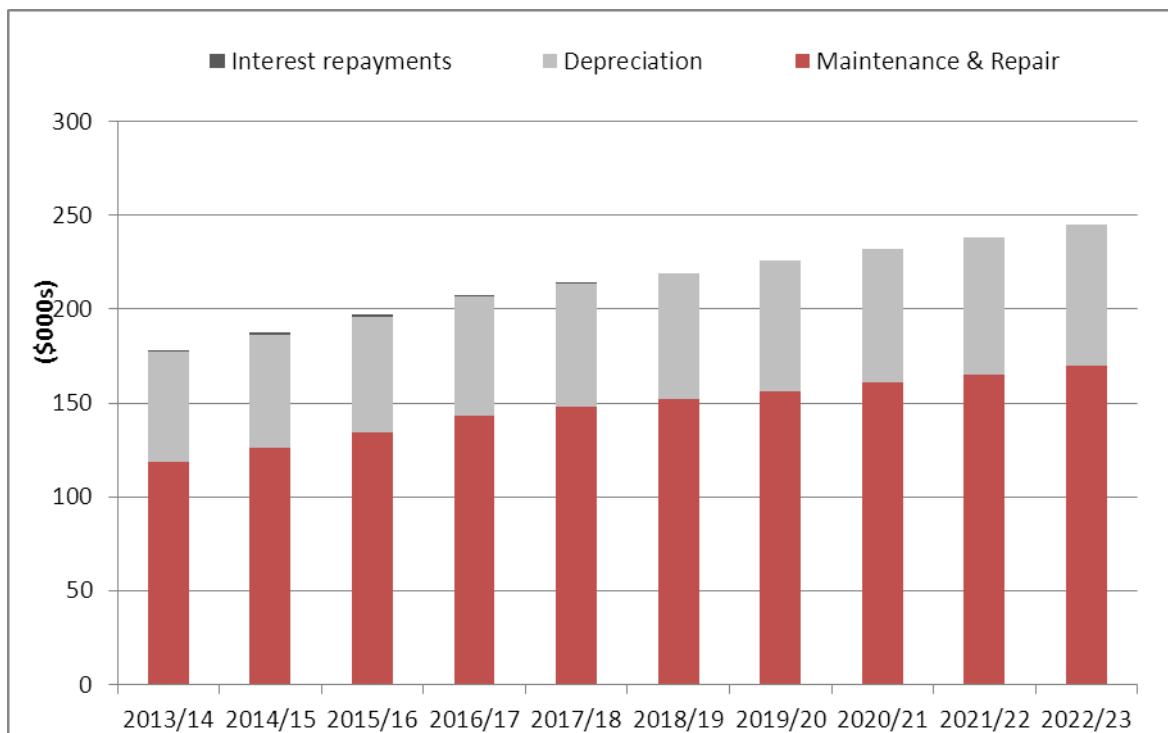
**Table 5i.3.3: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
All 14 car parking facilities are considered being equally critical as they are well utilised	Storm damage and flooding	Repairs to pothole, patches, resealing, sweeping, weed controls, line marking and signage, flood lighting maintenance where required.

### 5i.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5i.3.1. Note that all costs are shown in inflated dollars.

**Figure 5i.3.1: Projected Operations and Maintenance Expenditure**



Source: Council's draft LTFP (25 October 2013)  
Note that the budget figures are inflated.

## 5i.4 Renewal/Replacement Plan

### 5i.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5i.4.1. Asset useful lives were last reviewed on June 2011.<sup>33</sup>

**Table 5i.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Earthworks	100 years
Pavement	50 years
Seal	15 years

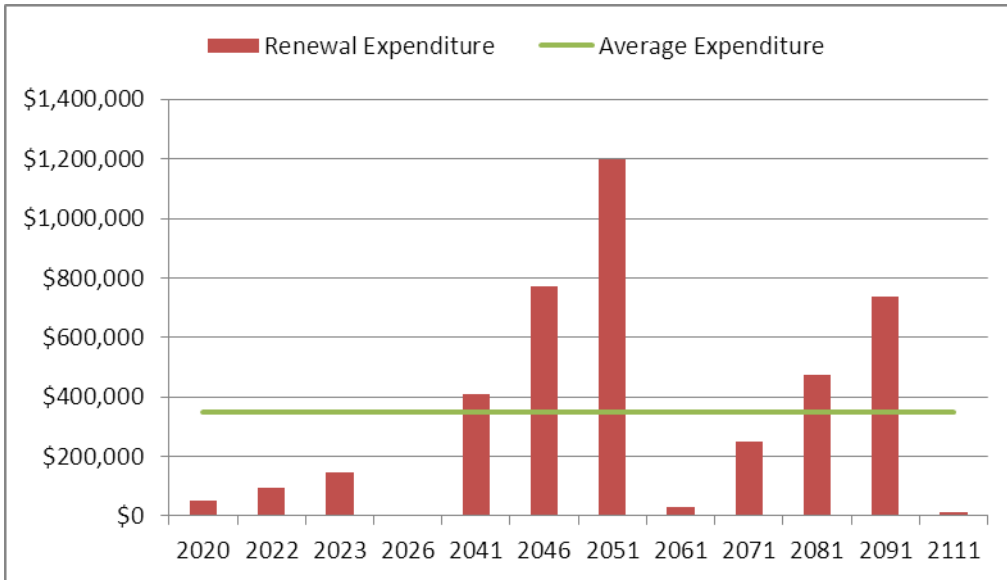
<sup>33</sup> KSC Asset Revaluation Report – June 2011

5i.4.2 Summary of future renewal and replacement expenditure

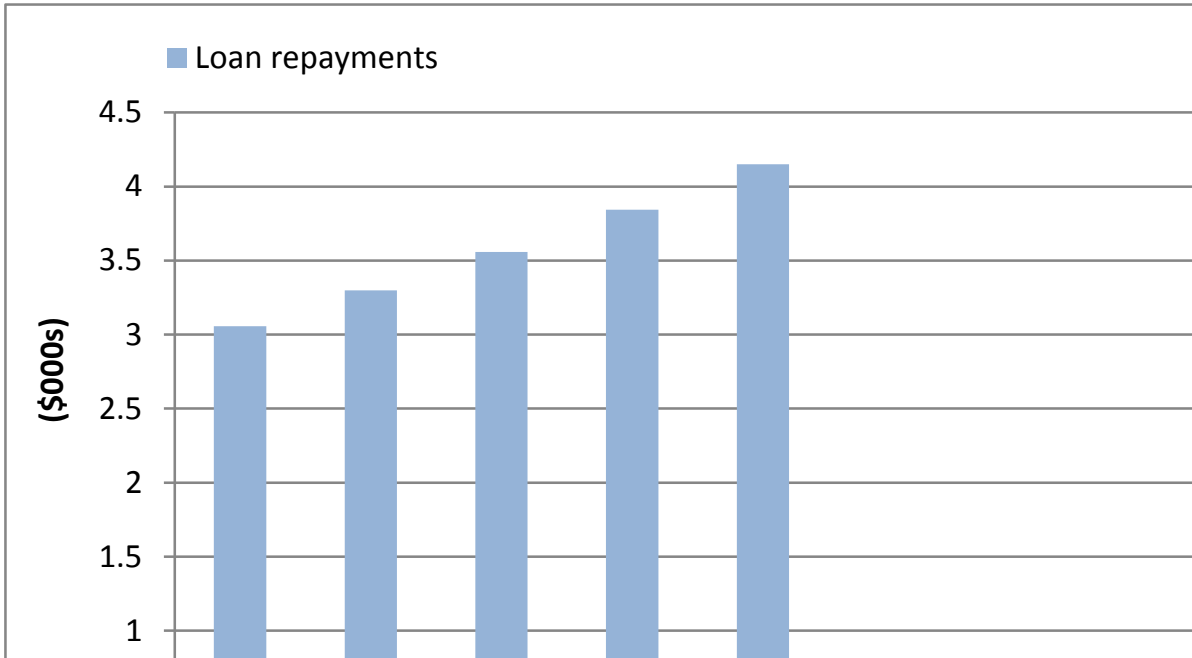
Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5i.4.1. Note that all amounts are shown in real values.

The projected capital renewal and replacement program is shown in Figure 5i.4.2.

**Fig 5i.4.1: Projected Capital Renewal and Replacement Expenditure- Age Based**



**Fig 5i.4.2: Projected Capital Renewal and Replacement Expenditure**



Source: Council's draft LTFP (25 October 2013)  
 Note that the budget figures are inflated.

The long term renewal expenditure projections require approximately \$350,000 per year for car park renewals. There is no provision for car park renewals in the LTFP. This would leave a gap of \$3,476,900 in the next 10 years causing the car parks to deteriorate gradually. However there is approximately \$120,000 in 2013 dollars in the maintenance and repair budget funding per year, which is adequate to cover renewal of the seals over next 15 to 20 years. Therefore the actual funding required for sustainable maintenance of the car parks would likely to be a figure in between. Therefore the funding requirements would need to be monitored and adjusted if found necessary upon future AM Plan revisions.

## 5i.5 Creation/Acquisition/Upgrade Plan

### 5i.5.1 Summary of future upgrade/new assets expenditure

There are currently no new assets for car parks planned in the Council’s draft LTFP.

## 5i.6 Disposal Plan

**Table 5i.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No car park assets have currently been identified for disposal.				

The underutilised car park at Rankine Street will be reviewed in the next three years including the disposal option.

## 5i.7 Service Consequences and Risks

### 5i.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Re-sealing works due lack of renewal funding but a portion may be covered under maintenance funding;
- Provide additional car parking at South West Rocks to meet demand.

### 5i.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- The conditions of surfaces being deteriorated;
- Lack of line marking and signage maintenance;
- Increase in complaints.

### 5i.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Increase of complaints from residents;

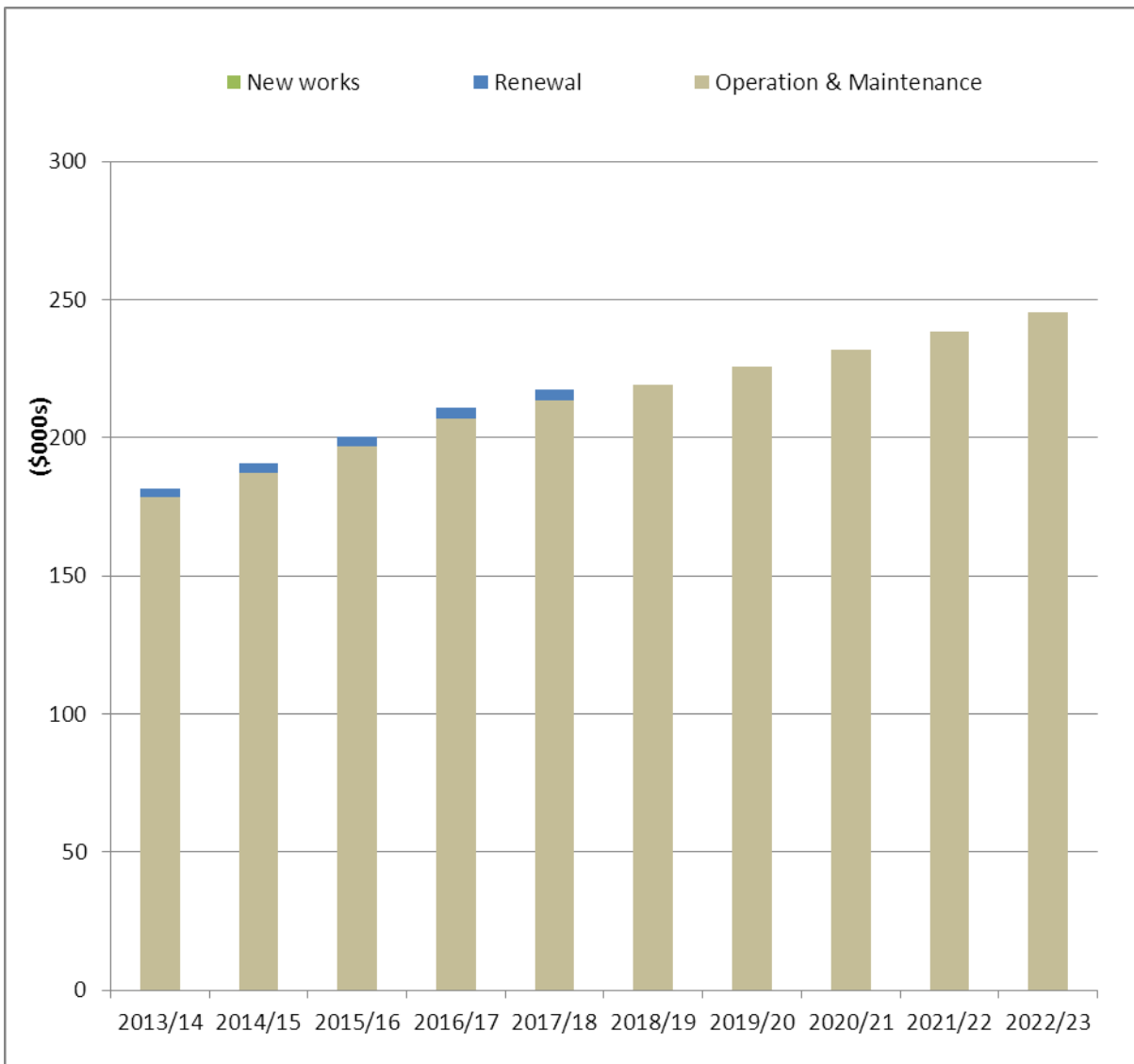
- Increase of public liability claims;
- Higher future costs associated with repair and renewals due to lack of investment in the maintenance of the assets in the next few years.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans, actions and expenditures included within projected expenditures.

### Summary 10 Year Planned Expenditure

The planned 10 year expenditure for car parking is presented below. This shows that there are no planned new works, only operations and maintenance works planned expenditure for the next ten years.

**Fig 5i.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source: Council's draft LTFP (25 October 2013)  
Note that the budget figures are inflated.

## 5j LIFECYCLE MANAGEMENT PLAN – BUS SHELTERS

The Bus Shelters Lifecycle Management Plan details how the organisation plans to manage and operate the bus shelter assets at the agreed levels of service (defined in Section 3) while optimising lifecycle costs.

Our current service levels for the bus shelter assets are detailed in the table below.

**Table 5j.1: Current and Desired Service Levels - bus shelters**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Quality	Percentage of residents somewhat satisfied, satisfied or very satisfied with quality of infrastructure in the Kempsey Shire	Customer satisfaction survey	83% (March 2012)	Current performance rating is maintained
Function – safety	Rating of personal safety at bus shelters	Customer satisfaction survey	To start measuring in July 2014 then re set targets	>80%
Responsiveness	Percentage compliance with graffiti removal response times	Collated from call centre database and works reports	To start measuring in July 2014	75% of graffiti removal requests responded to within 3 days
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	Bus shelter assets are maintained in good condition	Condition rating carried out on a 5 yearly cycle	89% of bus shelters in fair or better condition (2011)	>95% of bus shelter assets in fair or better condition
Maintenance	None identified at this stage			
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	6.21%	
Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	0%	
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	0%	



## 5j.1 Background Data

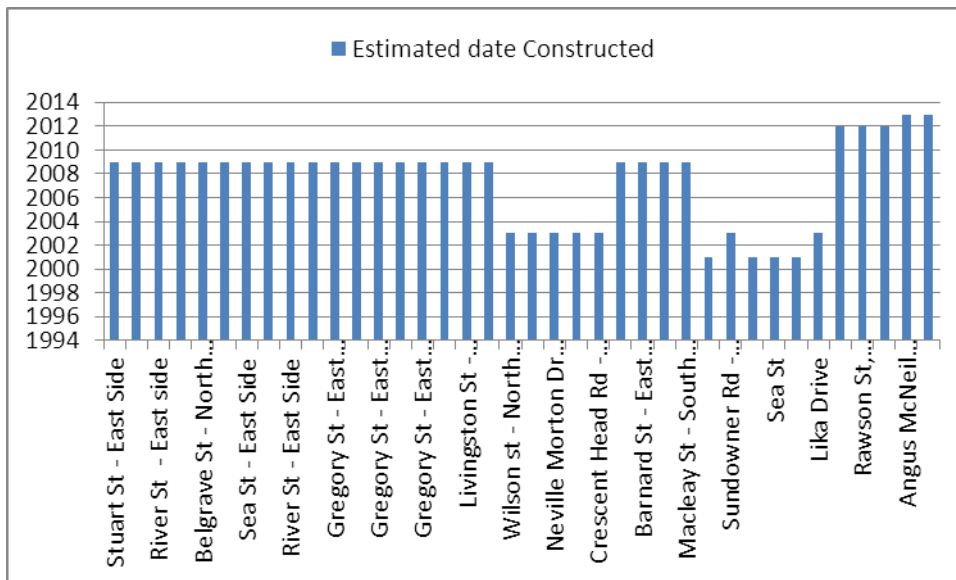
### 5j.1.1 Physical parameters

There are 36 bus shelter assets that service mainly the urban areas as well as for use by public transport commuters in rural and regional areas.

The exact age profile of the bus shelter assets is not known but approximate installation dates have been estimated.

The age profile of the bus shelters included in this AM Plan is shown in Figure 5j.1.1.

**Figure 5j.1.1: Asset Age Profile – Bus Shelters**



### 5j.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5j.1.1.

**Table 5j.1.1: Known Service Performance Deficiencies- bus shelters**

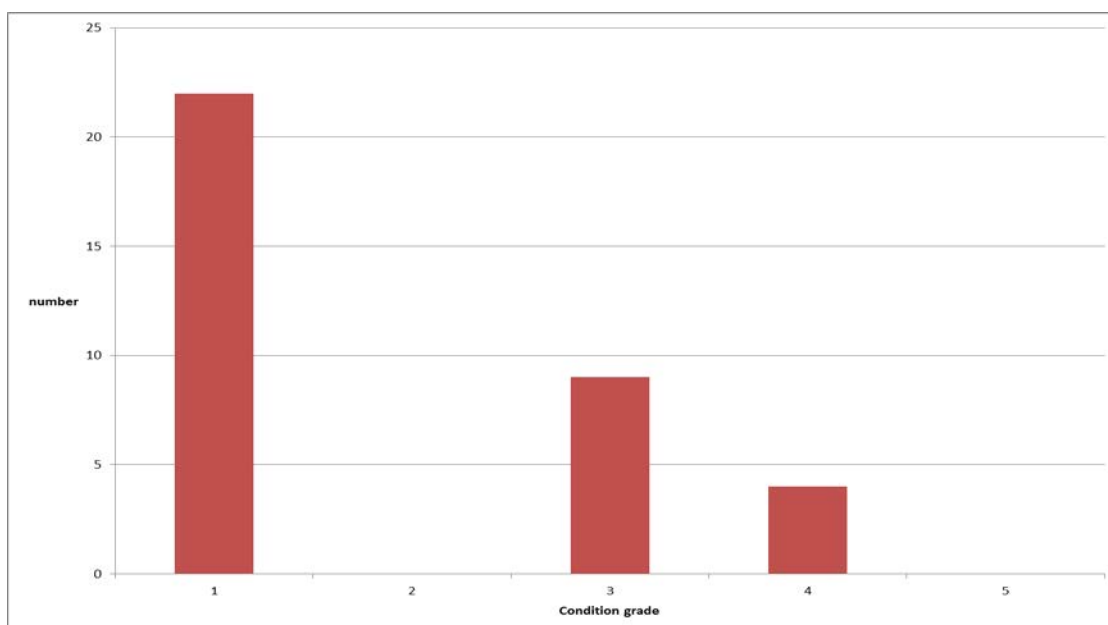
Location	Service Deficiency
Bus shelters in regional and rural areas	Many have no layby area for buses to safely pull over to collect passengers
All town centres	Older designed bus shelters are prone to vandalism
All town centres	Location of some bus shelters are not in areas that suit commuters or bus operator due to poor consultation

The above service deficiencies were identified from Council staff based on anecdotal evidence.

### 5j.1.3 Asset condition

Condition is monitored of the bus shelters through planned surveys timed with the valuation process. The condition profile of our bus shelter assets is shown in Figure 5j.1.2.

**Fig 5j.1.2: Asset Condition Profile – bus shelters**



Source: Council’s Finance asset register (July 2013)

Condition is measured using a 1 – 5 grading system<sup>34</sup> as detailed in Table 5j.1.2.

**Table 5j.1.2: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Very Good:</b> only planned maintenance required
2	<b>Good:</b> minor maintenance required plus planned maintenance
3	<b>Fair:</b> significant maintenance required
4	<b>Poor:</b> significant renewal/rehabilitation required
5	<b>Very Poor:</b> physically unsound and/or beyond rehabilitation

### 5j.1.4 Asset valuations

<sup>34</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.



The value of bus shelter assets recorded in the Asset Register as at 30 June 2013 covered by this AMP are shown below. Assets were last revalued at 30 June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$236,327
Depreciable Amount	\$236,327
Depreciated Replacement Cost <sup>35</sup>	\$150,127
Annual Depreciation Expense	\$14,668

Useful lives were internally reviewed in June 2011. Council's Asset Revaluation Report (June 2011) provides the methodology used for assessing useful life and remaining lives for bus shelter assets.

Key assumptions made in preparing the valuations were:

- Unit rates for calculating replacement costs have been based on existing materials.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	6.21%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (including contributed assets)	0%

In 2013 the organisation plans to renew assets at 0% of the rate they are being consumed and will not be increasing its asset stock in the year.

#### 5j.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. The following tables show the summary costs for the past five years for bus shelter assets. Note that bus shelters are included with kerb and gutter, and bus shelter only costs are shown below for completeness.

Repair and maintenance (R and M) costs:

Opex	2012/13	2011/12	2010/11	2009/10	2008/09
R and M	\$2,167	-	\$6,904	\$11,008	\$2,475
Operational	-	-	-		
Depreciation	\$14,668				

<sup>35</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

<b>Total</b>	<b>\$16,835</b>	<b>-</b>	<b>\$6,904</b>	<b>\$11,008</b>	<b>\$2,475</b>
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Capital expenditure costs:

<b>Capex</b>	<b>2012/13</b>	<b>2011/12</b>	<b>2010/11</b>	<b>2009/10</b>	<b>2008/09</b>
Bus shelters	\$30,302	\$21,604	\$1,365	-	-

### 5j.2 Infrastructure Risk Management Plan

No critical risks specific to bus shelters have been identified at this stage.

**Table 5j.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
No critical risks specific to bus shelters have been identified at this stage					

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

### 5j.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure is shown in Table 5j.3.1.

**Table 5j.3.1: Maintenance Expenditure Trends**

Year	Maintenance Expenditure
2012/13	\$2,167
2011/12	\$0
2010/11	\$6,904
2009/10	\$11,008
2008/09	\$2,475

Planned maintenance work is currently 0% of total maintenance expenditure as all expenditure is currently reactive maintenance.

### 5j.3.1 Asset hierarchy

The organisation’s service hierarchy is shown in Table 5j.3.2.

**Table 5j.3.2: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Bus shelters	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.

### 5j.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5j.3.3.

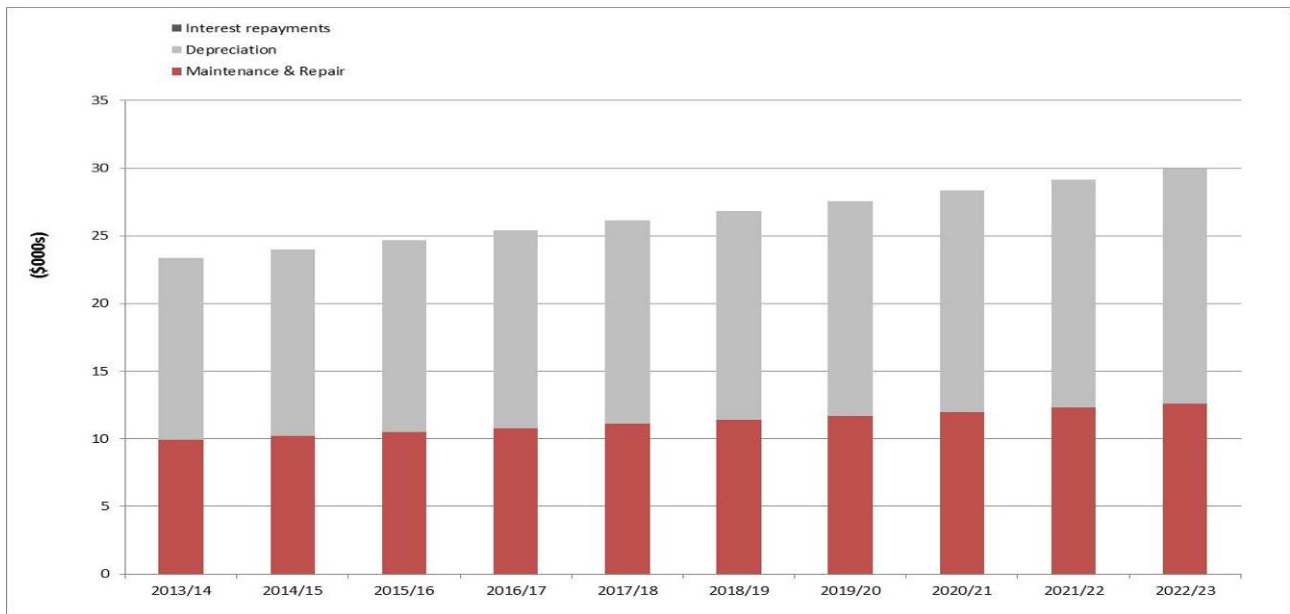
**Table 5j.3.3: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Bus shelters in the Kempsey CBD	Third party damage Structural failure Vandalism	Needed for the town’s economy so commuters have choices to get to work.
Bus shelters in the rural areas	Third party damage Structural failure Vandalism	Needed for people located in rural areas to offer alternative transport choice than their private vehicles.

### 5j.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5j.3.1. Note that all costs are shown in current inflated values.

**Figure 5j.3.1: Projected Operations and Maintenance Expenditure- planned budget**



Source: Council’s draft LTFP (18 October 2013)

Note that the budget figures are inflated.

### 5j.4 Renewal/Replacement Plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5j.4.1. Asset useful lives were last reviewed on June 2011.<sup>36</sup>

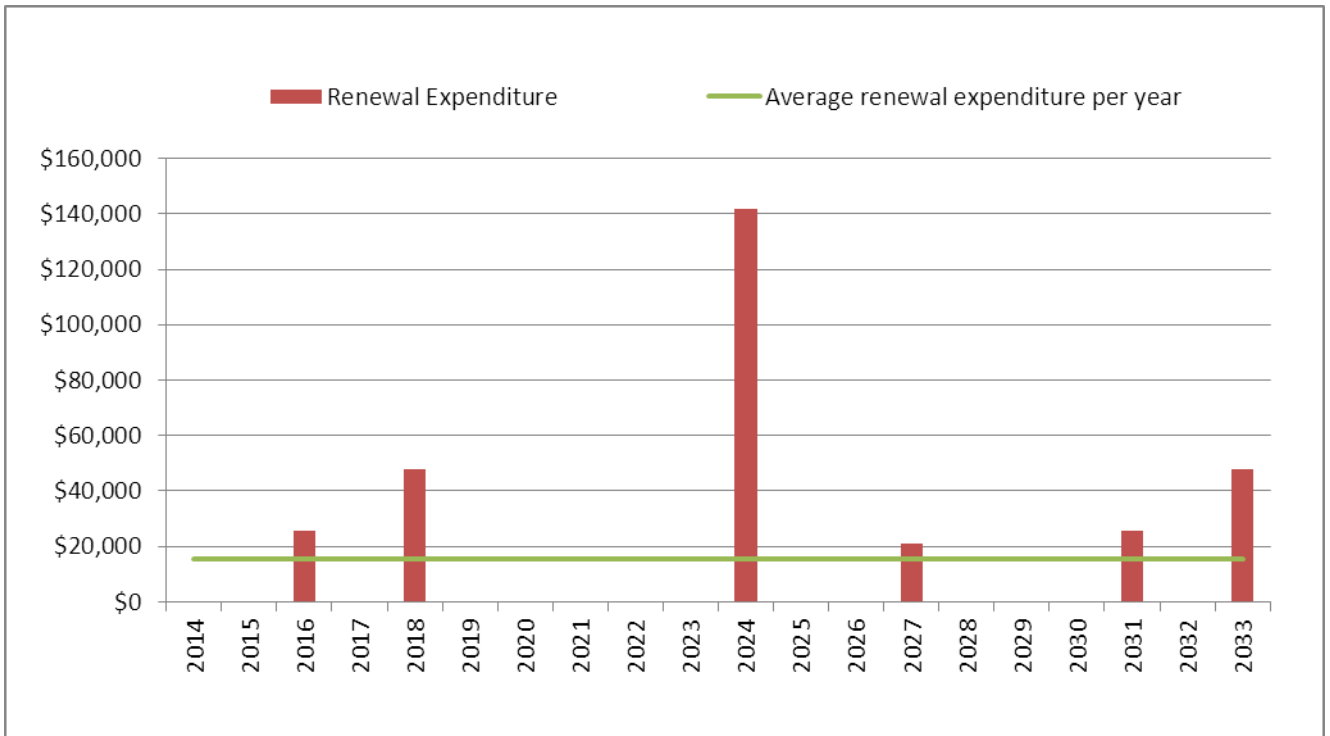
**Table 5j.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Bus shelters	15 years

#### 5j.4.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5j.4.1 by age and limited condition data where available. The planned budget available in the second graph is inflated figures to account for indexing. There is currently no planned renewal budget allowed in the LTFP.

**Fig 5j.4.1: Projected Capital Renewal and Replacement Expenditure- age based**



Source: Council’s asset revaluation (2011)

The actual asset needs are \$15,504 per annum averaged over 20 years and there is no planned budget. This means that the bus shelter backlog is not being addressed through a planned renewal programme and is reliant on external funding.

<sup>36</sup> KSC Asset Revaluation Report – June 2011

## 5j.5 Creation/Acquisition/Upgrade Plan

### 5j.5.13 Summary of future upgrade/new assets expenditure

There are currently no new assets for bus shelters planned in the Council's draft LTFP.

## 5j.6 Disposal Plan

**Table 5j.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No bus shelter assets have currently been identified for disposal.				

## 5j.7 Service Consequences and Risks

### 5j.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Renew bus shelter assets when they have reached the end of their life or functionally failed;
- Install any new bus shelter assets required to address public transport demand through community or bus operator requests.

### 5j.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- A disproportional amount of bus shelter assets will reach the end of their life creating a liability for Council;
- Using public transport will not seem attractive as an alternative to private vehicle use.

### 5j.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

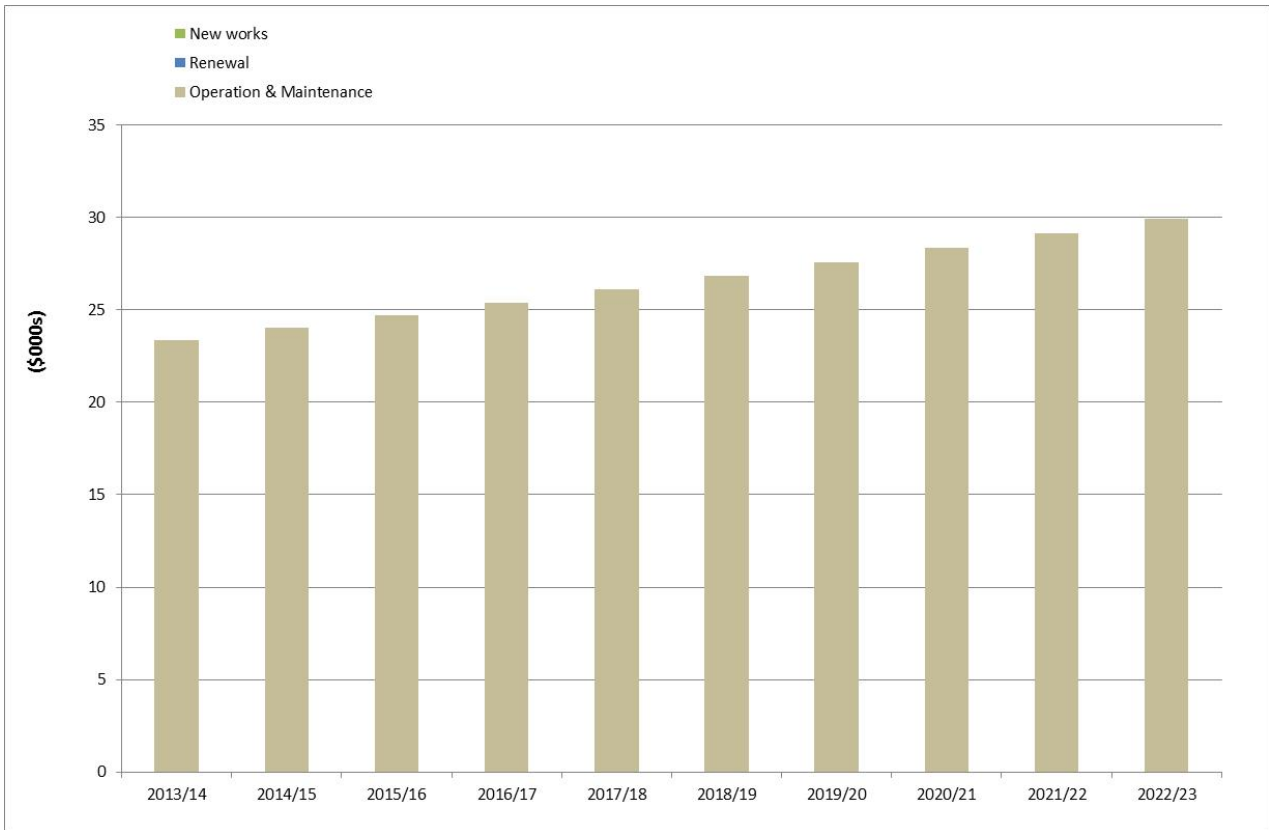
- Bus shelters becoming unsafe for commuters as vandalism and third party damage are not predictable and may not be quickly addressed.

These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and risk management plans actions and expenditures included within projected expenditures.

## Summary 10 Year Planned Expenditure

The planned 10 year expenditure for bus shelters is presented below. This shows that there is no planned renewal or new works for the next ten years.

**Fig 5j.7.1: 10 year projections as per LTFP : Renewals, New Works, Operation and Maintenance expenditure**



Source: Council's draft LTFP (18 October 2013)  
Note that the budget figures are inflated.

## 5k LIFECYCLE MANAGEMENT PLAN – GUARD RAILS

The Guard Rail Lifecycle Management Plan details how the organisation plans to manage and operate the guard rail assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

### Levels of Service

There are currently no levels of service specific to guard rails. This will be reviewed as part of the improvement plan with a focus on asset safety and condition. Guard rails help Council deliver a safe and pleasant network by providing physical mode separation. They are specifically designed and maintained to:

- Help reduce the likelihood of significant adverse effects resulting from errors in vehicle driving, walking or cycling;
- Provide physical separation and/or reduced traffic speeds both between traffic flows and between different types of road users in situations with elevated crash risks.

### 5k.1 Background Data

#### 5k.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 2.1. There are 17km of guard rails in total (as at 2011).

The age profile of the guard rail assets is not known but will be provided as new assets are replaced with future AMP revisions.

#### 5k.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5k.1.2.

**Table 5k.1.1: Known Service Performance Deficiencies- guard rails**

Location	Service Deficiency
Unreported and untraceable damage to guard rails	Caused by vehicle crashes and vandalism inflicting additional costs Guard rail loses safety functionality

The above service deficiencies were identified from Council staff based on anecdotal evidence.



### 5k.1.3 Asset condition

There is currently no asset condition collected on guard rails. It is a minor asset group so is a low priority for planned condition surveys. Condition is monitored through reactive reports from the public and the Police.

Condition is measured using a 1 – 5 grading system<sup>37</sup> as detailed in Table 5k.1.2.

**Table 5k.1.2: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Very Good:</b> only planned maintenance required
2	<b>Good:</b> minor maintenance required plus planned maintenance
3	<b>Fair:</b> significant maintenance required
4	<b>Poor:</b> significant renewal/rehabilitation required
5	<b>Very Poor:</b> physically unsound and/or beyond rehabilitation

### 5.1.4 Asset valuations

The value of guard rail assets recorded in the asset register as at 30 June 2013 covered by this AMP are shown below. Assets were last revalued at 30 June 2011. Assets are valued at brownfield rates.

Current Replacement Cost	\$4,742,059
Depreciable Amount	\$4,742,059
Depreciated Replacement Cost <sup>38</sup>	\$2,465,962
Annual Depreciation Expense	\$176,587

Useful lives were internally reviewed in June 2011. Council's Asset Revaluation Report (June 2011) provides the methodology used for assessing useful life and remaining lives for guard rail assets.

Key assumptions made in preparing the valuations were:

- Unit rates for calculating replacement costs have been based on existing materials

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	3.72%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New	0%

<sup>37</sup> IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

<sup>38</sup> Also reported as Written Down Current Replacement Cost (WDCRC).



(including contributed assets)

In 2013, the organisation plans to renew assets at 0% of the rate they are being consumed and will not be increasing its asset stock in the year.

#### 5k.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. Guard rails are currently included as part of the road budget.

### 5k.2 Infrastructure Risk Management Plan

No critical risks specific to guard rails have been identified at this stage.

**Table 5k.2.1: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
No critical risks specific to guard rails have been identified at this stage					

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.

### 5k.3 Routine Operations and Maintenance Plan

All maintenance work is currently all reactive.

#### 5k.3.1 Asset hierarchy

The organisation's service hierarchy is shown in Table 5k.3.1.

**Table 5k.3.1: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Guard rails	To maintain assets to desired condition and functionality appropriate for each asset at component levels by conducting detailed inspections to obtain condition data regarding compliance, future repairs, maintenance and renewals.

### 5k.3.2 Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5k.3.2.

**Table 5k.3.2: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Those preventing hazardous mixing of different users, e.g. pedestrians and motor vehicles	Third party damage Structural failure Vandalism	Needed so the road network is safe to use. Monitoring of assets while on patrol and responding to incidents from the public and Police.
Those located on Lifeline routes and busy roads and pedestrian ways	Third party damage Structural failure Vandalism	Needed so the road network is safe to use. Monitoring of assets while on patrol and responding to incidents from the public and Police.

### 5k.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is currently included under the roads budget. Most work is reactive in nature. Future forecasts for guard rails maybe shown separately with future AMP although this is a minor asset group.

## 5k.4 Renewal/Replacement Plan

### 5k.4.1 Renewal plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5k.4.1. Asset useful lives were last reviewed on June 2011.<sup>39</sup>

**Table 5k.4.1: Useful Lives of Assets**

Asset (Sub)Category	Useful life
Guard rails	25 years

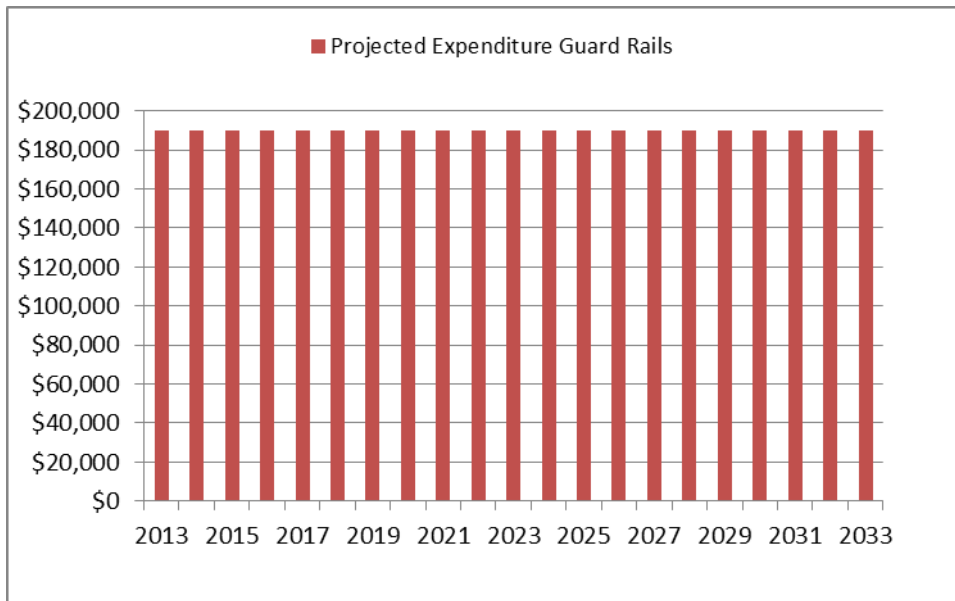
### 5.4.2 Summary of future renewal and replacement expenditure

There is currently no separate renewal budget for guard rails as it is included under roads budget. Guard rails are renewed or installed as part of a road upgrade project but this is minor in nature and scale.

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5k.4.1 by age.

<sup>39</sup> KSC Asset Revaluation Report – June 2011

**Fig 5k.4.1: Projected Capital Renewal and Replacement Expenditure- age based**



Source: Council’s asset revaluation (2011)

The actual asset needs are \$189,682 per annum averaged over 20 years and there is no planned budget. This means that the guard rail backlog is not being addressed through a planned renewal programme and is reliant on external funding.

**5k.5 Creation/Acquisition/Upgrade Plan**

**5k.5.1 Summary of future upgrade/new assets expenditure**

There are currently no new assets for stormwater drainage planned in the Council’s draft LTFP.

**5k.6 Disposal Plan**

**Table 5k.6.1: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No guard rail assets have currently been identified for disposal.				

**5k.7 Service Consequences and Risks**

**5.7.1 What we cannot do**

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Renew guard rails assets when they have reached the end of their life or functionally failed;
- Install any new guard rail assets required to address public safety concerns.

### 5k.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- A disproportional amount of guard rail assets will reach the end of their life creating a liability for Council.

### 5k.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Guard rails become unsafe as damage cannot be addressed.

These risks have been included with the Infrastructure Risk Management Plan and risk management plans, actions and expenditures included within projected expenditures.

## 5I LIFECYCLE MANAGEMENT PLAN – WASTE MANAGEMENT

The Waste Management Lifecycle Management Plan details how the organisation plans to manage and operate the waste management assets at the agreed levels of service (defined in Section 3) while optimising lifecycle costs.

### Levels of Service

Our current service levels for the waste management assets are detailed in the table below.

**Table 5I.1 - Current and Desired Service Levels- waste management**

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service (2012/13)	Optimal Level of Service
<b>COMMUNITY LEVELS OF SERVICE</b>				
Safety	Provide a waste collection service to maintain hygiene standards and safe collection in the Shire	Contract management records	To start measuring in July 2014	100% of waste collection on weekly basis
		Contract management records	To start measuring in July 2014	100% of kerbside collection on fortnightly basis
Environmental performance	Quantity of material disposed of to landfill each year (tonnes)	Collated from landfill operator records	18,719t	<14,000t
	Quantity of material diverted from landfill each year	Collated from landfill operator records	11,081t	>6,500t
	Quantity of material reused/recycled as a proportion of the quantity of material disposed in the landfill each year	Collated from landfill operator records	38.4%	60%
	Percentage improvement in the quantity of materials diverted from the landfill per month	Collated from landfill and transfer station operator records	4.5%	5%
<b>TECHNICAL LEVELS OF SERVICE</b>				
Operations	None identified at this stage			
Maintenance	None identified at this stage			
Renewal	None identified at this stage			
Upgrade/New	None identified at this stage			
<b>OVERALL ASSET MANAGEMENT SUSTAINABILITY</b>				
Asset consumption ratio	Rate of annual asset consumption (how much of asset stock being used up each year)	Ratio of depreciated expense to depreciable amount	NA (as currently covered under Buildings LCMP)	

Asset renewal ratio	Rate of annual asset renewal (how much of asset stock being replaced each year)	Ratio of capital renewal expenditure in a year to depreciable amount	NA (as currently covered under Buildings LCMP)	
Asset renewal funding ratio	Ability to fund asset renewals in future	NPV of planned renewals in LTFP divided by NPV of AMP renewal requirements	NA (as currently covered under Buildings LCMP)	

## 5I.1 Background Data

### 5I.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 2.1. The waste management assets include one waste management centre at Crescent Head and three transfer stations at South West Rocks, Stuarts Point and Bellbrook. The overall waste management service includes a comprehensive range of waste management and education services including fortnightly recycling and green waste collection, community information sessions, school visits and a 'Waste into Art' competition for local schools.

The age profile of the waste management assets is not documented separately as included as part of the buildings asset group but will be provided with future AMP revisions. It is understood that most waste management assets were constructed from 2001 to 2012.

A summary of annual usage is shown in the table below:

**Table 5I.1.1: Annual Usage - waste management**

Waste management activity	2010/11	2011/12	2012/13
Waste collection and disposal (tonnes) disposed of at landfill (includes red bins)	16532t	18,045t	18,719t
Recycled material diverted from landfill (tonnes) collected in Yellow & Green bins	8071t	7556t	11,081t

### 5I.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

**Table 5I.1.2: Known Service Performance Deficiencies- waste management**

Location	Service Deficiency
Waste management centre at Crescent Head	Surface and ground water monitoring not meeting EPA requirements.
	Recycling and reuse of waste has increased, however the total volume of waste being disposed of to the landfill has increased compared to previous years.
Transfer stations	The transfer stations are generally located on old disused landfill sites, without access to power or water. As a result their level of development is primitive.
	The transfer stations achieve good separation of waste however the infrastructure is basic, more formal infrastructure would encourage separation.
Old Landfill at Kempsey Showground	Capping is inadequate in thickness in some areas due to previous settlement.
	Stormwater system increases the risk of leachate generation adding to the impact upon the sewer system (works are in progress to redirect this stormwater).

The above service deficiencies were identified from Council staff based on anecdotal evidence.

### 5I.1.3 Asset condition

Condition is monitored of the waste management assets through planned surveys timed with the valuation process for the buildings asset group. Understanding the waste management asset condition will be provided with future AM Plan revisions.

### 5I.1.4 Asset valuations

The value of waste management assets recorded in the asset register as at 30 June 2013 covered by this AMP is shown below. Assets were last re-valued at 30 June 2013. Assets are valued at brownfield rates.

Current Replacement Cost	\$602,184
Depreciable Amount	\$511,378
Depreciated Replacement Cost <sup>40</sup>	\$438,800
Annual Depreciation Expense	\$9,921

Useful lives were internally reviewed in June 2011. Council's Asset Revaluation Report (June 2011) provides the methodology used for assessing useful life and remaining lives for bus shelter assets.

Key assumptions made in preparing the valuations were:

- Unit rates for calculating replacement costs have been based on existing materials

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<sup>40</sup> Also reported as Written Down Current Replacement Cost (WDCRC).

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	1.94%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	0%
Rate of Annual Asset Upgrade/New (including contributed assets)	0%

In 2013 the organisation plans to renew assets at 0% of the rate they are being consumed . Council will however and be increasing its asset stock in the year based on grant funding. It has been noted that LTFP has allocated \$795,907 over the next three years to improve recycling processes through grant funding. This funding allocation will not be spent on renewal of existing assets.

#### 5I.1.5 Historical Data

Historical data is captured for maintenance and capital work expenditure in the corporate financial system 'CivicView'. Financial costs for the waste management assets are included as part of the buildings asset group. It is planned to separately record the financial costs for the waste management assets as part of the improvement program.

#### 5I.2 Infrastructure Risk Management Plan

Critical risks and the selected treatment plan is operational are summarised in Table 5.2. These risks are reported to management and Council/Board.

**Table 5I.2: Critical Risks and Treatment Plans**

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Waste management centre	Prosecuted or fined due to non-compliant with EPA Licence	High (Possible, Major)	Formal review of existing landfill management plan; Formal review of inspection plan	High (Possible, Major)	To be confirmed
Waste management centre	Injury to public at at unloading facility	High (Possible, Moderate)	Formal review of site management practices; industry wide improvements to transfer station standards	High (Possible, Moderate)	To be confirmed
Waste transfer stations	Prosecuted or fined due to non-compliant with EPA Licence	Low	Formal review of site management practices; industry wide improvements to transfer station standards	Low	To be confirmed

Note \* The residual risk is the risk remaining after the selected risk treatment plan is operational.



### 5I.3 Routine Operations and Maintenance Plan

Actual past maintenance expenditure for waste management assets is included in the buildings asset group.

Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience and judgement.

#### Asset hierarchy

The organisation's service hierarchy is shown in Table 5I.3.1.

**Table 5I.3.1: Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Waste management centre	To provide for the regular collection and disposal of rubbish and recyclables from households and businesses in the Shire in a safe manner.
Transfer stations	To promote recycling and reuse in the Shire.

#### Critical Assets

Critical assets failure modes and required operations and maintenance activities are detailed in Table 5I.3.2.

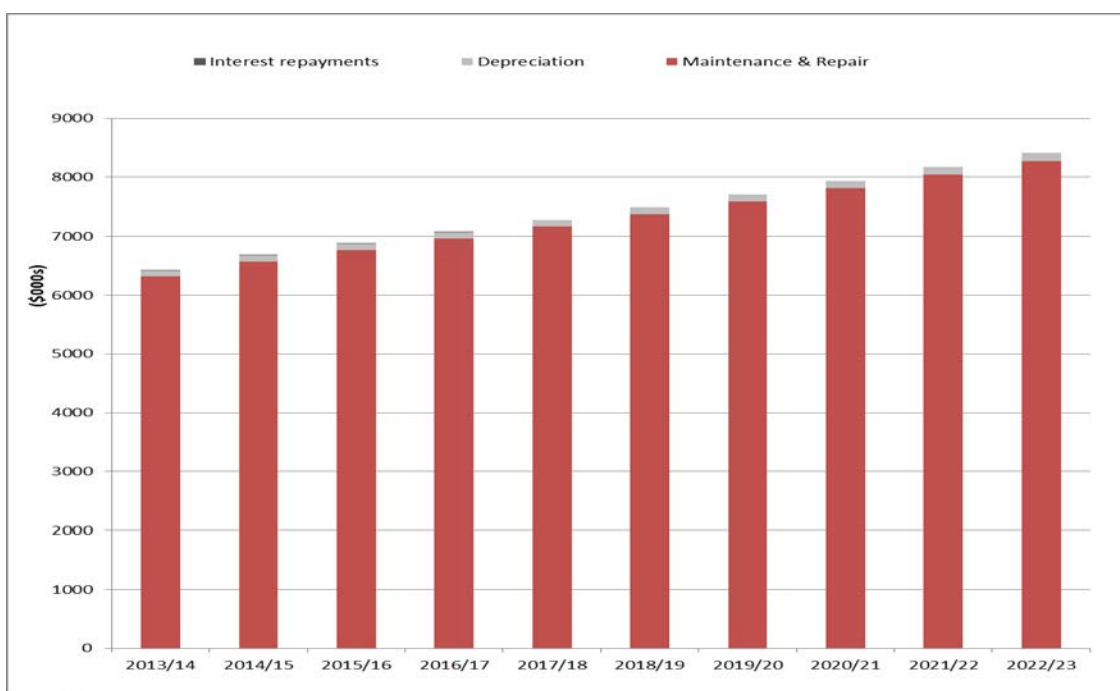
**Table 5I.3.2: Critical Assets and Service Level Objectives**

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
Waste management centre-landfill	Non-compliant EPA license	Needed for the Shire for public health purposes as unacceptable to have no facility for receiving refuse.

#### 5I.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure for the waste management assets is forecast to trend in line with the value of the asset stock as shown in Figure 5I.3.1. Note that all costs are shown in inflated dollar values.

**Figure 5I.3.1: Projected Operations and Maintenance Expenditure - planned budget**



#### 5I.4 Renewal/Replacement Plan

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5I.4.1. Asset useful lives were last reviewed on June 2013.

**Table 5I.4.1: Useful Lives of Assets**

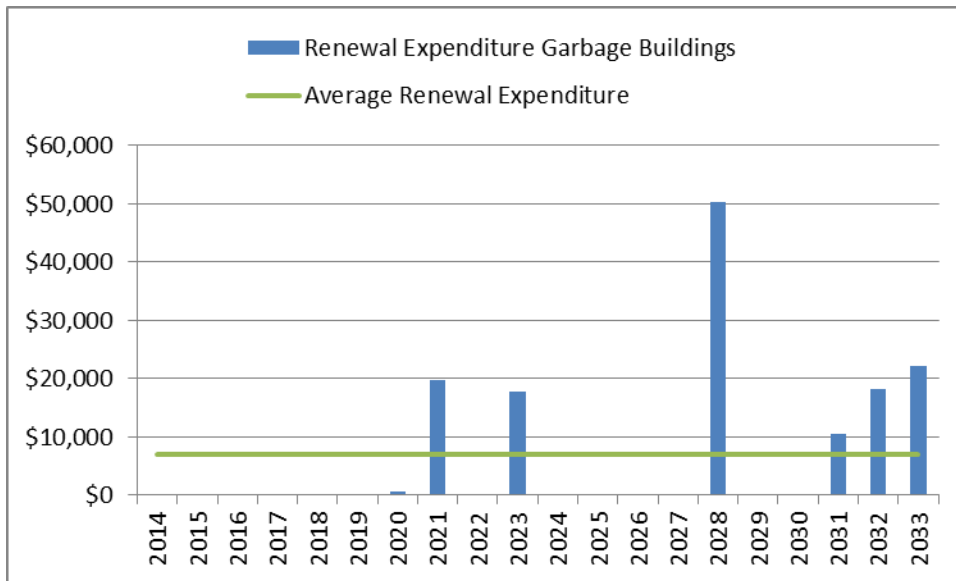
Asset (Sub)Category	Useful life
Waste management centre and transfer station buildings	50 years
Landfill	30 years for the current development plan (however the whole site could accommodate up to 100yrs with more development and approvals in place)

#### 5I.4.2 Renewal and Replacement Strategies

#### 5I.4.3 Summary of future renewal and replacement expenditure

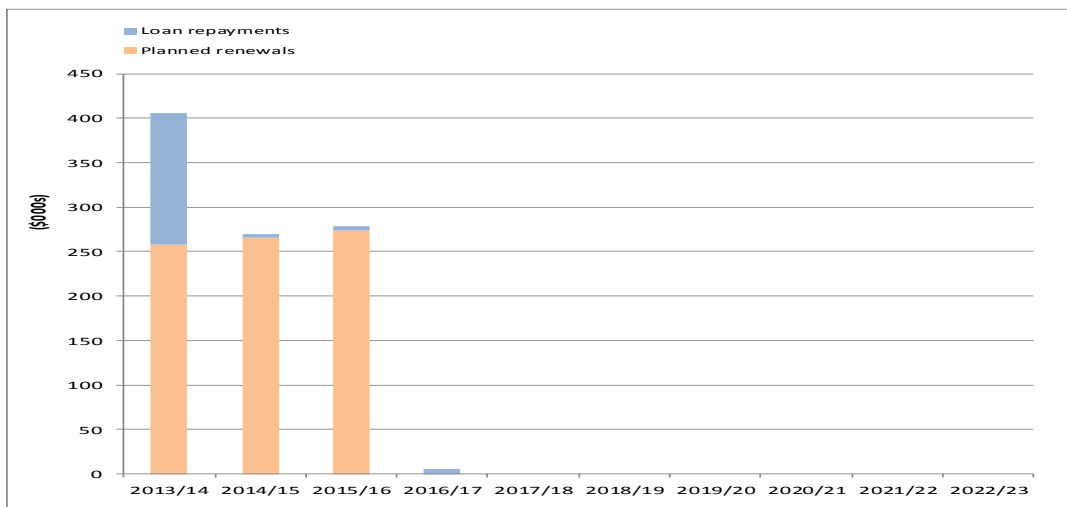
Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5I.4.1 by age and limited condition data where available. The planned budget available in the second graph is inflated figures to account for indexing. There is currently no planned renewal budget allowed in the LTFP.

**Fig 5I.4.1: Projected Capital Renewal and Replacement Expenditure - age based**



Source: Council's Financial Modelling

**Fig 5I.4.2: Ten year projections as per LTFP (below)**



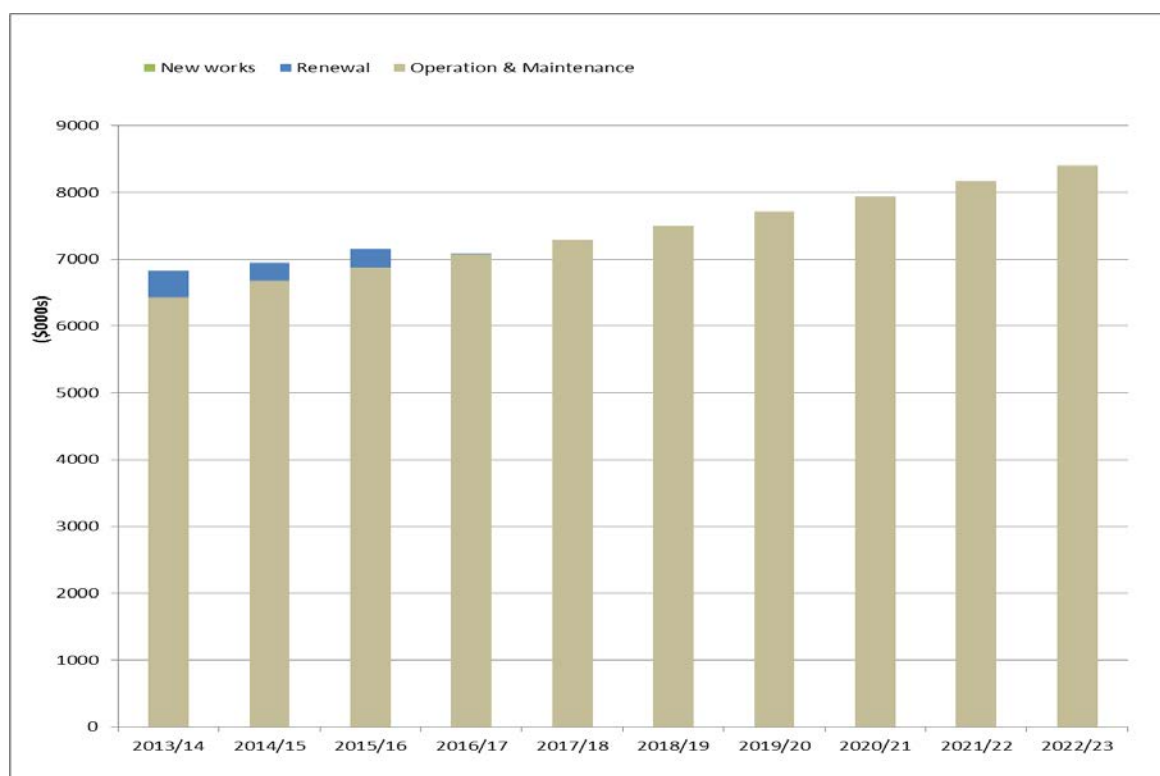
Planned renewal profiles provided for the waste management assets as the inventory is incomplete and in most cases the assets currently form a small part of other major groups such as buildings. It is intended to develop these with future revisions of this AM Plan as the core asset data becomes available. The waste management assets are relatively new so there is no known backlog (based on anecdotal knowledge). A complete review of Council Waste Strategy and Education program is currently in progress this will provide considerable input into revision of this plan.

**5I.5 Creation/Acquisition/Upgrade Plan**

**5I.5.3 Summary of future upgrade/new assets expenditure**

Council has allocated renewal funding for improving recycling process by creation of new waste management assets via grant funding in the Council's draft LTFP.

**Fig 5I.5.1: Capital and Operation & Maintenance Expenditure - Waste**



## 5I.6 Disposal Plan

**Table 5I.6: Assets Identified for Disposal**

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
No waste management assets have currently been identified for disposal.				

## 5I.7 Service Consequences and Risks

### 5I.7.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Fully upgrade all transfer station sites.

### 5I.7.2 Service consequences

Operations and maintenance activities and capital projects that cannot be undertaken will maintain or create service consequences for users. These include:

- Assets may need to be closed as public safety standards change and the community are no longer able to access site without a liability to Council. This would then drive reconsideration of the delivery of remote transfer station services by Council.

### 5I.7.3 Risk consequences

The operations and maintenance activities and capital projects that cannot be undertaken may maintain or create risk consequences for the organisation. These include:

- Service interruption for landfill/transfer stations due to deteriorated building assets may cause public safety issues.
- Prosecution for failing to meet EPA license requirements.

These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and risk management plans actions and expenditures included within projected expenditures.

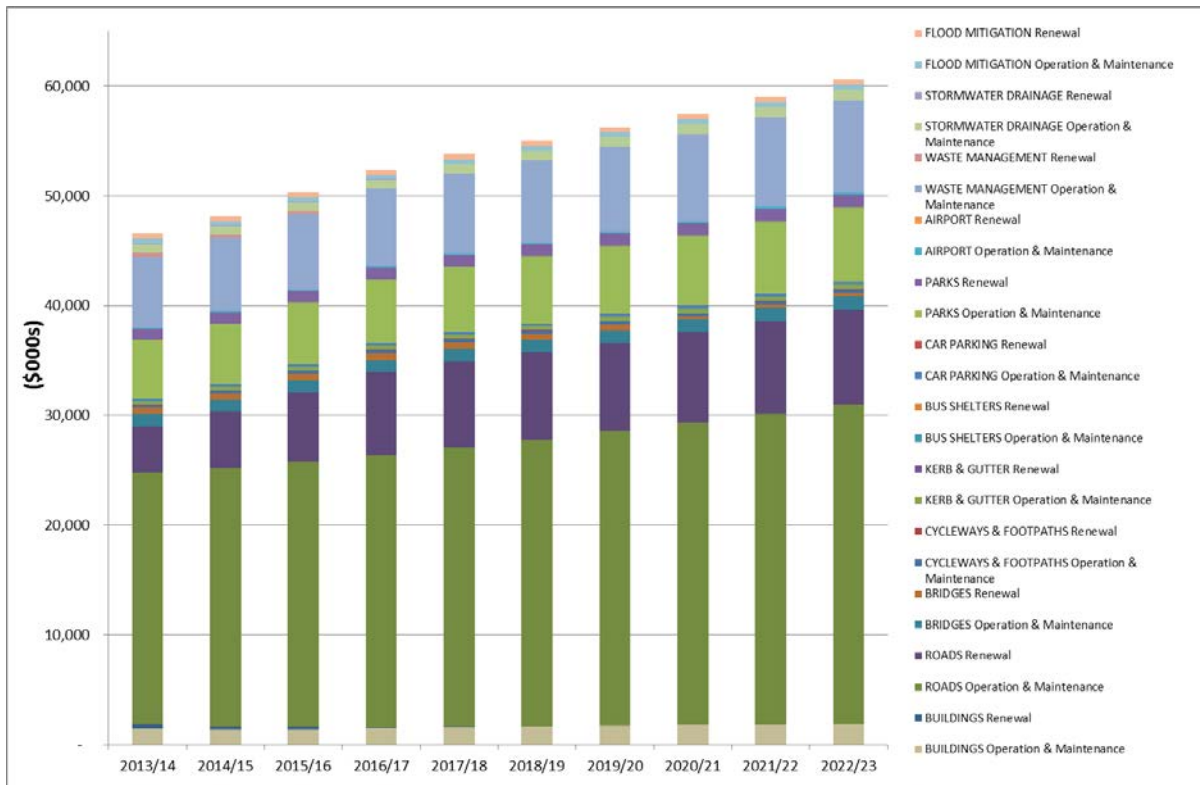
## 6. FINANCIAL SUMMARY

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 desired levels of service and current and projected future asset performance.

### 6.1 Financial Statements and Projections

The financial projections are shown in Fig 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are inflated. The summary projection for each asset group is detailed in the separate lifecycle plans in Section 5. Overall there is \$945 million in total planned for operations and maintenance and \$95.6 million in total planned renewals for the next ten years. The roads asset group is the largest expenditure area with 27% of funding for O&M and 76% of funding for renewals allocated to this group over the ten year period. This is followed by the parks asset group at 6% of O & M and 11% of renewals respectively.

**Fig 6.1.1: Projected Operating and Capital Expenditure- for all asset groups (excluding water supply and wastewater assets)**



Source: Council’s draft LTFP (18 October 2013)  
 Note that the budget figures are inflated.

#### 6.1.1 Sustainability of service delivery

There are four key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the asset renewal funding ratio, asset sustainability ratio in year 2014 and over 5 and 10 years of the planning period.

## Asset Renewal Funding Ratio

Asset Renewal Funding Ratio<sup>41</sup> 31.11% (NPV of LTFP Renewal/NPV AMP Renewal projections, i.e \$72,480,654/\$232,990,767 Ref. LCMPs)

The Asset Renewal Funding Ratio is the most important indicator and reveals that over the next 10 years, the organisation is forecasting that it will have 31.11% of the funds required for the optimal renewal and replacement of its assets.

## Asset Sustainability Ratio

The Asset Sustainability Ratio is defined as shown below:

Asset Sustainability Ratio = Capital Renewal and Replacement Expenditure/Depreciation

The projections of renewals and depreciation are shown in the following table.

**Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall- for all asset groups**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Buildings	\$721,042	\$721,042	\$721,042	\$721,042	\$721,042	\$721,042	\$721,042	\$721,042	\$721,042	\$721,042
Roads	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088	\$18,121,088
Bridges	\$791,151	\$791,151	\$791,151	\$791,151	\$791,151	\$791,151	\$791,151	\$791,151	\$791,151	\$791,151
Cycleways & Footpaths	\$137,260	\$137,260	\$137,260	\$137,260	\$137,260	\$137,260	\$137,260	\$137,260	\$137,260	\$137,260
Kerb & Gutter	\$311,532	\$316,839	\$316,839	\$316,839	\$316,839	\$316,839	\$316,839	\$316,839	\$316,839	\$316,839
Bus Shelters	\$13,018	\$13,018	\$13,018	\$13,018	\$13,018	\$13,018	\$13,018	\$13,018	\$13,018	\$13,018
Guard Rail	\$176,587	\$176,587	\$176,587	\$176,587	\$176,587	\$176,587	\$176,587	\$176,587	\$176,587	\$176,587
Car Parking	\$56,741	\$56,740	\$56,740	\$56,740	\$56,740	\$56,740	\$56,740	\$56,740	\$56,740	\$56,740
Open Space	\$1,042,921	\$1,044,496	\$1,047,165	\$1,047,539	\$1,050,745	\$1,050,299	\$1,051,170	\$1,051,705	\$1,051,489	\$1,050,927
Waste Management	\$19,629.99	\$24,407	\$29,187.88	\$29,188	\$29,188	\$29,188	\$29,188	\$29,188	\$29,188	\$29,188
Stormwater Drainage	\$742,926	\$742,926	\$742,926	\$742,926	\$742,926	\$742,926	\$742,926	\$742,926	\$742,926	\$742,926
Flood Mitigation	\$294,258	\$294,258	\$294,258	\$294,258	\$294,258	\$294,258	\$294,258	\$294,258	\$294,258	\$294,258
Total Depreciation costs	\$22,428,154	\$22,439,812	\$22,447,262	\$22,447,636	\$22,450,842	\$22,450,396	\$22,451,267	\$22,451,802	\$22,451,586	\$22,451,024
Year	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
LTFP inflated renewal figures	\$4,892,927	\$5,933,418	\$7,258,901	\$8,617,315	\$9,206,277	\$9,421,423	\$9,731,404	\$10,039,140	\$10,306,682	\$10,560,976
NPV factors	1.02900000	1.05884100	1.08954739	1.12114426	1.15365745	1.18711351	1.22153981	1.25696446	1.29341643	1.33092551
NPV Renewal figures (in 2013 Dollar values)	\$4,755,031	\$5,603,691	\$6,662,308	\$7,686,178	\$7,980,078	\$7,936,413	\$7,966,505	\$7,986,812	\$7,968,571	\$7,935,062
Asset Sustainability Ratio	21.20%	24.97%	29.68%	34.24%	35.54%	35.35%	35.48%	35.57%	35.49%	35.34%

Therefore the Overall Asset Sustainability Ratio for year 1 (2014) = 21.20% (\$4,755,031/\$22,428,154)

Medium Term Overall Asset Sustainability Ratio (5 year) = 29.13% (\$32,687,288/\$112,213,706)

Long Term Overall Asset Sustainability Ratio (10 years) = 32.29% (\$72,480,654/\$224,469,781)

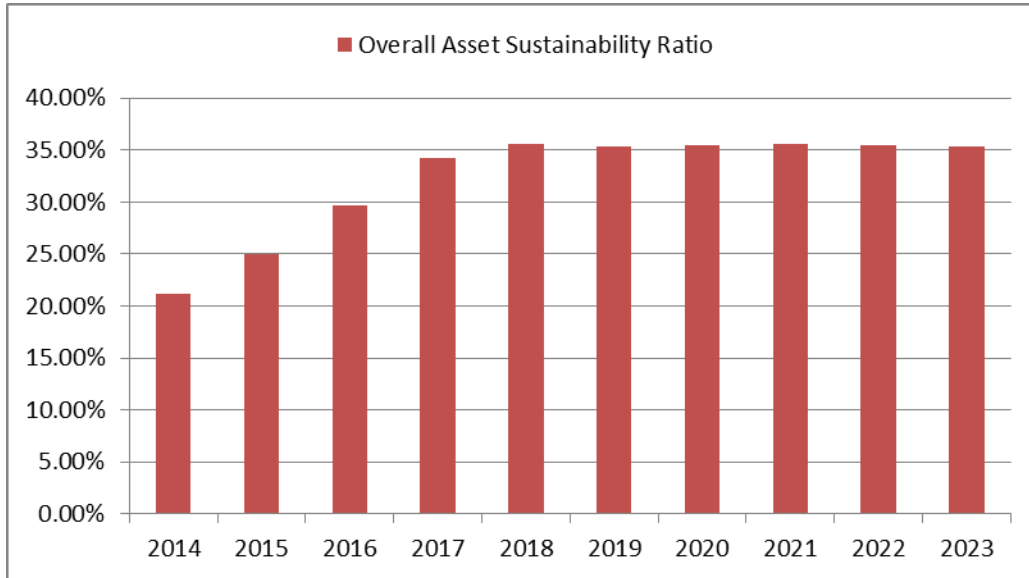
The computed ratios are low for the first year, 5 years and 10 years, which is an indication that the Council is not renewing or replacing its infrastructure assets at the same rate the overall asset stock is wearing out. This will result in long term deterioration of its asset stock unless appropriate action is taken in the future.

<sup>41</sup> AIFMG, 2009, Financial Sustainability Indicator 8, Sec 2.6, p 2.18

### Asset management financial indicators

Figure 6.1.2 shows the asset management financial indicators over the 10 year planning period and for the long term life cycle.

**Figure 6.1.2: Asset Management Financial Indicator - Overall**

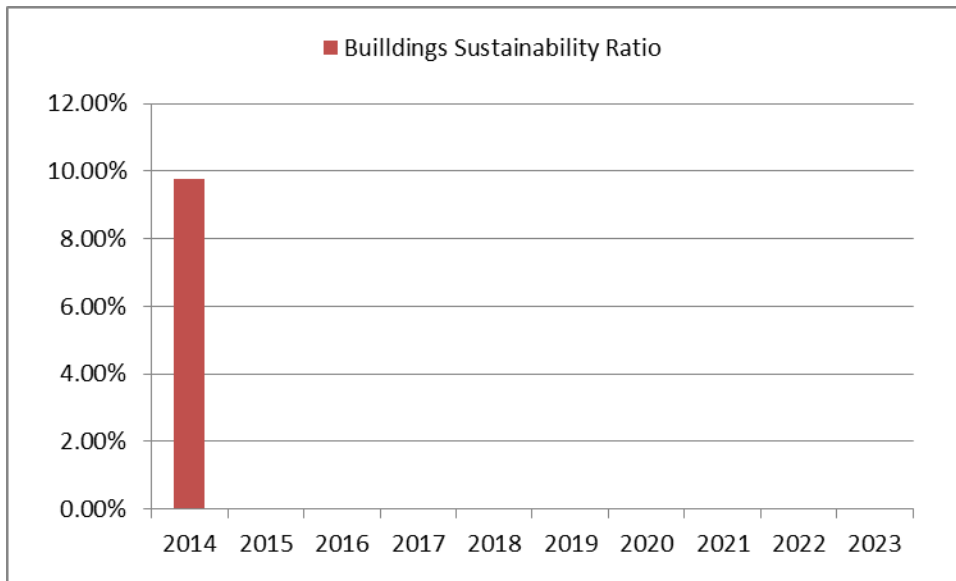


Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 (100%) for the first years of the asset management plan and ideally over the 10 year life of the Long Term Financial Plan. The above graph shows an overall improvement linked to approval of the SRV, however further condition and cost analysis will be required to move towards longer term sustainability.

The projected asset renewal and replacement expenditure over the 10 years of the AM Plan are shown in each lifecycle plan where information is available. The projected asset renewal and replacement expenditure is compared to renewal and replacement expenditure in the capital works program, which is accommodated in the long term financial plan



**Figure 6.1.3: Asset Sustainability Indicator – Buildings**



The funds are allocated for renewal of building assets in the first year of LTFP only.

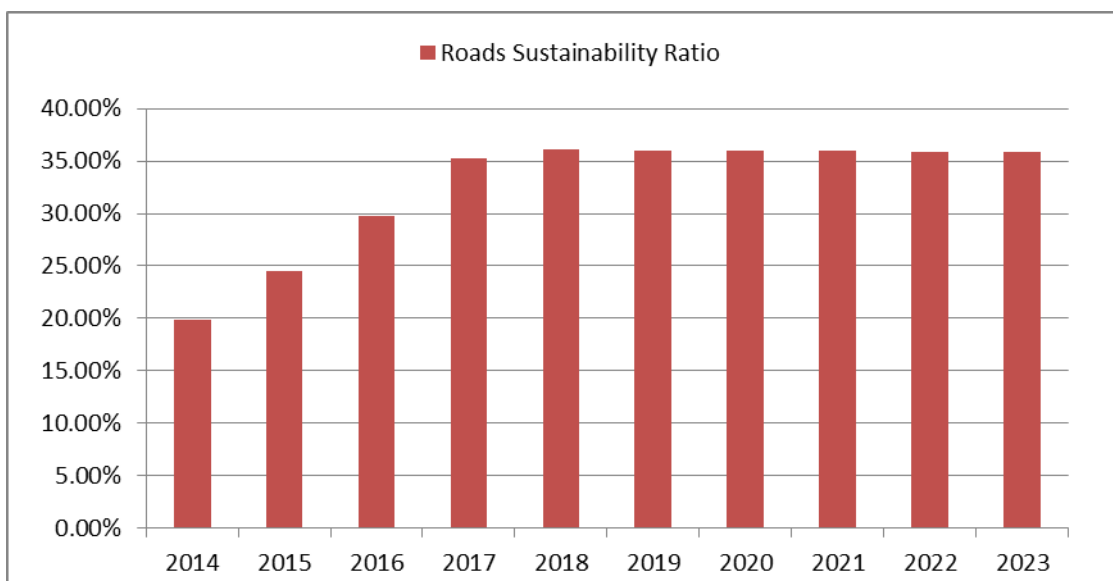
The Asset Sustainability Ratio in year 2014 = 9.77%

The 5 year Asset Sustainability Ratio = 1.95%

The 10 year Asset Sustainability Ratio = 0.98%

This is an indication that future renewal funding is required to sustain the assets. In the past significant building renewals have been sourced by grants and as a result do not show in the LTFP. Examples of this include replacing the rooves of the library, youth access centre and Kempsey pool.

**Figure 6.1.4: Asset Sustainability Indicator – Road Assets**



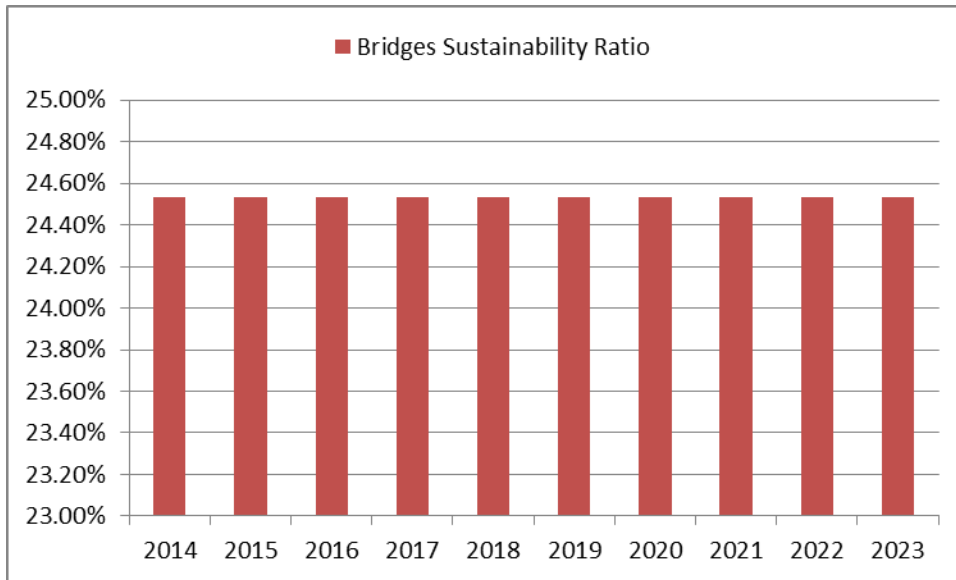
The Asset Sustainability Ratio in year 2014 = 19.80%

The 5 year Asset Sustainability Ratio =29.08%

The 10 year Asset Sustainability Ratio =32.50%

This indicates that increased funding has been allocated to road assets although being insufficient for long sustainable delivery.

**Figure 6.1.5: Asset Sustainability Indicator – Bridge Assets**

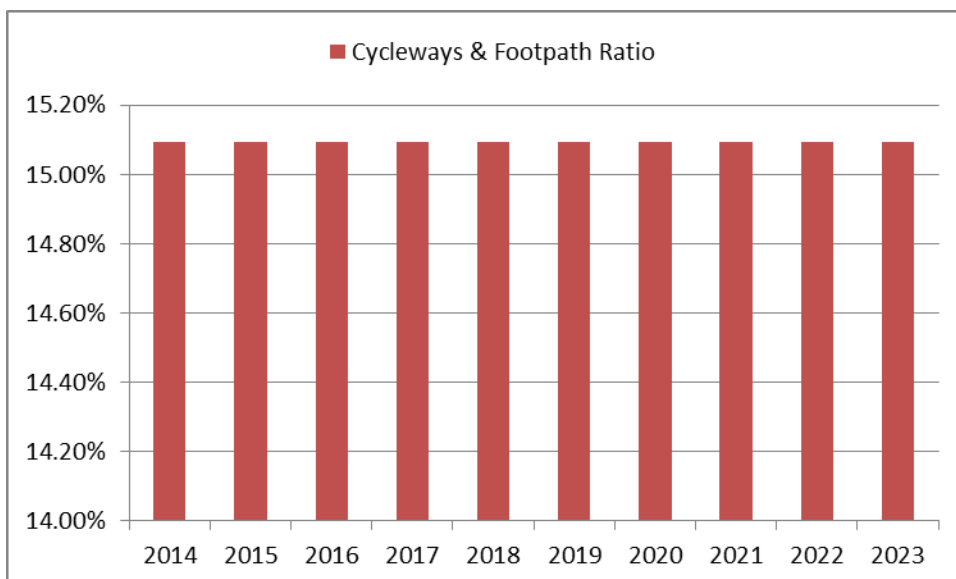


The Asset Sustainability Ratio in year 2014 = 24.53%

The 5 year Asset Sustainability Ratio = 24.53%

The 10 year Asset Sustainability Ratio = 24.53%

**Figure 6.1.6: Asset Sustainability Indicator – Footpaths and Cycleways**



The Asset Sustainability Ratio in year 2014 = 15.10%

The 5 year Asset Sustainability Ratio = 15.10%

The 10 year Asset Sustainability Ratio = 15.10%

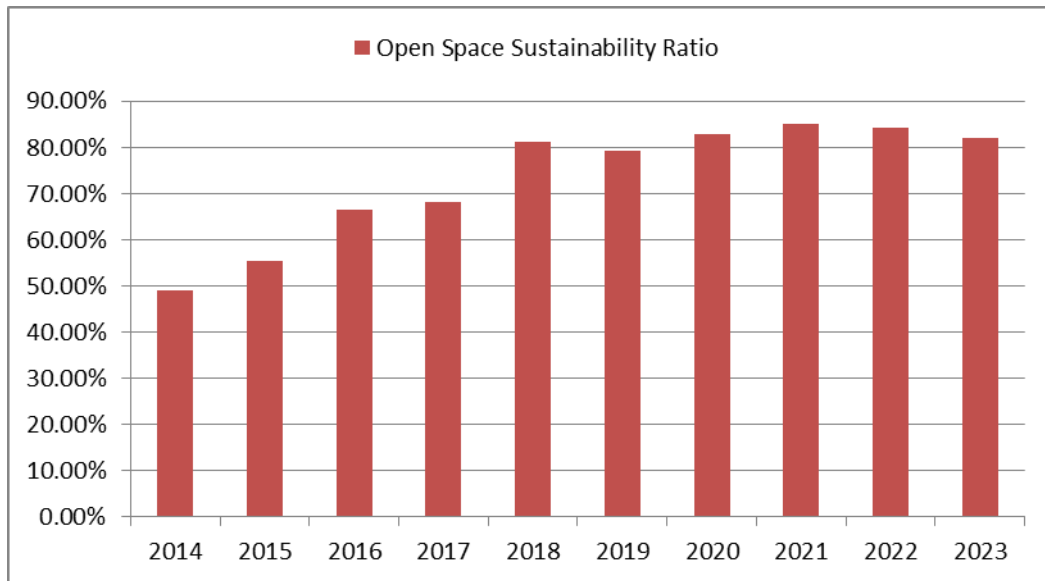
Council has been successful with a number of low cost training/employment programs that have given greater outcomes for minimal investment. These figures may be below the actual scenario depending upon Council's ability to utilise these programs for replacements in the future.

**Figure 6.1.7: Asset Sustainability Indicator – K & G, Bus Shelters, Guard Rail, Carparks, Waste Management & Stormwater Assets**



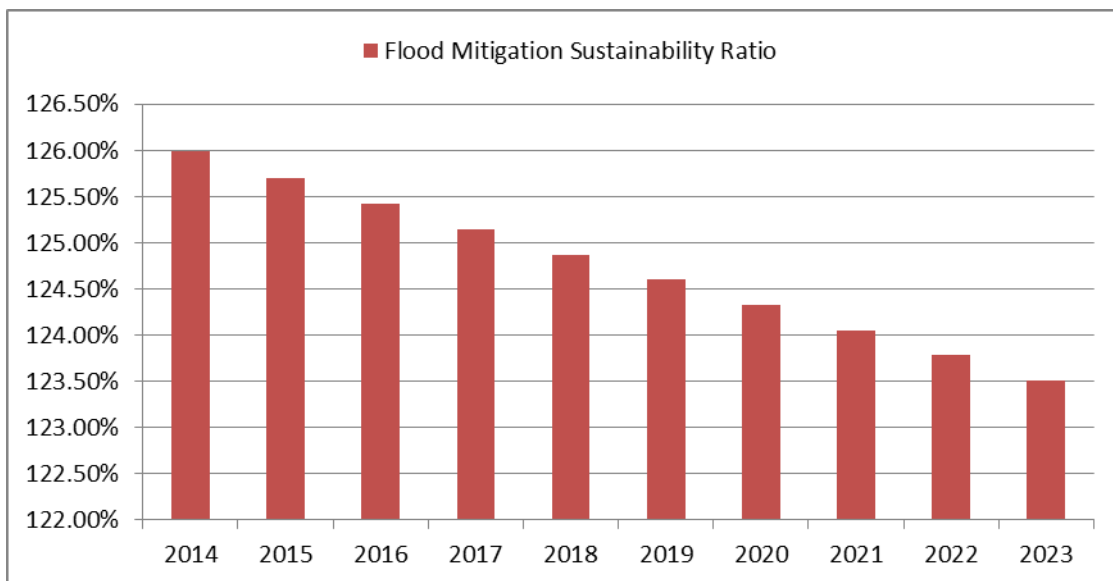
Note: The above asset classes do not have renewal funding in the LTFP due to prioritising of available renewal funding. The funds are being allocated mainly to roads and bridge assets. If these assets are within a section of road being restored then consideration would be given to bringing them to an acceptable standard as well. Waste Management has funding for years 2014 to 2016, however the funding is for improving the processing of waste via grant funding and not for renewal of existing infrastructure.

**Figure 6.1.8: Asset Sustainability Indicator – Open Space**



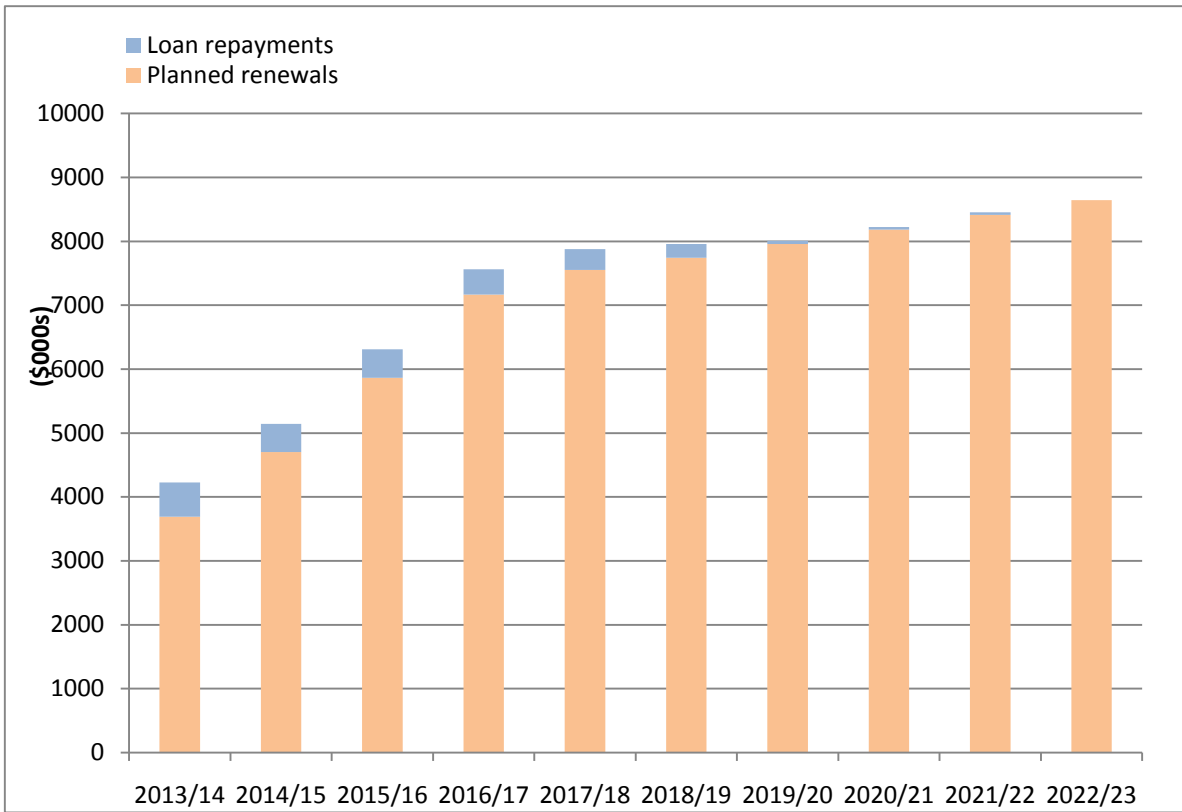
Open space assets seems to be adequately funded compared other classes of assets. Open space assets, however constitute only a small portion of the overall asset value. A further increase in sustainability is likely occur when asset rationalisation is completed. Future versions of the AMP is likely to provide a more accurate information on the open space asset sustainability.

**Figure 6.1.9: Asset Sustainability Indicator – Flood Mitigation Assets**



The above graph shows an Asset Sustainability Ratio (expressed as a percentage) of more than 100%. This is due to additional funding provided to cover a backlog of renewals required to improve the condition of flood mitigation assets as they become critical during adverse weather conditions leading to flooding. It is also noted that the future depreciation projected in the LTFP is lower than the 2013 depreciation. This is also a contributory factor for the higher sustainability ratios projected in the above graph. A substantial proportion of the budget allocated in this area is to studies and does not impact upon asset maintenance or replenishment, however as this is tied to grant funds the projected expenditure cannot be allocated until the grant approvals are known and therefore this indicator could be overstated.

**Figure 6.1.10: LTFP Budgeted Renewal Expenditure - Roads**



**Figure 6.1.11: LTFP Budgeted Renewal Expenditure - Buildings**

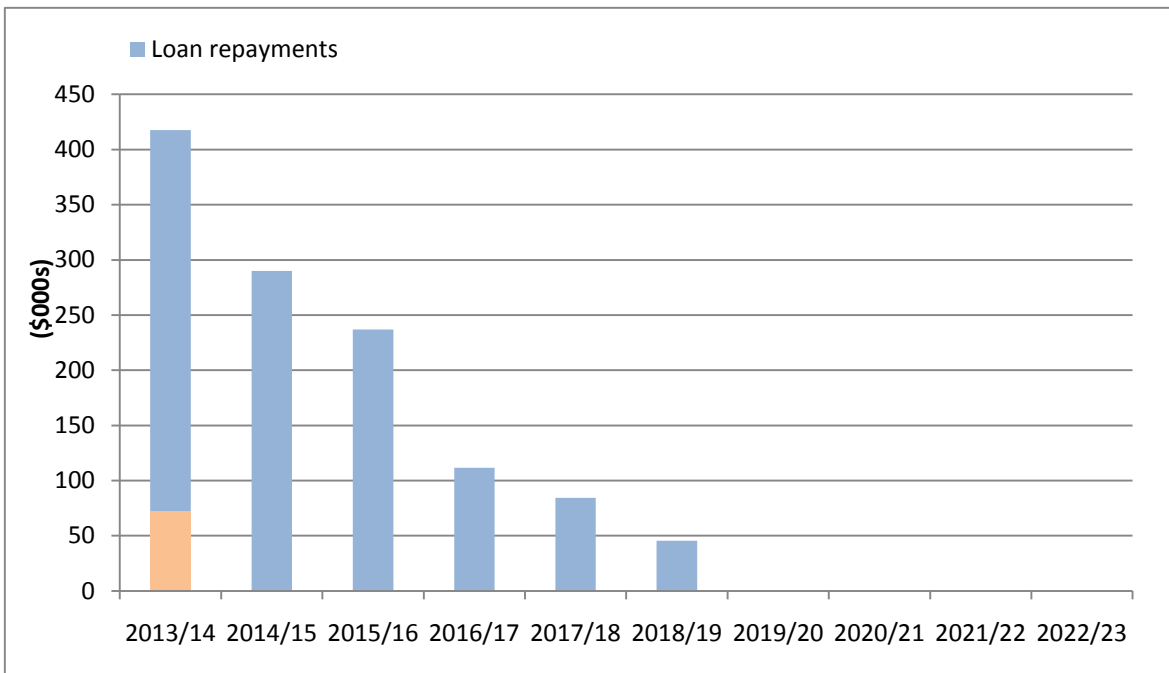


Table 6.1.2 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in long term financial plan. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets are shown in Appendix D.

**Table 6.1.2: Projected and LTFP Budgeted Renewals and Financing Shortfall- for all asset groups**

Year	Projected Renewals (\$000)	LTFP Renewal Budget (\$000)	Renewal Financing Shortfall (\$000) (-ve Gap, +ve Surplus)	Cumulative Shortfall (\$000) (-ve Gap, +ve Surplus)
2013/14	21,552.41	7,215	-14,337	-15,943
2014/15	23,755.10	7,878	-15,877	-31,820
2015/16	21,845.43	8,996	-12,849	-44,670
2016/17	22,120.18	9,925	-12,195	-56,865
2017/18	26,106.11	10,169	-15,937	-72,802
2018/19	25,295.01	10,146	-15,149	-87,951
2019/20	25,153.95	10,215	-14,939	-102,890
2020/21	29,859.19	10,094	-19,765	-122,655
2021/22	27,046.63	10,365	-16,682	-139,337
2022/23	37,999.25	10,560	-27,439	-166,776

*Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year. Expenditure projections are in inflated numbers.*

Providing services in a sustainable manner will require matching of projected asset renewal and replacement expenditure to meet agreed service levels with the corresponding capital works program accommodated in the long term financial plan.

A gap between projected asset renewal/replacement expenditure and amounts accommodated in the LTFP indicates that further work is required on reviewing service levels (including possibly revising the LTFP). Future revisions of the asset management plan will be developed to manage required service levels and funding to eliminate any funding gap.

We will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community. We will seek out opportunities to improve our efficiency and costs effectiveness in providing infrastructure and services as well as pursue opportunities to rationalise the current asset portfolio in an equitable manner.

### 6.1.2 Projected expenditures for long term financial plan

Table 6.1.3 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in inflated numbers.

**Table 6.1.3: Projected Expenditures for Long Term Financial Plan (\$000)- for all asset groups (excluding water supply and wastewater assets)**

Year	Operations and Maintenance (\$000)	Projected Capital Renewal (\$000)	Capital Upgrade/ New (\$000)	Disposals (\$000)
2013/14	39,382	7,215	0	0
2014/15	40,302	7,878	0	0
2015/16	41,333	8,996	0	0
2016/17	81,850	9,925	0	0
2017/18	83,938	10,169	0	0
2018/19	86,189	10,146	0	0
2019/20	127,908	10,215	0	0
2020/21	131,284	10,094	0	0
2021/22	134,870	10,365	0	0
2022/23	177,978	10,560	0	0

Source: Council's draft LTFP (25 October 2013)

Note that the budget figures are inflated.

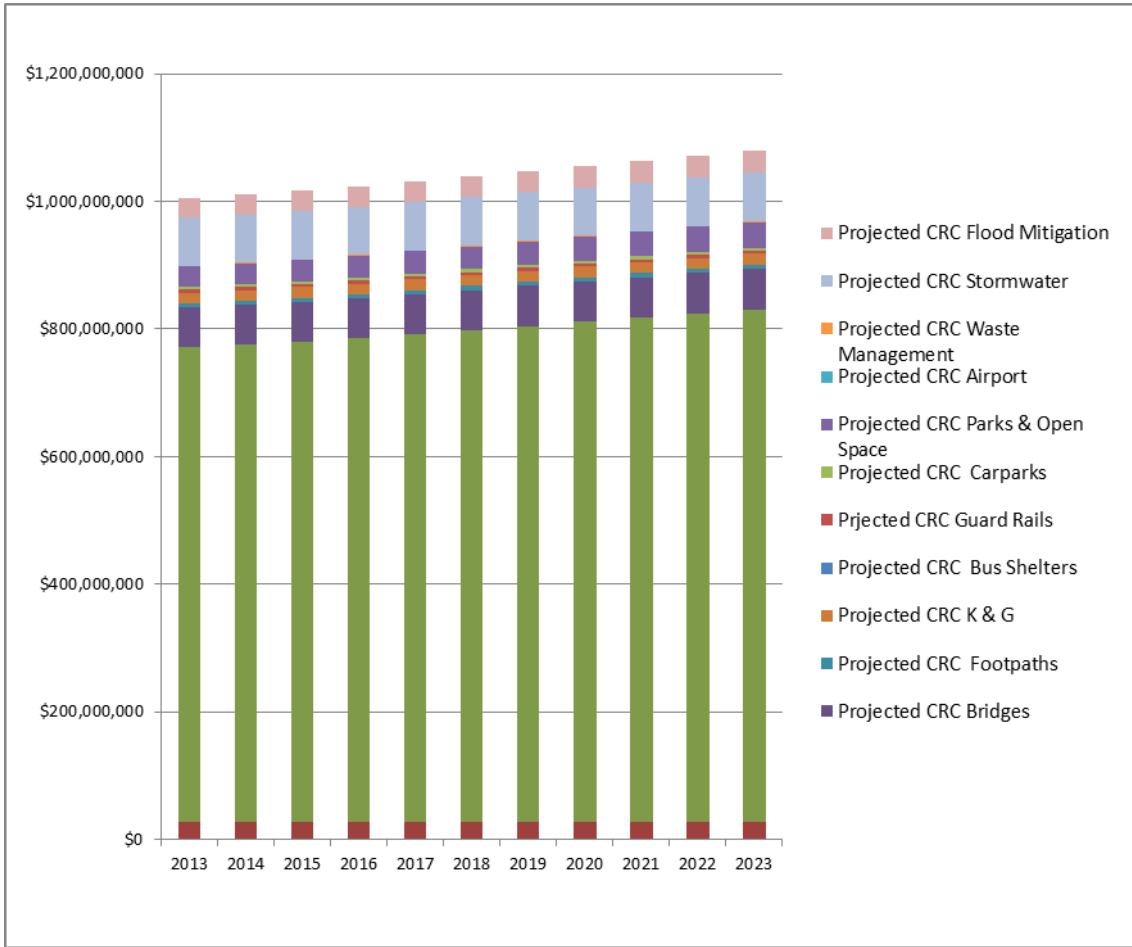
## 6.2 Funding Strategy

After reviewing service levels and proving the accuracy of the current asset valuations to ensure ongoing financial sustainability, the projected expenditures identified in Section 6.1.2 will be accommodated in the organisation's 10 year long term financial plan.

## 6.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by the organisation and from assets constructed by land developers and others and donated to the organisation. Figure 6.3.1 shows the projected replacement cost asset values over the planning period in real values.

**Figure 6.3.1: Projected Asset Values**



Note: All projections are in 2013 dollars

Depreciation expense values are forecast in line with asset values as shown in Figure 6.3.2.



**Figure 6.3.2: Projected Depreciation Expense**

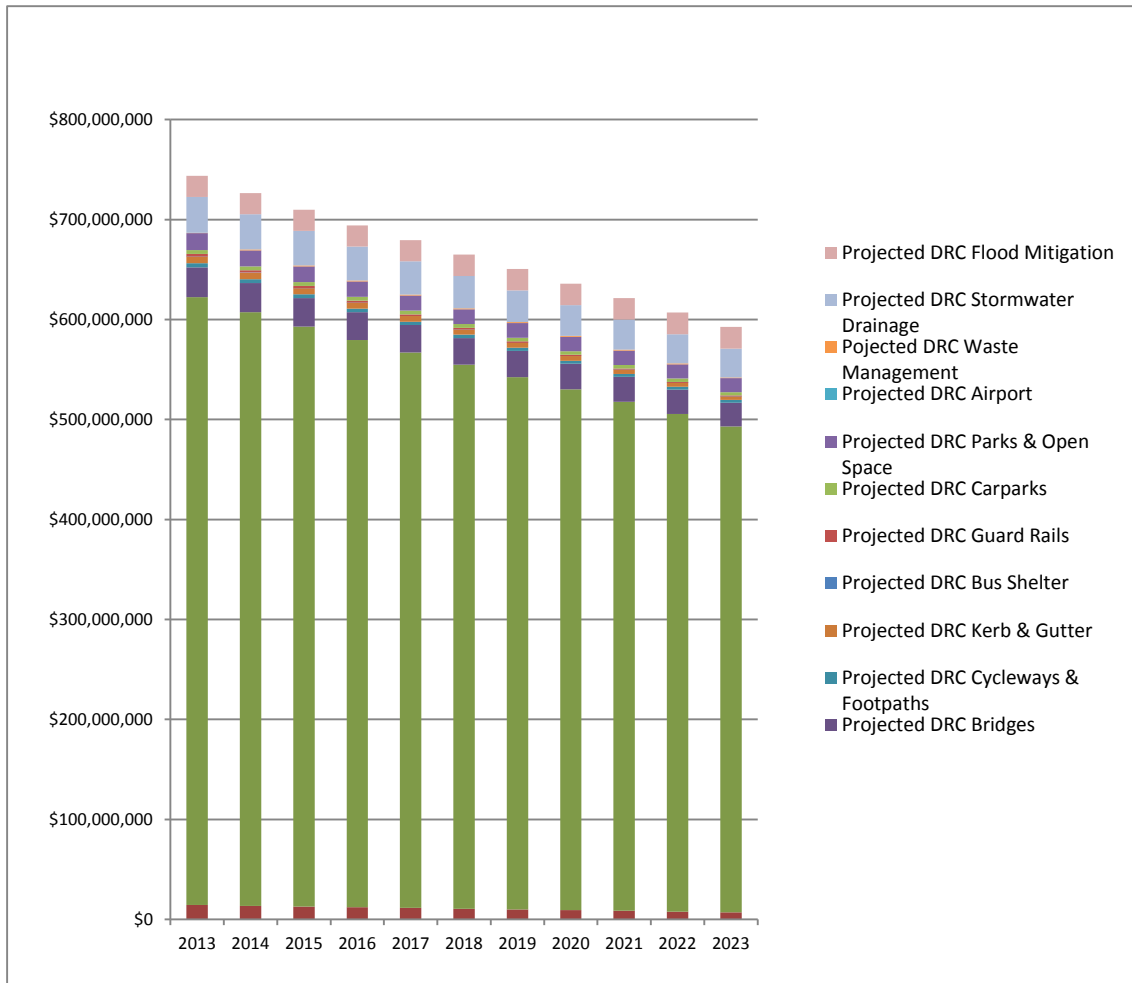


Note: All projections are in 2013 dollars

The depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 6.3.3.

Over the ten year planning horizon, all asset groups will be re-valued at least twice. Whilst Council last re-valued most assets during 2011, there is some concern that the estimated current replacement costs for the road asset components do not reflect the true costs of intervention treatments for road conditions. Further analysis/assessment of this will occur over successive revaluations and will be reflected in successive AMP's.

**Figure 6.3.3: Projected Depreciated Replacement Cost**



Note: All projections are in 2013 dollars

#### 6.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan and risks that these may change are shown in Table 6.4.1.

**Table 6.4.1: Key Assumptions made in AM Plan and Risks of Change**

Key Assumptions	Risks of Change to Assumptions
An allowance has been made for inflation	Actual inflation factors may be different than forecasted.
The average useful life and average remaining life of assets are based on current local knowledge, industry standards, historical trends and condition assessment.	Actual condition assessment indicates that the asset life is much shorter/longer than originally expected. The adopted asset lives need to be benchmarked against the actual results being observed.
Operations and maintenance forecasts have been based	Actual O & M costs are higher than in the past due to

on current expenditure levels	assets approaching the end of its life.
Depreciation and consumption figures have been based on recent revaluations	These figures may not reflect the treatment or intervention costs to bring the asset back to as new condition

## 6.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale<sup>42</sup> in accordance with Table 6.5.1.

**Table 6.5.1: Data Confidence Grading System**

Confidence Grade	Description
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$
B Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$
C Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$
D Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy $\pm 40\%$
E Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 6.5.2.

**Table 6.5.2: Data Confidence Assessment for Data used in AM Plan**

Data	Confidence Assessment	Comment
Demand drivers	B	Based on census information as it is released.
Growth projections	B	Growth is not a major driver for Kempsey. Growth planning based on Kempsey Shire Council Local Growth Management Strategy 2010. Due for review in 2014.
Operations expenditures	B	Based on draft LTFP dated 18 October 2013.
Maintenance expenditures	B	Based on draft LTFP dated 18 October 2013.
Projected Renewal exps. - Asset values	B	Last valuation was June 2011.
- Asset residual values	B	Last valuation was June 2011.
- Asset useful lives	B	Reviewed as part of last valuation in June 2011.
- Condition modelling	C	Limited or basic modelling completed in house for roads and buildings. Buildings used actual condition information. Roads was mainly aged based with condition determining the start point as part of the valuation process.
- Network renewals	C	Renewal projections are historical rather than asset needs using sound condition information. This will improve as condition surveys are completed and analysed.
- Defect repairs	C	Known operationally and not well recorded and in our

<sup>42</sup> IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

Data	Confidence Assessment	Comment
		various work sheets.
Upgrade/New expenditures	C	Based on draft LTFP dated 18 October 2013. There are no significant new works planned for Kempsey in the AMP 10 year period.
Disposal expenditures	C	Better understanding for buildings but a formal asset rationalisation plan is required.

Over all data sources, the data confidence is assessed as medium confidence level for data used in the preparation of this AM Plan.

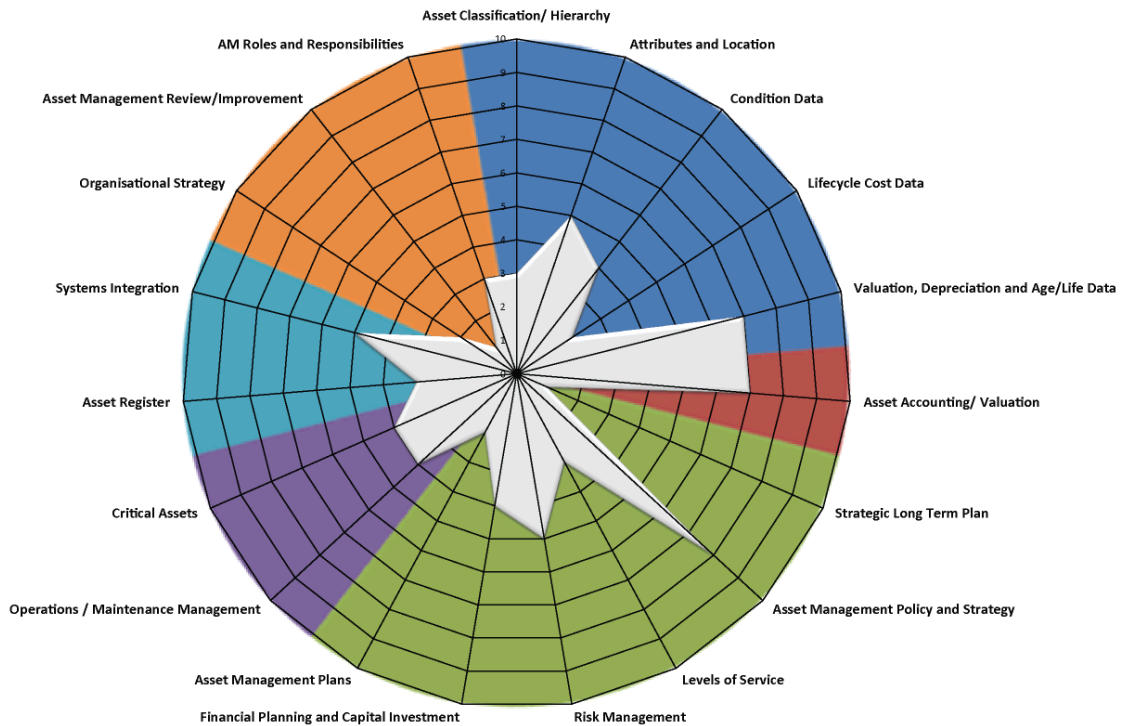
## 7. PLAN IMPROVEMENT AND MONITORING

### 7.1 Status of Asset Management Practices

Council is committed to continuous asset management improvement. Kempsey Shire Council was a participant Council in Division of Local Government (DLG) 2012 audit of asset management in New South Wales. Asset management is an area where DLG is expecting improvements in the next few years.

Kempsey Shire Council achieved an overall score of D would indicate that the Council is at a Basic level of competence in asset management. The assessment results by asset management category is summarised below by table and radar graph to show Council’s current strengths and weaknesses.

Category	Assessment
Asset Knowledge / Data	D
Asset Knowledge Processes	C
Strategic Asset Planning Processes	D
Operations and Maintenance Work Practices	D
Information Systems	D
Organisational Context	F



Kempsey wishes to make a step change in asset management practices and improve from the current basic (or D) to core (or C) level of competency in asset management. Core asset management is appropriate for Council’s size and infrastructure.

### 7.1.1 Accounting and financial systems

Council's corporate financial system is 'CivicView'. The Asset Registers are held in spreadsheets.

#### Accountabilities for financial systems

The Finance Manager is responsible for the management of the Councils finances, information system, statutory and management reporting.

#### Accounting standards and regulations

The Council's Financial statements are prepared in accordance with:

- The Local Government Act 1993 (as amended) and the regulations made there under and various other issued guidance such as 'Circulars to Councils';
- The Australian Accounting Standards and professional pronouncements, and;
- The Local Government Code of Accounting Practice and Financial Reporting.

#### Capital/maintenance threshold

Under Significant Accounting Policies in Council's Policy and Procedures, the capital threshold values are:

- \$1,000 for plant and equipment;
- \$2,000 for park furniture and equipment;
- All works capitalised for building construction and extensions, \$10,000 for building renovation works;
- \$5,000 for stormwater drains, culverts and other works;
- \$10,000 for road construction, reconstruction and repairs;
- \$10,000 for bridge construction and reconstruction.

#### Required changes to accounting financial systems arising from this AM Plan

Greater ability to allocate costs to asset components allowing for capitalisation of all new assets or those that are reconditioned.

### 7.2.1 Asset management system

Council uses Excel spreadsheets to record asset information in the Asset Registers. Relevant information is manually updated on a six monthly basis. 'MapInfo' is used as a spatial representation of assets and attributes. 'CivicView' has an AMS function but this is used for fleet management only. It is intended to move to an Asset Management System to simplify many of the tasks current undertaken manually within the spreadsheets over the short to medium term.

#### Asset registers

Detailed as above.

#### Linkage from asset management to financial system

This Asset Registers are standalone spreadsheets that are reconciled with 'CivicView' but there is no direct system linkage.

### Accountabilities for asset management system and data maintenance

The Director of Infrastructure Services is currently responsible for AM and data maintenance. It is expected that this may change as the new management structure is implemented in late 2013 and into 2014.

### Required changes to asset management system arising from this AM Plan

There are no system changes identified with this AMP development. Sound data and processes have been identified as asset management improvements.

## 7.2 Improvement Program

The asset management improvement plan generated from this asset management plan is shown in Table 7.2.

**Table 7.2: Improvement Plan**

Task No	Task	Responsibility	Resources Required	Timeline
1	Develop sound operational budgets based on first principles and asset needs for the major asset groups. This will identify the difference between current budgets and the operational funding necessary to satisfactorily operate the existing services/infrastructure	Director Infrastructure Services	Internal	February 2015
2	Analyse the preliminary roads condition survey and understand deterioration rates with 2008 results.	Manager Assets and Service Strategy	Internal	December 2014
3	Undertake a condition survey of the all asset groups excluding roads and bridges, to obtain an updated condition evaluation and provide greater input into the renewal programme and upcoming asset revaluation.	Manager Assets and Service Strategy	Internal and external for field survey	June 2015
4	Revise operating expenditure to ensure that all capital expenditure is identified and capitalised to the relative asset condition improvements.	Manager Assets and Service Strategy	Internal	December 2014
5	Refine the basic road renewal modelling developed for the 2013 AMP. Work towards condition based predictive modelling using the 2013 condition data as a key input and dynamic segmenting.	Manager Assets and Service Strategy	Internal	December 2014
6	Develop a roads age profile by centrally recording road capital works.	Director Infrastructure Services	Internal	December 2015
7	Segregate the planned and unplanned maintenance costs across all asset areas for better long term planning.	Director Corporate Management	Internal	December 2014
8	Develop a formal asset rationalisation plan for asset classes including buildings, openspaces and other areas to proactively manage the portfolio and disposal of any surplus assets.	Manager Assets and Service Strategy	Internal	December 2015
9	Compile and analyse recent bridge inspections and continue to implement a program of structural	Manager Operations	Internal	December 2014

Task No	Task	Responsibility	Resources Required	Timeline
	inspections and assessments for at risk structures			
10	Complete physical condition inspection of all stormwater assets using CCTV. Develop robust renewal projections based on condition profile. Input the resulting planned renewal requirement for this asset group.	Manager Operations	Internal	Ongoing
11	Complete building condition assessment and analyse identified defects.	Manager Technical Services	Internal	December 2014
12	Complete Life Cycle Management plan for minor asset subgroups such as guard railing, signs, line marking & street furniture etc	Manager Technical Services	Internal	December 2015
13	Review population projections to include 2011 census data and update Section 4 - Demand	Manager Assets and Service Strategy	Internal	December 2014
14	Implement an Asset Management Software Solution to simplify current annual depreciation, condition, monitoring and revaluation processes.	Manager Assets and Service Strategy	Internal	December 2016
15	Develop Maintenance Levels of Response for operational infrastructure	Manager Assets and Service Strategy	Internal	December 2014
16	Complete Life Cycle Management plan for non-public infrastructure assets such as fleet, IT etc	Manager Technical Services	Internal	December 2014
17	Update growth predictions relative to the increase in assets and add this data to the financial projections. Include revised asset acquisition figures into LCMP's for each asset class to reflect population growth predictions.	Manager Assets and Service Strategy	Internal	December 2016
18	Complete Coastal Risk/Hazard Study and relate the information to Council's infrastructure. Update risk projections and financial projections.	Coordinator Strategic Planning & Natural Resources Manager Assets and Service Strategy	Internal	December 2016

### 7.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The AM Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the Council's long term financial plan.

The AM Plan has a life of 4 years (council election cycle) and is due for complete revision and updating within 12 months of each council election.



#### **7.4 Performance Measures**

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

- The degree to which the required projected expenditures identified in this Asset Management Plan are incorporated into the organisation's Long Term Financial 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 the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the organisation's Strategic Plan and associated plans,
- Increasing the Asset Renewal Funding Ratio towards the theoretical target of 1.0. ultimately a ration of 1 should be Council's target however achieving this may be impractical as it is based upon the current understanding of costs and asset values which will always be based upon the best information available at the time.

## 8. REFERENCES

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- IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Works Engineering Australia, Sydney, [www.ipwea.org.au/AIFMG](http://www.ipwea.org.au/AIFMG).
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- NSW Statistical Local Area (SLA) Population Projections 2001-2031, TPDC, 2005 Release
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- KSC, 2013, 'Macleay Valley Community Strategic Plan 2036'
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- KSC, 2013, 'Operating Plan and Budget 2013/2014'
- KSC, 2010, 'Kempsey Shire Council Local Growth Management Strategy'

## **9. APPENDICES**

Appendix A Maintenance Response Levels of Service

Appendix B Projected 10 year Capital Renewal and Replacement Works Program

Appendix C Projected 10 year Capital Upgrade/New Works Program

Appendix D Budgeted Expenditures Accommodated in LTFP

Appendix E Abbreviations

Appendix F Glossary

Appendix G Methodology for Assessment of Asset Priorities

**Appendix A Maintenance Response Levels of Service**

To be developed In future revisions of AMP

**Appendix B Projected 10 year Capital Renewal and Replacement Works Program**

ROADS	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 4,227,593	\$ 5,143,252	\$ 6,310,705	\$ 7,561,387	\$ 7,877,834	\$ 7,957,845	\$ 8,006,962	\$ 8,223,514	\$ 8,452,784	\$ 8,644,845
Planned renewals	\$ 3,692,814	\$ 4,700,842	\$ 5,863,892	\$ 7,164,391	\$ 7,549,941	\$ 7,741,202	\$ 7,956,775	\$ 8,184,567	\$ 8,411,614	\$ 8,644,845
Loan repayments	\$ 534,779	\$ 442,410	\$ 446,813	\$ 396,996	\$ 327,893	\$ 216,643	\$ 50,187	\$ 38,947	\$ 41,170	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

BRIDGES	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 541,214	\$ 572,837	\$ 609,229	\$ 642,817	\$ 588,513	\$ 555,954	\$ 585,743	\$ 248,210	\$ 255,527	\$ 258,323
Planned renewals	\$ 199,721	\$ 205,513	\$ 211,473	\$ 217,606	\$ 223,916	\$ 230,410	\$ 237,092	\$ 243,967	\$ 251,042	\$ 258,323
Loan repayments	\$ 341,493	\$ 367,324	\$ 397,756	\$ 425,211	\$ 364,597	\$ 325,544	\$ 348,651	\$ 4,243	\$ 4,485	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CYCLEWAYS & FOOTPATHS	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 31,349	\$ 21,939	\$ 22,575	\$ 23,230	\$ 23,904	\$ 24,597	\$ 25,310	\$ 26,044	\$ 26,799	\$ 27,577
Planned renewals	\$ 21,321	\$ 21,939	\$ 22,575	\$ 23,230	\$ 23,904	\$ 24,597	\$ 25,310	\$ 26,044	\$ 26,799	\$ 27,577
Loan repayments	\$ 10,028	\$ 10,655	\$ 11,318	\$ 12,023	\$ 12,770	\$ 13,565	\$ -	\$ -	\$ -	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

KERB & GUTTER	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Planned renewals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

BUS SHELTERS	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Planned renewals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

CAR PARKING	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 3,056	\$ 3,299	\$ 3,559	\$ 3,844	\$ 4,151	\$ -	\$ -	\$ -	\$ -	\$ -
Planned renewals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ 3,056	\$ 3,299	\$ 3,559	\$ 3,844	\$ 4,151	\$ -	\$ -	\$ -	\$ -	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

STORMWATER DRAINAGE	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 84,336	\$ 74,251	\$ 31,220	\$ 33,429	\$ 35,785	\$ 23,388	\$ 24,920	\$ 11,994	\$ 12,679	\$ -
Planned renewals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ 84,336	\$ 74,251	\$ 31,220	\$ 33,429	\$ 35,785	\$ 23,388	\$ 24,920	\$ 11,994	\$ 12,679	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

FLOOD MITIGATION	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 519,658	\$ 491,523	\$ 478,158	\$ 478,930	\$ 469,478	\$ 459,088	\$ 446,884	\$ 458,835	\$ 471,107	\$ 483,709
Planned renewals	\$ 381,469	\$ 391,662	\$ 402,129	\$ 412,876	\$ 423,913	\$ 435,246	\$ 446,884	\$ 458,835	\$ 471,107	\$ 483,709
Loan repayments	\$ 138,189	\$ 99,861	\$ 76,029	\$ 66,054	\$ 45,565	\$ 23,842	\$ -	\$ -	\$ -	\$ -
New works	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

BUILDINGS	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Renewal	\$ 417,611	\$ 290,014	\$ 236,980	\$ 111,764	\$ 84,284	\$ 45,593	\$ -	\$ -	\$ -	\$ -



**Appendix C Projected Upgrade/Exp/New 10 year Capital Works Program**

Council is not proposing to undertake any capital upgrade or expansion. Increases in new assets will result through developer provided assets or those secured through grant funding opportunities as they arise.





Loan repayments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>New works</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Disposal</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

<b>CAR PARKING</b>	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Operation &amp; Maintenance</b>	\$ 178,365	\$ 187,389	\$ 196,864	\$ 207,034	\$ 213,460	\$ 219,362	\$ 225,570	\$ 231,955	\$ 238,520	\$ 245,273
Maintenance & Repair	\$ 118,734	\$ 126,312	\$ 134,309	\$ 142,976	\$ 147,867	\$ 152,004	\$ 156,260	\$ 160,634	\$ 165,131	\$ 169,756
Depreciation	\$ 58,386	\$ 60,079	\$ 61,821	\$ 63,614	\$ 65,459	\$ 67,357	\$ 69,311	\$ 71,321	\$ 73,389	\$ 75,517
Interest repayments	\$ 1,245	\$ 998	\$ 734	\$ 444	\$ 134	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Renewal</b>	\$ 3,056	\$ 3,299	\$ 3,559	\$ 3,844	\$ 4,151	\$ -	\$ -	\$ -	\$ -	\$ -
Planned renewals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ 3,056	\$ 3,299	\$ 3,559	\$ 3,844	\$ 4,151	\$ -	\$ -	\$ -	\$ -	\$ -
<b>New works</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Disposal</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

<b>STORMWATER DRAINAGE</b>	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Operation &amp; Maintenance</b>	\$ 763,372	\$ 781,232	\$ 799,655	\$ 820,159	\$ 841,175	\$ 863,090	\$ 886,006	\$ 909,951	\$ 935,131	\$ 961,303
Maintenance & Repair	\$ 141,293	\$ 145,237	\$ 149,290	\$ 153,459	\$ 157,743	\$ 161,861	\$ 166,087	\$ 170,426	\$ 174,877	\$ 179,445
Depreciation	\$ 604,491	\$ 622,021	\$ 640,060	\$ 658,621	\$ 677,721	\$ 697,375	\$ 717,599	\$ 738,410	\$ 759,823	\$ 781,858
Interest repayments	\$ 17,588	\$ 13,974	\$ 10,305	\$ 8,078	\$ 5,710	\$ 3,854	\$ 2,319	\$ 1,116	\$ 431	\$ -
<b>Renewal</b>	\$ 84,336	\$ 74,251	\$ 31,220	\$ 33,429	\$ 35,785	\$ 23,388	\$ 24,920	\$ 11,994	\$ 12,679	\$ -
Planned renewals	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ 84,336	\$ 74,251	\$ 31,220	\$ 33,429	\$ 35,785	\$ 23,388	\$ 24,920	\$ 11,994	\$ 12,679	\$ -
<b>New works</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Disposal</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

<b>FLOOD MITIGATION</b>	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Operation &amp; Maintenance</b>	\$ 398,119	\$ 400,115	\$ 403,878	\$ 409,258	\$ 415,883	\$ 424,406	\$ 434,524	\$ 445,911	\$ 457,626	\$ 469,680
Maintenance & Repair	\$ 69,706	\$ 70,550	\$ 71,418	\$ 72,311	\$ 73,229	\$ 74,140	\$ 75,077	\$ 76,040	\$ 77,029	\$ 78,045
Depreciation	\$ 302,791	\$ 311,572	\$ 320,608	\$ 329,905	\$ 339,472	\$ 349,317	\$ 359,447	\$ 369,871	\$ 380,598	\$ 391,635
Interest repayments	\$ 25,622	\$ 17,993	\$ 11,852	\$ 7,042	\$ 3,182	\$ 949	\$ -	\$ -	\$ -	\$ -
<b>Renewal</b>	\$ 519,658	\$ 491,523	\$ 478,158	\$ 478,930	\$ 469,478	\$ 459,088	\$ 446,884	\$ 458,835	\$ 471,107	\$ 483,709
Planned renewals	\$ 381,469	\$ 391,662	\$ 402,129	\$ 412,876	\$ 423,913	\$ 435,246	\$ 446,884	\$ 458,835	\$ 471,107	\$ 483,709
Loan repayments	\$ 138,189	\$ 99,861	\$ 76,029	\$ 66,054	\$ 45,565	\$ 23,842	\$ -	\$ -	\$ -	\$ -
<b>New works</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Disposal</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

<b>BUILDINGS</b>	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Operation &amp; Maintenance</b>	\$ 1,484,046	\$ 1,407,241	\$ 1,398,866	\$ 1,488,461	\$ 1,575,574	\$ 1,652,030	\$ 1,730,910	\$ 1,778,064	\$ 1,826,508	\$ 1,876,277
Maintenance & Repair	\$ 888,644	\$ 875,479	\$ 891,027	\$ 977,330	\$ 1,056,621	\$ 1,122,210	\$ 1,187,263	\$ 1,218,651	\$ 1,250,872	\$ 1,283,948
Depreciation	\$ 532,188	\$ 491,057	\$ 484,904	\$ 498,966	\$ 513,436	\$ 528,326	\$ 543,647	\$ 559,413	\$ 575,636	\$ 592,329
Interest repayments	\$ 63,214	\$ 40,705	\$ 22,935	\$ 12,165	\$ 5,517	\$ 1,495	\$ -	\$ -	\$ -	\$ -
<b>Renewal</b>	\$ 417,611	\$ 290,014	\$ 236,980	\$ 111,764	\$ 84,284	\$ 45,593	\$ -	\$ -	\$ -	\$ -
Planned renewals	\$ 72,500	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Loan repayments	\$ 345,111	\$ 290,014	\$ 236,980	\$ 111,764	\$ 84,284	\$ 45,593	\$ -	\$ -	\$ -	\$ -
<b>New works</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Disposal</b>	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

<b>PARKS</b>	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
<b>Operation &amp; Maintenance</b>	\$ 5,364,412	\$ 5,469,091	\$ 5,634,276	\$ 5,779,318	\$ 5,926,698	\$ 6,103,024	\$ 6,214,570	\$ 6,401,670	\$ 6,582,423	\$ 6,787,665
Maintenance & Repair	\$ 4,302,472	\$ 4,414,885	\$ 4,563,246	\$ 4,690,547	\$ 4,816,321	\$ 4,965,227	\$ 5,047,252	\$ 5,201,669	\$ 5,347,622	\$ 5,517,055
Depreciation	\$ 982,367	\$ 1,010,856	\$ 1,040,171	\$ 1,070,336	\$ 1,101,376	\$ 1,133,315	\$ 1,166,182	\$ 1,200,001	\$ 1,234,801	\$ 1,270,610



## Appendix E Abbreviations

<b>AAAC</b>	Average annual asset consumption
<b>AM</b>	Asset management
<b>AM Plan</b>	Asset management plan
<b>ARI</b>	Average recurrence interval
<b>ASC</b>	Annual service cost
<b>BOD</b>	Biochemical (biological) oxygen demand
<b>CRC</b>	Current replacement cost
<b>CWMS</b>	Community wastewater management systems
<b>DA</b>	Depreciable amount
<b>DRC</b>	Depreciated replacement cost
<b>EF</b>	Earthworks/formation
<b>IRMP</b>	Infrastructure risk management plan
<b>LCC</b>	Life Cycle cost
<b>LCE</b>	Life cycle expenditure
<b>LTFP</b>	Long term financial plan
<b>MMS</b>	Maintenance management system
<b>PCI</b>	Pavement condition index
<b>RV</b>	Residual value
<b>SoA</b>	State of the Assets
<b>SS</b>	Suspended solids
<b>vph</b>	Vehicles per hour
<b>WDCRD</b>	Written down current replacement cost

## Appendix F Glossary

### Annual service cost (ASC)

- 1) Reporting actual cost  
The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
- 2) For investment analysis and budgeting  
An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/opportunity and disposal costs, less revenue.

### Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

### Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

### Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

### Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

### Asset hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

### Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of

providing the required level of service in the most cost effective manner.

### Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

### Average annual asset consumption (AAAC)\*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

### Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

### Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

### **Capital expenditure - expansion**

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

### **Capital expenditure - new**

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

### **Capital expenditure - renewal**

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

### **Capital expenditure - upgrade**

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

### **Capital funding**

Funding to pay for capital expenditure.

### **Capital grants**

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

### **Capital investment expenditure**

See capital expenditure definition.

### **Capitalisation threshold**

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

### **Carrying amount**

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

### **Class of assets**

See asset class definition

### **Component**

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

### **Core asset management**

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

### **Cost of an asset**

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

**Critical assets**

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than noncritical assets.

**Current replacement cost (CRC)**

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

**Deferred maintenance**

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

**Depreciable amount**

The cost of an asset, or other amount substituted for its cost, less its residual value.

**Depreciated replacement cost (DRC)**

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

**Depreciation / amortisation**

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

**Economic life**

See useful life definition.

**Expenditure**

The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

**Fair value**

The amount for which an asset could be exchanged, or a liability settled, between

knowledgeable, willing parties, in an arm's length transaction.

**Financing gap**

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

**Heritage asset**

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

**Impairment Loss**

The amount by which the carrying amount of an asset exceeds its recoverable amount.

**Infrastructure assets**

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

**Investment property**

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business.

### **Key performance indicator**

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

### **Level of service**

The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

### **Life Cycle Cost \***

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

### **Life Cycle Expenditure**

The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

### **Loans / borrowings**

See borrowings.

### **Maintenance**

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal.

It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**  
Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.
- **Reactive maintenance**  
Unplanned repair work that is carried out in response to service requests and management/ supervisory directions.
- **Specific maintenance**  
Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.
- **Unplanned maintenance**  
Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

### **Maintenance expenditure \***

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

### **Materiality**

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

### **Modern equivalent asset**

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

### **Net present value (NPV)**

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

### **Non-revenue generating investments**

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

### **Operations**

Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

### **Operating expenditure**

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

### **Operating expense**

The gross outflow of economic benefits, being cash and non-cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

### **Operating expenses**

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

### **Operations, maintenance and renewal financing ratio**

Ratio of estimated budget to projected expenditure for operations, maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

### **Operations, maintenance and renewal gap**

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

### **Pavement management system (PMS)**

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

### **PMS Score**

A measure of condition of a road segment determined from a Pavement Management System.

### **Rate of annual asset consumption \***

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

### **Rate of annual asset renewal \***

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).



**Rate of annual asset upgrade/new \***

A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

**Recoverable amount**

The higher of an asset's fair value, less costs to sell and its value in use.

**Recurrent expenditure**

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

**Recurrent funding**

Funding to pay for recurrent expenditure.

**Rehabilitation**

See capital renewal expenditure definition above.

**Remaining useful life**

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

**Renewal**

See capital renewal expenditure definition above.

**Residual value**

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

**Revenue generating investments**

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

**Risk management**

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

**Section or segment**

A self-contained part or piece of an infrastructure asset.

**Service potential**

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

**Service potential remaining**

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

**Specific Maintenance**

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

**Strategic Longer-Term Plan**

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

**Sub-component**

Smaller individual parts that make up a component part.

**Useful life**

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or

(b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the Council.

**Value in Use**

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, AIFMG Glossary

Additional and modified glossary items shown \*

**Appendix G - Methodology for Assessment of Asset Priorities**

Under any management system there is a need for determination of what works are to be undertaken in which priority. This system needs to be transparent and clear to the community and consistently applied. This does not mean that the system should be followed in all instances. There will always be factors specific to particular situations that are not covered in a generalised system, but any variations from the accepted methodologies should be able to be justified on clear grounds, showing the factors that are not covered in the prioritisation methodology. Council will use the same system of assessing its asset management priorities as it will use to assess its service provision. This will ensure that the decisions of where resources are allocated are done in an equitable and efficient way.

Within the asset classes there will be a number of factors that need to be taken into account in relation to the assessment protocols. These will vary for asset classes and within each asset class there will be a discussion of how the various aspects of the asset will relate to the overall methodology.

The system is based on assessment of the following factors:

- **Risk** – The level of change in Council’s risk profile generated by the action
- **Nuisance** – The level of change in the nuisance impact to the community of using the asset/service
- **Serviceability** – The change in the level of service provided to the community by the asset/service
- **Level Of Benefit** – The frequency with which the asset or service is used and the level of use overall

The factors and their individual weightings are detailed below.

**Risk:**

Risk assesses the danger to the public that exists for the current condition or state of the asset in question. It is an indicator or the potential negative impacts on the users of assets should the Council fail to make a change to the existing situation. Risk can relate to social, economic or environmental factors and as such all of these types of risk need to be assessed. In determining risk the factors that need to be considered are the level of risk and the likelihood of the occurrence. These are assessed on a scale of 1 to 5, using the methodology in the Australian Standard AS4360:2004. This creates a matrix that shows the resulting level of risk, as follows:

**Table Risk Assessment Component Matrix**

Likelihood	Consequences				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
Almost Certain A	Moderate	High	High	Extreme	Extreme
Likely B	Moderate	Moderate	High	High	Extreme
Possible C	Low	Moderate	High	High	High

Unlikely D	Low	Low	Moderate	Moderate	High
Rare E	Low	Low	Moderate	Moderate	High

**KEY:**

**Extreme** An extreme risk requires immediate action as the potential could be devastating to the local government area.

**High** A high level of risk requires action, as it has the potential to be damaging to the local government area.

**Moderate** Allocate specific responsibility to a moderate risk and implement monitoring or response procedures.

**Low** Treat a low level of risk with routine procedures.

To provide an indication of level of consequences that would trigger an assessment under the various columns above, the following information is provided for each of the triple bottom line classifications.

**Table - Risk Assessment Descriptors**

Level	Environment	Social	Economic
<b>5 – Catastrophic</b>	Death of animals in large numbers, destruction of flora species, air quality requires evacuation, permanent and wide spread land/water contamination.	Fatality	Business failure resulting in six months loss of earnings or costs.  OR  Cost impact of over \$100,000
<b>4 – Major</b>	Death or injury of individual animals, large scale injury, loss of keystone species and widespread habitat destruction, air quality requires "safe Haven"/evacuation decision, remediation of land contamination only possible by long term program.	Permanent disability	Business failure resulting in 3-6 months delay and costs.  OR  Cost impact of 50,000 to \$100,000

Level	Environment	Social	Economic
<b>3 – Moderate</b>	Temporary reversible damage, loss of habitat and migration of animal population. Plants unable to survive, air quality constitutes potential long term health hazard, potential for damage to aquatic life, pollution requires physical removal, land contamination localised and can be quickly remediated.	Medical treatment required	Business failure resulting in 1-3 months delay and costs.  OR  Cost impacts of \$10,000 to \$50,000
<b>2 – Minor</b>	Slight, quickly reversible damage to few species/ecosystem parts, animals forced to change living patterns, full natural range of plants unable to grow, air quality creates local nuisance, water pollution exceeds background levels for short period.	First Aid assistance required.	Business failure resulting in less than 1 months delay and costs.  OR  Cost impacts of \$1,000 to \$10,000
<b>1 – Insignificant</b>	Some minor adverse effects to few species /ecosystem parts that are short term and immediately reversible.	No significant injury.	Business failure resulting in less than 1 weeks delay and costs.  OR  Cost impacts of less than \$1,000

Once the required work on an asset has been assessed, including the impact of the proposed works on the risk, Council will then provide a weighting against the risk component of the project. The following table shows the weighing that applies to each change in the level of risk.

**Table Risk Assessment Factor**

Future Current\ Current	Low	Moderate	High	Extreme
<b>Low</b>	0	0	0	0
<b>Moderate</b>	25	0	0	0
<b>High</b>	60	40	0	0
<b>Extreme</b>	100	80	60	0

**Nuisance:**

The area of nuisance targets the impact a failure to undertake work on the council’s assets on the quality of life of the people using the asset. While risk focuses on the potential damage, nuisance focuses on the way a person’s quality of life is impacted by the failure to undertake works. There are no standard that can be applied in assessing the level of nuisance, so the following is provided to give an indication of the way in which the community can expect the Council to assess the level of nuisance in any instance.

**Table Nuisance Component Descriptors**

Level	Description
<b>Extreme</b>	Prevents people from being able to live life without significant detrimental damage to their health and wellbeing over a medium to longer term period.
<b>High</b>	Has significant impact on the quality of life of people in a way that will have a negative impact over a medium period of time.
<b>Moderate</b>	Temporary reversible impact on quality of life, localised and can be quickly remediated.
<b>Low</b>	Some minor adverse effects that are short term and do not create a lasting impact.

The weightings of the changes to the level of nuisance are the same as those used for the risk factor.

**Serviceability:**

This factor is looking at how well an asset meets the service that the community needs from it. It considers whether the work on the asset will provide any improvement to the level of service it can provide to the users of that asset.

**Table 5 Serviceability Descriptors**

Impact	Description
<b>Very High</b>	Facility meets all reasonable needs for a range of uses including the designed function.
<b>High</b>	Meets all deigned needs and uses without any reasonable constraints.
<b>Moderate</b>	Able to achieve designed function, but cannot fully be utilised, such as minor functional loss or aesthetic issues existing.
<b>Low</b>	Provides no or very low ability to meet the need the asset was developed to cover.

The following table records the weightings that will be applied to any change in the serviceability that is provide to the community as a result of the works undertaken.

**Table Serviceability Factors**

Future Current\	Low	Moderate	High	Very High
Low	0	25	80	100
Moderate	0	0	40	60
High	0	0	0	25
Very High	0	0	0	0

**Level of Benefit:**

The final factor assessed is the number of user benefits that will be provided through the works on the asset. Council needs to consider the relative valued that the overall community will receive in assessing projects to ensure that where two projects would provide the same level of advantage, the one that provides that benefit to the largest part of the community should be prioritised first. The Council’s system captures the number of uses and the frequency of the uses to determine the annualised usage rate of the asset.

Usage is weighed in a directionally proportional system, where one point accrues for each one thousand users. To allow for increased simplicity the levels of usage have been split within 10 bands. This is to reflect that in most cases the true usage is not known accurately and as such there will be some degree of uncertainty. Based on this, use of exact usage is not likely to give a more accurate response, but would significantly increase the cost of seeking to verify that usage. The weighting of each band is based on the midpoint of that band. The bands used are:

**Table Level of Utilisation Factors**

Priority Class	Level of Usage	Factor
P01	<10	0.01
P02	11 – 50	0.03
P03	51 -200	0.1
P04	201 – 500	0.3
P05	501 – 1,000	0.7
P06	1,001 – 5,000	3
P07	5,001 – 10,000	7
P08	10,001 – 15,000	12

Priority Class	Level of Usage	Factor
P09	15,001 – 20,000	17
P10	> 20,000	25

To ensure equity the council’s level of usage is based on annualised usage. Factors allow conversion of usage on other frequencies into an annualised figure. These conversions are provided to assist people in determining the annualised usage.

**Table Frequency of Use Factors**

Period of Usage	Factor
Daily	365
Weekly	52
Fortnightly	26
Monthly	12
Quarterly	4
Semi-Annual	2
Annual	1
1 – 5 Years	0.4
6 – 10 Years	0.1333
11 – 20 Years	0.06667
21 – 50 Years	0.03333
Greater than 50 Years	0.01428

**Calculation of nominal benefit**

The calculation of the level of benefit of the works to the community is calculated as follows:

- Multiply the annual recurrent cost/savings (a) from the project by the number of years that the works will provide the benefit over (b).
  - Add : The initial capital costs of the project (c).
- This gives the total lifecycle cost of the project.
- Add: The weighted risk (d), nuisance (e) and serviceability (f) scores to get the weighted benefit.



- Multiply the weighted benefit by the number of times the benefit will be gained by the community (g) on an annualised basis (h) to get the annualised benefit.
- Divide the total project cost by the annualised benefit to get the cost benefit figure, which is used to compare the projects.

$$\text{Cost Benefit} = \frac{(a \times b) + c}{(d + e + f) \times g \times h}$$

### **Financial Assessment:**

The above benefits are assessed against the estimated costs of the works to determine a cost benefit result. In determining the financial cost of the project both the initial costs and any ongoing costs or savings that result from the change need to be taken into account. By doing so the real long term cost of the asset management task is taken into account, adjusting for the increased impact of maintenance costs if preventative programs are not carried out.

### **New or Additional Assets**

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes.

Where council plans to implement new assets, an assessment of the asset will be undertaken within the same framework to determine whether the allocation of funds to that project are likely to provide a greater benefit to the community than the ongoing maintenance and retention of other assets.

### **Additional Criteria Specific to Particular Asset Classes**

Assessing the priority for action will also include criteria which are specific to particular asset types and also for their location. These are being developed through revision of the AMP.

A current example of this would be the bridges included in school bus routes. This is considered a higher priority as any failure or limit on the bridge would result in disruption to the school bus route. Unlike residents the alternate route may introduce significant additional time and backtracking.