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Appendix A Regional and Local Road Network NAMS Analysis
1.0 Executive Summary

Bellingen Shire Council is a small rural council of approximately 1,600 square kilometres on the mid north coast of New South Wales. The council has a small population of approximately 12,000 people and a relatively low rate base due to large areas of State Forest and National Parks.

The local road network is the main system which links the community by providing access between properties and main road systems. This network includes extensive lengths of rural roads extending as the only access route up narrow valleys. That is, there are many roads which don’t provide a through traffic route to link with other roads and consequently access is vulnerable as large numbers of people can be isolated if the road is cut for any reason such as a damaged bridge or a landslip.

Other challenges associated with managing the road network include high rainfall, steep landforms and fast vegetation growth.

The aim of the provision of transport infrastructure is to provide safe, serviceable and convenient access throughout the Shire.

The transport network that Council is responsible for includes:

- Regional Roads (34km)
- Local Roads (531km)
- Bridges and large culverts (137)
- Footpaths (22km)
- Off street car parks (5)
- Roadside furniture
- Drainage systems (38km)

These infrastructure assets have a replacement value in the order of $455 million. A broad based assessment of Council’s finances indicates that present funding levels are likely to be insufficient to continue to provide existing services at current levels in the medium term. A more detailed analysis has been undertaken of the Regional and Local Road Network pavements and wearing surfaces using the NAMS analysis. This analysis is presented as a sub-plan in Appendix A

This raises the issue of how Council manages the potentially higher risks that may result from the provision of lower levels of service.

In this regard Council has defined intervention levels in a policy document, the BSC Road Inspection System. The level of compliance of Council’s operations and maintenance to the intervention levels specified in the policy is monitored. In the short term, budget variations may be required to meet these standards. However, if funding cannot be maintained at the required level over the medium term, then it will be necessary for Council to revise the intervention levels to a level commensurate with the funds that can be allocated. That is, if funding levels are insufficient to meet the currently specified intervention levels, then a lower level of service will be provided.

The risks associated with this lower level of service can then be assessed and decisions made with regard to Council’s overall financial management framework.

Funding for renewals, upgrades and capital expansion are managed using Council’s project priority assessment system. It is anticipated that to achieve good asset management practices, asset renewals will require a greater emphasis in preference to upgrades and capital expansion as a result of this asset management plan. One obvious and immediate concern that needs to be addressed is the need to allocate increased funding for renewal of bitumen sealed surfaces on existing roads.
2.0 Introduction

This Road Asset Management Plan (RAMP) has been prepared to formalise the process of providing the framework to guide the financial and physical requirements for the long term operational performance of Council's transport infrastructure assets.

The RAMP encompasses previous plans and strategies developed by Council. This version of the RAMP will deal with the following elements of the transport infrastructure network in detail:

- public road network: road formation, road pavement, road wearing surface
- bridges and large culverts
- footpaths and cycleways
- car parks (off street)
- ancillary road facilities: roadside furniture (signage, linemarking, safety fencing) traffic facilities (round-a-bouts, medians, thresholds), retaining walls, bicycle racks, bus shelters, seats.
- road drainage systems: table drains, small culverts, kerb and gutter, subsoil drainage, relief drainage pits pipes and headwalls and trunk drainage systems including pipes and formed open channels providing drainage from the road network to the receiving waters.

The most significant asset components are the Regional and Local Road pavements and wearing surfaces. A more detailed analysis of these components using the National Asset Management System (NAMS) methodology is provided in Appendix A.

The RAMP aims to provide succinct information for the general community to understand Council’s objectives for the provision of a network of appropriate and sustainable transport infrastructure throughout the Shire.

The plan is referred to as the RAMP because Council's primary involvement with the management of transport in Bellingen Shire is related to the public road network. However it is important to appreciate the connection this system has with the wider transport infrastructure.

The RAMP will be regularly reviewed and updated to improve the quality and accuracy of the information as it relates to Council's transport infrastructure.

3.0 Strategic and Corporate Planning

Bellingen Shire Council’s Mission Statement is:

“to enhance our community’s lifestyle and protect our unique environment through effective leadership, community involvement and commitment to service”.

Council has developed a Management Plan for a five year horizon and aims to achieve this Mission through the following objectives:

- Protect, preserve and enhance the unique environment of Bellingen Shire,
- Promote environmentally sensitive economic and industrial development,
- Develop, improve and maintain a safe and efficient transportation network throughout the Shire,
- Promote the development of tourism and tourist facilities without degrading the natural environment,
- Enhance the quality of life through the provision of a safe and healthy living, working and recreational environment.
Council has adopted an Asset Management Policy which recognises the responsibility for an extensive range of community infrastructure assets. The task of allocating Council's available resources, to ensure that these assets provide the required service for the community, is ongoing and is subject to regular review. There is a constant need to balance the available resources to optimise the outcomes and use of these assets. An Asset Management Strategy has been developed to guide this process.

Council is responsible for the public roads within the Shire of Bellingen. These roads provide the basic transportation link between properties, businesses, community facilities and other transport infrastructure particularly highways and railways and ultimately airports and seaports. This RAMP has been developed to meet the principles and requirements defined in the Asset Management Policy and Strategy.

3.1 Operational Framework

There are a number of operational strategies, committees, policies and plans which form a part of the overall asset management framework for public transport infrastructure assets as briefly outlined below:

- Council has a Local Traffic Committee which is involved with the regulatory framework for road transport assets.
- Council has a number of policies which influence road asset management. The main policies are the BSC Road Inspection Policy, the Footpath Inspection Policy and the Policy for the Erection of Fingerboard Directional Signage for Tourist Oriented Businesses within Bellingen Shire.
- Council is a member of the Mid North Weight of Loads Group. The aim of this group is to educate the trucking industry on the appropriate use of the road network for transporting freight. The group also has a regulatory role to enforce legal loading of vehicles. This is an important component of Council's road management system and is essential to ensure the road pavements are being used appropriately to enable the road to perform its proposed function and meet the expected design life.
- Council adopted a Roadside Management Plan in 1998 which provides a long term plan of management for activities impacting on the roadside environment.
- Council adopted a Bicycle Plan and Pedestrian Accessibility and Mobility Plan (PAMP) in October 2006. This PAMP aims to rationalise and provide a strategic program for the improvement of the footpath and cycleway network within the three urban centers of the Shire.
- The Northern Rivers Catchment Management Authority (NRMCA) has also developed a draft LGA Rural Roads and Roadsides Land Management Strategic Plan to facilitate a standard and consistent approach to rural road and roadside management in order to achieve environmental, social and economic outcomes.
- Forests NSW and Council have developed a haulage strategy aimed at minimising the use of public roads for logging transportation. This is achieved by rationalisation of internal forest roads within plantation areas and development of minimum length of public roads gazetted for B Double use.
3.2 Funding Sources

Council primarily funds its activities from property rates and federal and state government grants. Details are provided in the annual management plan and budget. Road maintenance and improvements are currently funded from general rates, federal financial assistance grant, various grants from Roads and Maritime Services (RMS) (including the Regional Road Block Grant, the Regional Road Supplementary Grant, the Traffic Facilities Grant, the Repair Program Grant), the Special Rate Levy, developer contributions and other grants such as the Roads To Recovery Program.

Some funding is available under the Section 94 Road Contribution Plan for developer contributions associated with new developments. This plan needs periodic revision to cater for changes in the rate of development and was last reviewed on 1 July 2009. The Section 94 Road Contribution Plan is referred to in relation to increased demand for transport assets and can be used in a limited way to supplement infrastructure improvements as required.

Some funds are available under Rural Fire Service fire mitigation grants for fire trails on public road reserves which are not provided for private property access, although some properties do gain access via these trails. Grants are made available from time to time for maintenance and repairs to these fire trails through the Fire Mitigation Fund.

4.0 Asset Management Systems

Council's assets have been managed using a number of separate systems in each division and section. One future objective of Council will be to integrate these separate systems into an overall corporate system. This RAMP provides details of the various systems used for transportation assets.

4.1 Asset Records

Council has maintained a number of Asset Registers for various assets.

Roads were originally recorded in loose leaf paper form based on information collected in the field. The information recorded included a road name and number, status, length, description of the starting point and finishing point of the road, sealed and unsealed lengths and the chainage and size of culverts.

Council then recorded the road assets on the SMEC pavement management system in the mid 1990s. The field information was collected by a casual employee (Greg Nelson) and input into the SMEC pavement management system with the original field sheets maintained in a folder. The SMEC pavement management system needed a major upgrade before the year 2000 as problems with the compliance of the system with “Y2K” changes were expected. The road asset system was then transferred to an Excel spreadsheet which has subsequently been converted into an MS Access Database system and this system is still currently in use.

Bridge assets were originally recorded on a spreadsheet. This information has been transferred into an Access Database to enable bridge information to be managed in a more effective manner. The basic information records the bridge name, number, road, location, and details of the bridge structure such as materials, spans, lengths and widths.

Council has an Access database which records the footpath and cycleway network in the Shire. This database records the footpath location, length, width and materials.
Car park assets are recorded in an Excel spreadsheet. The basic information records the car park location, the pavement area, the length of kerb and gutter and basic details of ancillary facilities such as signage and linemarking.

Drainage system assets are recorded in an Access Database. This database records the details of drainage structures such as location, pit type, size, conduit inlet or outlet depths and details of drainage conduits, such as size, materials and length.

4.2 Valuation of Assets

Road infrastructure assets have been valued utilising the methodology and approach of Australian Accounting Standards for Financial Reporting purposes. This approach includes:

- Valuations are based on data quantified in Council’s most up to date Asset Registers.
- Current replacement values have been determined based on sound engineering estimates using current market rates for labour, plant hire, materials and contract services. Where an asset is constructed of materials which are currently not in common usage, the estimates are based on construction with current material technology which will provide an equivalent service in terms of capacity to the user.
- Asset life is determined based on the characteristics of the asset and particularly the type of construction materials used.
- Written Down Cost is determined based on the difference between the economic life of the type of asset class and the actual age of the asset when this is accurately known. If the age of the asset is not known with any degree of reliability the Written Down Cost is based on the current condition assessment of the asset and a corresponding estimated percentage of remaining useful life.
- Where the useful life of the asset is extended or reduced, the resultant impact will be on future depreciation rates and charges and will not be retrospective in accordance with appropriate accounting standards.

4.3 Asset Values

The adopted economic life of transport infrastructure asset components is summarized as follows:

**Regional Roads:**

- Road formation: geological time (no depreciation)
- Road pavement (sealed): 60 years
- Road wearing surface (sealed)
  - Bitumen seal: 15 years
  - Asphalt surface: 15 years

**Local Roads (low traffic volume):**

- Road formation: geological time (no depreciation)
- Road pavement (sealed): 75 years
- Road pavement (unsealed): 25 years
- Road wearing surface (sealed)
  - Bitumen seal: 20 years
  - Asphalt surface: 15 years
Bridges and large culverts:
- Concrete: 75 years
- Steel: 60 years
- Timber piles: 75 years
- Timber Girders: 40 years
- Timber deck: 20 years

Footpaths:
- Concrete: 100 years
- Pavers: 50 years
- Asphalt: 30 years

Drainage Systems:
- Concrete: 100 years

Roadside Furniture:
- Signs: 15 years
- Safety fencing: 20 years
- Concrete medians: 100 years

Car Parks:
- Formation: geological time (no depreciation)
- Pavement: 75 years
- Wearing surface:
  - Bitumen seal: 20 years
  - Asphalt surface: 15 years

As an interim measure for use in determining an annual depreciation amount in the financial statements an average life has been adopted for bridges of 60 years, car parks 60 years and kerb and gutter 100 years.

When the date of provision of an asset is not known the remaining life will be calculated based on the assessed condition rating of the asset component. The following remaining asset life shall be adopted:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rating</th>
<th>Remaining Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Good</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Good</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>Fair</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Poor</td>
<td>25%</td>
<td></td>
</tr>
<tr>
<td>Very Poor</td>
<td>1 year</td>
<td></td>
</tr>
</tbody>
</table>

It should be noted that the life of road pavements is subject to a large degree of uncertainty. There is current research being undertaken to improve the knowledge and understanding of the deterioration of road pavements which will in turn lead to improvements in the management of these assets.

Similarly the life of bitumen seals is not easily determined although they have a much shorter life than road pavements. Current research is aimed at determining the degree of oxidation of the bitumen matrix.
5.0 **Levels of Service**

The transport infrastructure assets can provide varying levels of service. This section describes the functions of each asset class and the factors influencing the level of service that can be provided and forms the basis for determining an appropriate level of service having regard to financial constraints.

A number of management systems for various components of the transport infrastructure network have been developed by Council over time. These systems as well as forming the basic asset register for different classes of assets are also used as operational management tools.

5.1 **Public Road Network**

The performance of the road network is mainly dependent on the physical use of the system and environmental effects. The main factors relating the physical use of the network include traffic volumes, number and type of heavy vehicles, overloaded vehicles, public transport (buses), speed of traffic and property access.

Environmental effects include wet weather (rainfall frequency, intensity and duration, including flooding), sunlight radiation, hot and cold temperatures, growth of vegetation, river erosion, slope stability and potentially sea level changes.

There are three basic asset components of the road network, as follows:

1. Road formation: The road formation includes the formation for the road carriageway up to the sub-grade level. It includes cut and fill battens and private property access formations within the road reserve but excludes retaining wall structures.
2. Road pavement: Road pavements include the structural component of the road which supports the traffic loading and transfers the vehicular load to the subgrade.
3. Road wearing surface: Road wearing surfaces provide the running surface for traffic. For the purpose of asset management some road types do not have a wearing surface such as unsealed gravel roads and concrete roads.

Council's road network has been classified into a hierarchy based on function and, at a basic level, are classified as State Roads, Regional Roads or Local Roads. Although Bellingen Shire Council is the Roads Authority under the Roads Act 1993 for all public roads within the Shire, it is a requirement under the Roads Act that any work on a classified road needs the concurrence of the NSW Roads and Traffic Authority.

The following roads are classified roads within Bellingen Shire:

- Pacific Highway (State Highway 10, SH10)
- Waterfall Way (Main Road 76, MR76)
- Tyringham Road (Main Road 119, MR119)
- Coramba Road (Main Road 469, MR469)

Of these classified roads the Pacific Highway and Waterfall Way are State Roads and Tyringham Road and Coramba Road are Regional Roads.

State Road assets are considered to be the responsibility of the Roads and Traffic Authority (RTA). The RTA maintains the road carriageway and directly related traffic facilities on State Roads. Council is the Roads Authority for these roads and generally has maintenance responsibility for other features in the road reserve, such as the road verge and footways.
Council undertakes work on Waterfall Way under a Road Maintenance Council Contract (RMCC) under which Council has an active role in assessing requirements for upgrades and improvement works. Regional Road and Local Road assets are considered to be the full responsibility of Council. Council has determined a defined road network for which routine maintenance is budgeted for and undertaken. However, there are other roads on public road reserves usually either used by 1 or 2 properties or used as fire trails for which Council does not carry out routine maintenance. If a request for maintenance is received for these roads the request is considered on its merits and any work requires a specific allocation of funds by Council. These roads are not currently included on the road asset register. It is intended that these assets will be recorded in the asset register as resources permit however this is currently a low priority and has low relevance with regard to financial asset management but more relevance with regard to risk management.

There are also other roads which are not included in the asset management plan including Crown Roads, Forestry Roads, roads through national parks and private roads. Some of these roads are available for access by the community but any Council involvement in the management of these facilities is considered on an individual merit basis.

The road network within the Shire is made up of:

<table>
<thead>
<tr>
<th>Asset Type</th>
<th>Asset Manager</th>
<th>Length (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways</td>
<td>RTA</td>
<td>13</td>
</tr>
<tr>
<td>State Roads</td>
<td>RTA</td>
<td>70</td>
</tr>
<tr>
<td>Regional Roads</td>
<td>Bellingen Shire Council</td>
<td>34</td>
</tr>
<tr>
<td>Local Roads</td>
<td>Bellingen Shire Council</td>
<td>531</td>
</tr>
</tbody>
</table>

The roads for which Council has responsibility are divided by function based on rural or non rural roads and traffic volumes as follows:

**Category 1**  
Rural Roads with ADT of 0 to 100 vehicles per day  
Non Rural Roads with ADT of 0 to 500 vehicles per day

**Category 2**  
Rural Roads with ADT between 100 and 250 vehicles per day  
Non Rural Roads with ADT between 500 and 1,000 vehicles per day

**Category 3**  
Rural Roads with ADT greater than 250 vehicles per day  
Non Rural Roads with ADT greater than 1,000 vehicles per day

The road network has developed over many decades and consequently the standard of roads varies enormously with the topography having had a large impact on the standard of road provided. Most of the terrain within the Shire area is very hilly and consequently many roads have been constructed with steep vertical grades, tight horizontal curves and narrow formation widths, although Council does aim to achieve the road standards set out in Aus-Spec No 1 Design Specifications, specifically Tables D1-5 for residential areas and Table D1-8 for rural residential and rural areas.
5.2 Bridges and Large Culverts

Bridges and large culverts are relatively large structures which carry the road over physical features such as watercourses, roads and railway lines.

The majority of bridges on Local Roads cross watercourses. A large number of bridges were constructed many decades ago using locally available timber. Typically the structures only provide for a single lane of traffic and often have poor alignments on the road approaches. Many bridges are also constructed at low levels in flood prone areas and are regularly cut during flood events.

As bridges deteriorate they are repaired under a bridge maintenance program. Some bridges deteriorate to such an extent that replacement is required. Council aims to replace deteriorated bridges with structures that are durable and have a long life cycle. The replacement structures are assessed with the aim of providing a higher level of service. In particular it is considered desirable to provide a replacement structure with two lanes of traffic with improved approach alignments and to provide the structure at a level which improves access during flood events where feasible.

5.3 Footpaths

It is desirable to have a footpath network which provides safe and serviceable pedestrian access to community and commercial facilities. Generally, factors which influence levels of service are width, crossfall, longitudinal grade, type of surface, evenness of surface, drainage and provision of accessible ramps. Currently the limited available funds are utilised to remove or repair localized defects. Resources will need to be dedicated to developing a program to reconstruct substandard footpath facilities to bring them up to current standards.

5.4 Car Parks

Car park assets include off street public car parks but excludes on street parking facilities which are treated as part of the road network.

Car park assets are divided into the same basic components as roads for valuation purposes (ie: formation, pavement and wearing surface. In addition there are other components including kerb and gutter, linemarking, signage and other traffic facilities).

Generally, car parks are expected to provide convenient and safe parking for vehicles but also need to enable the regulation of fair and equitable parking for the public. The issues that influence the level of service for car parks include the provision of a sound, well drained pavement with clear linemarking and signage.

5.5 Roadside Furniture and Traffic Facilities

This class of asset includes regulatory signs, warning signs, guidance signs, linemarking, safety fencing, retaining walls, traffic medians and traffic devices such as round-a-bouts, thresholds, speed humps, traffic mirrors, bus shelters, street lights and bike racks.

More work needs to be done in the future to comprehensively record these assets. From an accounting point of view the value of roadside furniture and traffic facility assets is relatively low and is not considered to be material with regard to the financial statements.

However, these assets are important for the level of service provided for the transport network. Appropriately provided and maintained traffic facilities, regulatory signs and warning signs assist in the provision of a safe, serviceable and equitable traffic environment.
In addition, guidance signs assist the public in finding desired locations and facilities. Council receives many requests for additional signs. However a proliferation of signs can be confusing for motorists and the focus is on providing a well maintained system of street name and geographical location signs. Requests for additional signs are considered in accordance with the “Policy for the Erection of Fingerboard Directional Signage for Tourist Oriented Businesses within Bellingen Shire”.

5.6 Drainage Systems

Drainage systems as they relate to transport infrastructure include table drains, small culverts, kerb and gutter and relief drainage systems.

The primary function of drainage systems relating to transport infrastructure is to protect the asset from damage which can result when stormwater flow is uncontrolled. In performing this function the drainage system also needs to protect adjacent private property and provide a reasonable level of service to road users.

Drainage systems need to deal with rainfall which has varying frequencies of intensity and duration. The level of service of the drainage system involves the extent of protection provided to the infrastructure for these varying events and is reliant on the frequency of maintenance.

In performing this role the drainage system needs to be able to control drainage in a manner which does not jeopardise adjacent property and which provides an appropriate level of service for users. The aim is to provide a level of protection as defined by the standards contained in Australian Rainfall and Runoff (AR&R). In particular it is considered appropriate to adopt the principles of minor flow paths and major flow paths as follows:

- Minor flows to cater for 20% Annual Exceedance Probability (AEP)
- Major flows to cater for 1% Annual Exceedance Probability (AEP)

6.0 Future Demand

Population growth in Bellingen is generally low and does not have a significant impact on the management of transport assets. Council developed a Growth Management Strategy which was endorsed by the Department of Planning on 21 April 2007. Based on this strategy the rate of growth is not expected to change substantially over the next 20 years.

Consequently the growth in subdivisonal and residential development is not expected to greatly increase the need for transport infrastructure. Development will either be limited by the available capacity within existing infrastructure or additional capacity will need to be provided to enable such development to proceed.

The Section 94 Road Contribution Plan is periodically reviewed and this document is referred to when considering transport infrastructure requirements in relation to new development.

7.0 Risk Management

In accordance with Council's risk management systems, risks associated with Council's road network have been identified and strategies proposed to mitigate these identified risks as provided in Table 1.
<table>
<thead>
<tr>
<th>Risk Details</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Risk Rating</th>
<th>Treatment Strategy</th>
<th>Risk Assessment after treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate funding for renewal and maintenance resulting in deterioration of asset and decrease in levels of service</td>
<td>Likely</td>
<td>High</td>
<td>High</td>
<td>Ensure priority to asset maintenance and renewal is given through the budget process. Regularly revise four year rolling program of road improvements.</td>
<td>Unlikely</td>
</tr>
<tr>
<td>Inadequate funding for maintenance resulting in exposure to public liability</td>
<td>Likely</td>
<td>High</td>
<td>High</td>
<td>Regularly revise use and appropriateness of BSC Road Inspection Policy</td>
<td>Possible</td>
</tr>
<tr>
<td>Inadequate identification and/or incomplete asset registers</td>
<td>Possible</td>
<td>High</td>
<td>High</td>
<td>Progressively reassess and update asset registers.</td>
<td>Unlikely</td>
</tr>
</tbody>
</table>
8.0 Life Cycle Management

Local Government has a responsibility to ensure that assets under its management will function and meet the community needs and expectations on a long term basis, for both present and future generations. The management role includes the need to maintain the assets in a safe and serviceable condition and exercising a reasonable duty of care.

There is a general expectation within the community for ongoing improvements to the existing transport infrastructure. This is evidenced by requests received for upgrades and improvements particularly for roads, footpaths and cycleways. However, there is a significant gap between this desired standard and the existing standard because of the way the road network has developed over time. The resources required to upgrade the existing network to meet the current standards are not available so, consequently a program to carry out improvements based on merit has been developed.

There is a trade off between undertaking improvement projects to address identified safety needs or to achieve a desired level of service and undertaking rehabilitation and renewal of existing infrastructure. Consequently the improvement program includes rehabilitation projects as well as improvement projects and the asset management aspect of rehabilitation or renewal of existing assets is a significant criterion in the priority assessment of these projects. The tradeoff between asset renewal and safety or serviceability improvements is addressed by the assessment process for the road improvement list of works. Factors are weighted in an attempt to produce a balanced rolling program which is responsive to the community's needs.

As life cycle management is further developed it is anticipated that there will be a greater emphasis on asset renewal at the expense of asset improvement. This RAMP aims to assist with this assessment process by including life cycle asset management principles to forecast funding requirements and it is proposed to develop this funding profile over 10 year period.

There are two fundamental criteria, which are taken into account when determining the levels of service for asset replacement cycles and asset management. In an economic context an asset should be replaced when the annualised cost of its replacement exceeds it's written down cost. This needs to be balanced by the second criteria, which relates to the level of service provided by the asset against the level of service expected by users of the asset. This will in turn enable the relationship between level of service of asset functionality with asset maintenance and the cost of the level of service (price/quality) to be determined and then evaluated in consultation with the community to determine the optimum level of service that the community is prepared to pay for.

8.1 Performance Monitoring of Assets

One of Council's objectives is to develop, improve and maintain a safe and efficient transportation network throughout the Shire. This RAMP is aimed at achieving this objective by managing transport assets appropriate to determined service levels. The consequences of asset failure will impact on this objective.

A number of inspection systems have been developed to monitor the service levels provided for various components of the transportation network. A brief outline of these inspection systems is outlined in this section.

Council has developed the BSC Road Inspection System which details the inspection regime to be carried out of the road network and specifies the intervention level for the repair of identified defects. Bridges and large culverts are inspected under the bridge maintenance program. Maintenance repairs,
replacement of bridge components and bridge restoration or replacements are determined from this inspection regime. Council has adopted a Footpath Inspection Policy. All constructed footpaths are inspected under this policy and defect repairs scheduled accordingly. No formal detailed inspection system has yet been developed for car parks, traffic facilities or drainage systems. Detailed inspections are carried out as problems are identified during the normal road inspections, as problems are identified during large storm events or as reported by the general public and maintenance or repairs carried out under the road maintenance program.

One significant aspect to the level of service that can be provided is the amount of funding allocated to maintenance. Council allocates funds for maintenance based on an historical budget which has a standard percentage variation each year. It is evident based on community requests that this budget is inadequate for the desired level of service and further work needs to be undertaken in this area to enable consultation with the community on the level of service that can be provided within financial constraints.

In the meantime risks will be managed by use of the Bellingen Shire Council Road Inspection System. It should be noted that some short term budget variations may be required to meet the intervention standards determined for this system. If, in the longer term, financial constraints are such that the current intervention standards cannot be achieved then this system will need to be revised with the aim of utilising the available funds to optimise the minimisation of risks to the public.

### 8.2 Financial Management

The Current Replacement Value and Written Down Cost of the transport infrastructure assets will be calculated every third year. The Finance Section will track maintenance expenditure, capital renewal and capital expansion costs for each component of the asset as described in this plan on an annual basis based on actual expenditure. These costs will then be reconciled with the Current Replacement Value and Written Down Costs calculated for the assets overall on a three yearly cycle.

The annual depreciation expense calculated for each asset component gives a broad prediction of future funding requirements. The annual depreciation based on the 2010 Current Replacement Cost for various asset components is given in Table 2.

When the annual depreciation amounts are compared to recent capital budgets for road infrastructure assets it is apparent that current funding is below what would be required for the long term rehabilitation or renewal of road infrastructure. Consequently it is perceived that there is funding gap which will impact on the level of service which can be provided for these assets in the future.

This funding gap needs further analysis in the light of the comments provided in this RAMP relating to the uncertainty of economic life predictions of assets. In the meantime, overall road infrastructure asset renewal and improvement selection is managed by the use of Council's List of Shire Road Improvement Projects and the associated method of prioritising projects utilising the available funds.
Table 2: Asset Values

<table>
<thead>
<tr>
<th>Asset Values (2010)</th>
<th>Economic life</th>
<th>Current Replacement Value (s) x 1,000</th>
<th>Written Down Cost (s) x 1,000</th>
<th>Annual Depreciation (s) x 1,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regional Roads</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>formation</td>
<td>N/A</td>
<td>11,330</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>pavement</td>
<td>60</td>
<td>23,035</td>
<td>14,481</td>
<td>384</td>
</tr>
<tr>
<td>wearing surface</td>
<td>15</td>
<td>1,028</td>
<td>68</td>
<td>69</td>
</tr>
<tr>
<td><strong>Local Roads</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>formation</td>
<td>N/A</td>
<td>199,461</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>pavement (sealed)</td>
<td>75</td>
<td>120,954</td>
<td>92,722</td>
<td>1,764</td>
</tr>
<tr>
<td>pavement (unsealed)</td>
<td>25</td>
<td>25,784</td>
<td>12,892</td>
<td>2,687</td>
</tr>
<tr>
<td>wearing surface</td>
<td>20</td>
<td>7,144</td>
<td>2,181</td>
<td>357</td>
</tr>
<tr>
<td><strong>Bridges and Culverts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>timber</td>
<td>40</td>
<td>14,460</td>
<td>8,904</td>
<td>362</td>
</tr>
<tr>
<td>other than timber</td>
<td>60</td>
<td>13,696</td>
<td>9,765</td>
<td>228</td>
</tr>
<tr>
<td><strong>Footpaths</strong></td>
<td>100</td>
<td>3,450</td>
<td>2,588</td>
<td>35</td>
</tr>
<tr>
<td><strong>Carparks</strong></td>
<td>60</td>
<td>539</td>
<td>290</td>
<td>9</td>
</tr>
<tr>
<td><strong>Drainage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kerb and gutter</td>
<td>100</td>
<td>10,386</td>
<td>7,686</td>
<td>104</td>
</tr>
<tr>
<td>stormwater drainage</td>
<td>100</td>
<td>24,535</td>
<td>14,846</td>
<td>245</td>
</tr>
<tr>
<td><strong>Roadside furniture and traffic facilities</strong></td>
<td>various</td>
<td>Not yet determined</td>
<td>Not yet determined</td>
<td>Not yet determined</td>
</tr>
</tbody>
</table>

9.0 Monitoring and Review

This RAMP will require refinement and regular updating and reviewing.

The main refinements proposed are:

- To provide a more comprehensive link between the required level of maintenance expenditure on transport assets to provide ongoing specified levels of service. This will then enable community consultation to be undertaken to assist in the resolution of community expectations and financial constraints.
- To undertake more detailed monitoring and improve the knowledge of asset life which will assist in financial planning for rehabilitation or renewal of assets.

Council's Road Asset Manager will be responsible for the ongoing maintenance of the plan and updating the relevant asset registers. The asset registers are to be updated by the end of each financial year.

The Road Asset Manager will also undertake a comprehensive review of the RAMP every five years.
Bellingen Shire Council
Road Asset Management Plan

Appendix A – Asset Management Sub-Plan
Regional and Local Road Network

Scenario   Version
February 2014
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1. EXECUTIVE SUMMARY

Context

Bellingen Shire Council is a small rural council on the mid north coast of NSW. The area is served by an extensive road network but the population and rate base is small and consequently there is limited funding available to support the extensive road network.

The road network provides the main system for access throughout the community. This road network includes extensive lengths of rural roads extending as the only access up narrow valleys. The area is subject to high rainfall, steep landforms and fast vegetation growth which all contribute to the challenge of providing a safe and serviceable road system.

The Regional and Local Road Network Service

The Regional and Local Road network comprises:

- Regional Roads Pavements
- Regional Roads Wearing Surface
- Local Roads Pavements
- Local Roads Wearing Surface

These infrastructure assets have a replacement value of $176,786,000.

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is $28,020,000 or $2,802,000 on average per year.

Estimated available funding for this period is $22,133,000 or $2,213,000 on average per year which is 79% of the cost to provide the service. This is a funding shortfall of $589,000 on average per year. 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.

What we will do

We plan to provide Road Network services for the following:

- Operation, maintenance, renewal and upgrade of Regional and Local Road Pavements and Wearing Surfaces to meet service levels set in annual budgets.
- Construction of some limited additional sealed pavements and some minor widening of existing road pavements as part of pavement rehabilitation works within the 10 year planning period.

What we cannot do

We do not have enough funding to provide all services at the desired service levels or provide new services. Works and services that cannot be provided under present funding levels are:

- Providing more frequent routine maintenance such as verge side vegetation control, road shoulder grading or unsealed pavement grading
- Significant road improvements such as widening and realignments

Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. We have identified major risks as:

- Inadequate funding for renewal and maintenance resulting in deterioration of asset and decrease in level of service
- Inadequate funding for maintenance resulting in exposure to public liability
- Inadequate and/or incomplete asset registers

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

- Ensuring priority to asset maintenance and renewal is given through the budget process
• Regularly revising the rolling program of road improvements
• Regularly revising the use and appropriateness of the BSC Road Inspection Policy
• Progressively reassess and update the asset registers

Confidence Levels
This AM Plan is based on medium level of confidence information.

The Next Steps
The actions resulting from this asset management plan are:
• Improve the quality of the asset information, particularly with regard to asset condition assessment, life of assets and residual asset value
• Improve the accuracy of costs to provide varying levels of service to enable better consultation and management of expectations within the community
Questions you may have

What is this plan about?
This asset management plan covers the infrastructure assets that serve the Bellingen Shire Community’s Road Network needs. These assets include Regional and Local Roads throughout the Council area that enable people to gain access for a variety of daily needs.

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 asset management 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 Council’s transport network was constructed 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, services from the assets are decreasing and maintenance costs are increasing.

Council’s 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 to make saving in future operations and maintenance costs,

6. Consulting with the community to ensure that transport services and costs meet community needs and are affordable,
7. Developing partnership 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 council will have to reduce service levels in some areas, unless new sources of revenue are found. For the road network, the service level reduction may include more inconvenient access.

What can we do?
We can develop options, costs and priorities for future Regional and Local Road Network services, consult with the community to plan future services to match the community service needs with ability to pay for services and maximise community benefits against costs.
2. INTRODUCTION

2.1 Background

This asset management 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 20 year planning period.

The asset management plan follows the format for AM Plans recommended in Section 4.2.6 of the International Infrastructure Management Manual. The asset management plan is to be read with the organisation’s Asset Management Policy and Asset Management Strategy.

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide access for its community.

<table>
<thead>
<tr>
<th>Asset category</th>
<th>Dimension</th>
<th>Replacement Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Roads Pavements</td>
<td>34 km</td>
<td>$22,375,000</td>
</tr>
<tr>
<td>Regional Roads Wearing Surface</td>
<td>216,000 m2</td>
<td>$1,029,000</td>
</tr>
<tr>
<td>Local Roads Pavements</td>
<td>531 km</td>
<td>$140,014,000</td>
</tr>
<tr>
<td>Local Roads Wearing Surface</td>
<td>2,273,000 m2</td>
<td>$13,368,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$176,786,000</td>
</tr>
</tbody>
</table>

Table 2.1: Assets covered by this Plan

Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.1.1.

<table>
<thead>
<tr>
<th>Key Stakeholder</th>
<th>Role in Asset Management Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Councillors/Board Members</td>
<td>• Represent needs of community/shareholders,</td>
</tr>
<tr>
<td></td>
<td>• Allocate resources to meet the organisation’s objectives in providing services</td>
</tr>
<tr>
<td></td>
<td>• Ensure organisation is financial sustainable.</td>
</tr>
<tr>
<td>General Manager</td>
<td>Ensure the Asset Management Policy is implemented</td>
</tr>
<tr>
<td>Deputy General Manager Operations</td>
<td>Guide the implementation of the Asset Management Plan in accordance with the Asset Management</td>
</tr>
<tr>
<td></td>
<td>Strategy</td>
</tr>
<tr>
<td>Manager Asset Management and Design</td>
<td>Prepare, update and periodically review the Asset Management Plan</td>
</tr>
<tr>
<td>Manager Works</td>
<td>Provide input into and implement the operational aspects of the Asset Management Plan</td>
</tr>
</tbody>
</table>

1 IPWEA, 2011, Sec 4.2.6, Example of an Asset Management Plan Structure, pp 4|24 – 27.
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 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.\(^2\)

2.3 Plan Framework

Key elements of the plan are

- Levels of service – specifies the services and levels of service to be provided by the organisation,
- 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 is shown below.

\(^2\) Based on IPWEA, 2011, IIMM, Sec 1.2 p 1|7.
**Road Map for preparing an Asset Management Plan**

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

**CORPORATE PLANNING**
Confirm strategic objectives and establish AM policies, strategies & goals.
Define responsibilities & ownership.
Decide core or advanced AM Plan.
Gain organisation commitment.

**REVIEW/COLLATE ASSET INFORMATION**
Existing information sources
Identify & describe assets.
Data collection
Condition assessments
Performance monitoring
Valuation Data

**ESTABLISH LEVELS OF SERVICE**
Establish strategic linkages
Define & adopt statements
Establish measures & targets
Consultation

**LIFECYCLE MANAGEMENT STRATEGIES**
Develop lifecycle strategies
Describe service delivery strategy
Risk management strategies
Demand forecasting and management
Optimised decision making (renewals, new works, disposals)
Optimise maintenance strategies

**FINANCIAL FORECASTS**
Lifecycle analysis
Financial forecast summary
Valuation Depreciation
Funding

**IMPROVEMENT PLAN**
Assess current/desired practices
Develop improvement plan

**IS THE PLAN AFFORDABLE?**
Reconsider service statements
Options for funding
Consult with Council
Consult with Community

**ANNUAL PLAN / BUSINESS PLAN**

**IMPLEMENT IMPROVEMENT STRATEGY**

**AM PLAN REVIEW AND AUDIT**

**DEFINE SCOPE & STRUCTURE OF PLAN**

**INFORMATION MANAGEMENT, AND DATA IMPROVEMENT**

**ITERATION**

Bellingen Shire Council – Regional and Local Road Network Asset Management Sub-Plan
2.4 Core and Advanced Asset Management

This asset management plan is prepared as a ‘core’ asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a ‘top down’ approach where analysis is applied at the ‘system’ or ‘network’ level.

Future revisions of this asset management plan will move towards ‘advanced’ asset management using a ‘bottom up’ approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels.

2.5 Community Consultation

This ‘core’ asset management plan is prepared to facilitate community consultation. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist the Council/Board 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.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

The organisation has not carried out any research on customer expectations. This will be investigated for future updates of the asset management plan.

3.2 Strategic and Corporate Goals

This asset management sub-plan is prepared under the direction of the organisation’s vision, mission, goals and objectives as outlined in the main Road Asset Management Plan.

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

3.3 Legislative Requirements

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

<table>
<thead>
<tr>
<th>Legislation</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Government Act</td>
<td>Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.</td>
</tr>
<tr>
<td>Roads Act, 1993</td>
<td>Sets out the role, purpose, responsibilities and powers of Road Authorities with regard to public roads</td>
</tr>
</tbody>
</table>

---

3 IPWEA, 2011, IIMM.
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:

<table>
<thead>
<tr>
<th>Quality</th>
<th>How good is the service?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Does it meet users’ needs?</td>
</tr>
<tr>
<td>Capacity/Utilisation</td>
<td>Is the service over or under used?</td>
</tr>
</tbody>
</table>

**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 asset as near as practicable to an appropriate service condition (eg 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 (eg frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- **Upgrade** – the activities to provide an higher level of service (eg widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (eg a new library).

Asset managers plan, implement and control technical service levels to influence the customer service levels.\(^4\)

Our current service levels are detailed in Table 3.4.

---

\(^4\) IPWEA, 2011, IIMM, p 2.22
### Table 3.4: Current and Desired Service Levels

<table>
<thead>
<tr>
<th>Key Performance Measure</th>
<th>Level of Service Objective</th>
<th>Performance Measure</th>
<th>Current Level of Service</th>
<th>Optimal Level of Service</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>COMMUNITY LEVELS OF SERVICE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>Travel along roads is convenient and comfortable</td>
<td>Customer Service Requests relating to poor travel conditions</td>
<td>No of Service Requests less than 5 per 100km of road length</td>
<td>To be analysed</td>
</tr>
<tr>
<td>Function</td>
<td>Access is available at all times unless extreme weather conditions intervene</td>
<td>Customer Service Requests relating to non-access</td>
<td></td>
<td>To be analysed</td>
</tr>
<tr>
<td>Capacity/Utilisation</td>
<td>Road condition provides safe passage</td>
<td>Customer Service Requests relating to safety concerns</td>
<td></td>
<td>To be analysed</td>
</tr>
<tr>
<td><strong>TECHNICAL LEVELS OF SERVICE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td>Servicing and Management</td>
<td>Percentage of inspections undertaken in accordance with BSC Road Inspection Policy</td>
<td>All inspections completed within specified time frame</td>
<td>Greater than 90% of inspections completed within specified time frame</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Routine maintenance undertaken as scheduled</td>
<td>Percentage of roads for which specified routine maintenance activities are completed</td>
<td>Greater than 90% of routine maintenance activities undertaken</td>
<td>Approximately 75% of routine maintenance activities undertaken as required</td>
</tr>
<tr>
<td></td>
<td>Intervention levels for identified defects met</td>
<td>No of defects per year not completed within specified intervention time frame</td>
<td>All defects attended to within time frame</td>
<td>To be analysed</td>
</tr>
<tr>
<td>Renewal</td>
<td>Re-seals and pavement restoration projects completed on schedule</td>
<td>No of re-seal and pavement restoration projects completed as scheduled</td>
<td>To be determined</td>
<td>Works Program delayed due to flood events</td>
</tr>
<tr>
<td>Upgrade/New</td>
<td>Road improvement projects for safety and serviceability</td>
<td>No. of improvement projects completed as scheduled</td>
<td>To be determined</td>
<td>Few improvement projects scheduled on Works Program due to funding issues</td>
</tr>
</tbody>
</table>

#### 3.5 Desired Levels of Service

Indications of desired levels of service are obtained from community consultation/engagement. The asset management planning process includes the development of 3 scenarios to develop levels of service that are financially sustainable.
4. **FUTURE DEMAND**

4.1 **Demand Drivers**

Drivers affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 **Demand Forecast**

The present position and projections for demand drivers that may impact future service delivery and utilisation of assets were identified and are documented in Table 4.3.

4.3 **Demand Impact on Assets**

The impact of demand drivers that may affect future service delivery and utilisation of assets are shown in Table 4.3.

<table>
<thead>
<tr>
<th>Demand drivers</th>
<th>Present position</th>
<th>Projection</th>
<th>Impact on services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>App. 12,000</td>
<td>Growth less than 2%</td>
<td>No significant impact on road capacity in near future</td>
</tr>
<tr>
<td>Demographics</td>
<td>Skew towards older age groups</td>
<td>Skew is likely to increase</td>
<td>No significant impact in near future</td>
</tr>
</tbody>
</table>

**Table 4.3: Demand Drivers, Projections and Impact on Services**

4.4 **Demand Management Plan**

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or 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.

No opportunities have identified to date for demand management. The need for demand management opportunities will be considered in future revisions of this asset management sub-plan.

4.5 **Asset Programs to meet Demand**

New assets required to meet growth will be acquired free of cost from land developments. The quantity of new road network assets constructed or acquired by Council in the medium term is expected to be minimal.

Acquiring these new assets will commit council to fund ongoing operations and maintenance costs for the period that the service provided from the assets is required. These future costs have not been identified or considered in developing forecasts of future operations and maintenance costs because they are currently expected to be low in comparison to existing maintenance costs.

---

5 IPWEA, 2011, IIMM, Table 3.4.1, p 3|58.
5. LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

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

The Regional and Local Road Network covers most areas of the Shire. Local Roads are located to link most properties to main town centres and State Roads and Highways. The Regional Roads provide an intermediate link for a number of Local Roads as well as connecting with other regional areas.

The age profile of the assets included in this AM Plan are not accurately known. An assessment of probable age has been made based on historical knowledge of development in the area and using current condition assessments.

The developed age profile is shown in Figure 2. It should be noted that this age profile is indicative only and any peaks are generally a result of the method used to provide this initial analysis and should be considered on this basis.

Figure 2: Asset Age Profile

Bellingen SC - Age Profile
(Roads_Depreciable_Components_2014_S1_V2)
5.1.2 Asset capacity and performance

Council’s services are generally provided to meet design standards as required for new developments. In many cases the road network has been provided many years ago to the standards that existed at the time.

Deficiencies are identified by inspections and reports from the community. These deficiencies are managed by including any identified improvements or upgrades on Council’s List of Road Improvement Projects. The projects on this list are assessed with a priority and considered when determining the rolling works program.

5.1.3 Asset condition

Road asset condition is monitored by routine inspections including a documented visual condition assessment on a three yearly basis.

The condition profile of our assets is shown in Figure 3.

*Fig 3: Asset Condition Profile*

![Asset Condition Profile](image)

Condition is measured using a 1 – 5 grading system as detailed in Table 5.1.3.

**Table 5.1.3: Simple Condition Grading Model**

<table>
<thead>
<tr>
<th>Condition Grading</th>
<th>Description of Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Very Good</strong>: only planned maintenance required</td>
</tr>
<tr>
<td>2</td>
<td><strong>Good</strong>: minor maintenance required plus planned maintenance</td>
</tr>
<tr>
<td>3</td>
<td><strong>Fair</strong>: significant maintenance required</td>
</tr>
<tr>
<td>4</td>
<td><strong>Poor</strong>: significant renewal/rehabilitation required</td>
</tr>
<tr>
<td>5</td>
<td><strong>Very Poor</strong>: physically unsound and/or beyond rehabilitation</td>
</tr>
</tbody>
</table>

---

6 IPWEA, 2011, IIMM, Sec 2.5.4, p 2|79.
5.1.4 Asset valuations

The value of assets recorded in the asset register as at 2010 covered by this asset management sub-plan is shown below. Assets were last revalued at 2010. Assets are valued at replacement cost on a Greenfield site.

<table>
<thead>
<tr>
<th>Asset Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Replacement Cost</td>
<td>$176,786,000</td>
</tr>
<tr>
<td>Depreciable Amount</td>
<td>$101,037,000</td>
</tr>
<tr>
<td>Depreciated Replacement Cost</td>
<td>$117,584,000</td>
</tr>
<tr>
<td>Annual Depreciation Expense</td>
<td>$1,876,000</td>
</tr>
</tbody>
</table>

Useful lives were reviewed in 2010 by a technical assessment using background knowledge and experience of staff.

Key assumptions made in preparing the valuations were:

- Asset is provided on a greenfield site (ie land clearing was allowed but no traffic control
- Internal unit rates for readily available labour, plant and equipment and current contract rates for specialised services and equipment
- Current technology and construction methods

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

<table>
<thead>
<tr>
<th>Ratio Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate of Annual Asset Consumption</td>
<td>1.9%</td>
</tr>
<tr>
<td>(Depreciation/Depreciable Amount)</td>
<td></td>
</tr>
<tr>
<td>Rate of Annual Asset Renewal</td>
<td>1.1%</td>
</tr>
<tr>
<td>(Capital renewal exp/Depreciable amount)</td>
<td></td>
</tr>
<tr>
<td>Rate of Annual Asset Upgrade/New</td>
<td>0.1%</td>
</tr>
<tr>
<td>(Capital upgrade exp/Depreciable amount)</td>
<td></td>
</tr>
<tr>
<td>Rate of Annual Asset Upgrade/New</td>
<td>0.1%</td>
</tr>
<tr>
<td>(including contributed assets)</td>
<td></td>
</tr>
</tbody>
</table>

In 2014/15 financial year the organisation plans to renew assets at 60% of the rate they are being consumed and will be increasing its asset stock by less than 1% in the year.

5.1.5 Historical Data

Historical data on assets is contained in Council’s Road Asset Management System MS Access Database.

Historical financial information is available on Council’s Financial CivicView module.

5.2 Infrastructure Risk Management Plan

An assessment of risks 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

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7 Also reported as Written Down Current Replacement Cost (WDCRC).
8 See main Road Asset Management Plan
occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

This risk analysis is provided in Section 7.0 of the main Road Asset Management Plan.

5.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Routine maintenance 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 Plan

Operations activities affect service levels including quality and function through street sweeping and grass mowing frequency, intensity and spacing of street lights and cleaning frequency and opening hours of building and other facilities.

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, eg 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.

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 improve maintenance and service delivery performance.

Specific maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacing air conditioning units, etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

Actual past maintenance expenditure is shown in Table 5.3.1.

<table>
<thead>
<tr>
<th>Year</th>
<th>Maintenance Expenditure (Est)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Planned and Specific</td>
</tr>
<tr>
<td>2010</td>
<td>$1,200,000</td>
</tr>
<tr>
<td>2011</td>
<td>$1,250,000</td>
</tr>
<tr>
<td>2012</td>
<td>$1,300,000</td>
</tr>
</tbody>
</table>

Planned maintenance work is currently estimated to be in the order 80% of total maintenance expenditure.

Current maintenance expenditure levels are considered to be inadequate to meet required service levels. Council only carries out essential maintenance activities during the latter part of the financial year in an attempt to meet the allocated budget. The number of complaints received regarding road condition increases at this time. Future revision of this asset management plan will include linking required maintenance expenditures with required service levels.
Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement. Some reactive maintenance to urgent defects is carried out in accordance with intervention response levels given in the BSC Road Inspection Policy (refer to Appendix A).

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 the organisation is obtaining best value for resources used.

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.

The organisation’s service hierarchy is shown in Table 5.3.2.

<table>
<thead>
<tr>
<th>Service Hierarchy</th>
<th>Service Level Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Roads</td>
<td>Convenient access at normal speeds for topography</td>
</tr>
<tr>
<td>Local Roads</td>
<td>Reasonably convenient access sometimes at low speed over short distances depending on topography and road condition</td>
</tr>
</tbody>
</table>

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 refines investigative activities, maintenance plans and capital expenditure plans at the appropriate time.

Operations and maintenance activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities are detailed in Council’s BSC Road Inspection Policy.
Standards and specifications

Maintenance work is carried out in accordance with the following Standards and Specifications.

- AusSpec maintenance specifications

5.3.3 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 4. Note that all costs are shown in current 2013 dollar values (ie real values).

*Figure 4: 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 in the main Road Asset Management Plan.

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

5.4 Renewal/Replacement Plan

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 plan

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 3 was used for this asset management plan.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed on 2010.9

<table>
<thead>
<tr>
<th>Asset (Sub)Category</th>
<th>Useful life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Roads Pavements</td>
<td>60 years</td>
</tr>
<tr>
<td>Regional Roads Wearing Surface</td>
<td>15 years</td>
</tr>
<tr>
<td>Local Roads Pavements</td>
<td>75 years</td>
</tr>
<tr>
<td>Local Roads Wearing Surface</td>
<td>20 years</td>
</tr>
</tbody>
</table>

### Table 5.4.1: Useful Lives of Assets

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 options that could address the service deficiency,
  - and evaluate the options against evaluation criteria adopted by the organisation, and
- select the best option to be included in capital renewal programs,
- Using ‘low cost’ 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 the Council/Board,
- 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 the organisation is obtaining best value for resources used.

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 (eg replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (eg roughness of a road).10

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9 Refer to main Road Asset Management Plan
10 IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.
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.  

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Council’s project priority ranking system.

Renewal and replacement standards

Renewal work is carried out in accordance with the following Standards and Specifications.

- AusSpec Specification
- RMS specification (where AusSpec is not available)

5.4.3 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 5. Note that all amounts are shown in real values.

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

**Fig 5: Projected Capital Renewal and Replacement Expenditure**

Bellingen SC - Projected Capital Renewal Expenditure
(Roads_Depreciable_Components_2014_S3_V2)

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11 Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.
Deferred renewal and replacement, ie 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. This is further discussed in Section 6.2.

5.5 **Creation/Acquisition/Upgrade Plan**

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 4.4.

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 and scheduled in future works programmes. The priority ranking criteria is as given in Council’s project priority assessment system, as for asset renewals.

5.5.2 **Capital Investment Strategies**

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

- Planning and scheduling capital upgrade 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 options,
  - and evaluate the options against evaluation criteria adopted by Council/Board, 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 the organisation 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 shown in Section 5.4.2.

5.5.3 **Summary of future upgrade/new assets expenditure**

Projected upgrade/new asset expenditures are summarised in Fig 6. The projected upgrade/new capital works program is shown in Appendix C. All amounts are shown in real values.
Expenditure on new assets and services in the organisation’s capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. No assets are currently identified for possible decommissioning and disposal. If any assets are identified they will be investigated to determine the required levels of service to determine what options are available for alternate service delivery, if any.

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 (ie what are the operations and maintenance and capital projects we are unable to do, 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 the 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).
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:

- Increased frequency of roadside vegetation control
- Increased frequency of unsealed road grading
- Increased frequency of gravel road resheeting
- Increased road shoulder maintenance
- Widening and realignment of road pavements

5.7.2 Service consequences

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

- Lower level of road safety
- Lower travel times

5.7.3 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 potential for accidents
- Higher vehicle operating costs

These risks have been considered under Council’s BSC Road Inspection Policy and improvement project priority assessment system.

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 shown in real values.
This projection is based on Council being successful in obtaining an 11.8% Special Rate Variation (SRV) from the 2014-15 financial year. A comparison has been made to determine the impact if this SPV is not approved and assuming rates are pegged at 2.3%. These financial projections are shown in Fig 7B.

As can be seen the capital renewal expenditure on road infrastructure without the 11.8% SRV will be much lower and reduce Council’s ability to become sustainable in the longer term.
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, long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Asset Renewal Funding Ratio

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 56% of the funds required for the optimal renewal and replacement of its assets.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is $3,243,000 per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure over the 10 year planning period is $2,050,000 per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by this asset management plan is -$1,184,000 per year (-ve = gap, +ve = surplus).

Life cycle expenditure is 63% of life cycle costs.

The life cycle costs and life cycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term. If the life cycle expenditure is less than that life cycle cost, it is most likely that outlays will need to be increased or cuts in services made in the future.

Knowing the extent and timing of any required increase in outlays and the service consequences if funding is not available will assist organisations in providing services to their communities in a financially sustainable manner. This is the purpose of the asset management plans and long term financial plan.

Medium term – 10 year financial planning period

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

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12 AIFMG, 2009, Financial Sustainability Indicator 8, Sec 2.6, p 2.18
These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is $2,059,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is $2,050,000 on average per year giving a 10 year funding shortfall of $945,000 per year. This indicates that the organisation expects to have 68% of the projected expenditures needed to provide the services documented in the asset management plan.

Medium Term – 5 year financial planning period

The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is $2,891,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is $2,197,000 on average per year giving a 5 year funding shortfall of $694,000. This indicates that the organisation expects to have 76% of projected expenditures required to provide the services shown in this asset management plan.

Asset management financial indicators

Figure 7A shows the asset management financial indicators over the 10 year planning period and for the long term life cycle.

**Figure 7A: Asset Management Financial Indicators**

![Asset Management Financial Indicators](image)

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 for the first years of the asset management plan and ideally over the 10 year life of the Long Term Financial Plan.
Figure 8 shows the projected asset renewal and replacement expenditure for the first 10 years of the AM Plan. 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 8: Projected and LTFP Budgeted Renewal Expenditure (SRV 11.8%)

As in Section 6.1 a comparison was made between an 11.8% SRV and the rate peg of 2.3%. Figure 8A shows the projected asset renewal and replacement expenditure for the first 10 years of the AM Plan for the 2.3% rate peg as a comparison. As can be seen the budgeted expenditure is significantly lower for the arte peg.

Figure 8A: Projected and LTFP Budgeted Renewal Expenditure (Rate Peg 2.3%)

Table 6.1.1 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 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall (Scenario 2)

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected Renewals ($000)</th>
<th>LTFP Renewal Budget ($000)</th>
<th>Renewal Financing Shortfall ($000) (-ve Gap, +ve Surplus)</th>
<th>Cumulative Shortfall ($000) (-ve Gap, +ve Surplus)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$975</td>
<td>$1,130</td>
<td>$155 (-)</td>
<td>$155 (-)</td>
</tr>
<tr>
<td>2016</td>
<td>$975</td>
<td>$537</td>
<td>-$438 (-)</td>
<td>-$283 (-)</td>
</tr>
<tr>
<td>2017</td>
<td>$975</td>
<td>$700</td>
<td>-$275 (-)</td>
<td>-$558 (-)</td>
</tr>
<tr>
<td>2018</td>
<td>$1,175</td>
<td>$880</td>
<td>-$295 (-)</td>
<td>-$853 (-)</td>
</tr>
<tr>
<td>2019</td>
<td>$1,175</td>
<td>$950</td>
<td>-$225 (-)</td>
<td>-$1,078 (-)</td>
</tr>
<tr>
<td>2020</td>
<td>$1,175</td>
<td>$680</td>
<td>-$495 (-)</td>
<td>-$1,573 (-)</td>
</tr>
<tr>
<td>2021</td>
<td>$1,425</td>
<td>$550</td>
<td>-$875 (-)</td>
<td>-$2,448 (-)</td>
</tr>
<tr>
<td>2022</td>
<td>$1,425</td>
<td>$670</td>
<td>-$755 (-)</td>
<td>-$3,203 (-)</td>
</tr>
<tr>
<td>2023</td>
<td>$1,675</td>
<td>$450</td>
<td>-$1,225 (-)</td>
<td>-$4,428 (-)</td>
</tr>
<tr>
<td>2024</td>
<td>$1,475</td>
<td>$370</td>
<td>-$1,505 (-)</td>
<td>-$5,933 (-)</td>
</tr>
<tr>
<td>2025</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$6,526 (-)</td>
</tr>
<tr>
<td>2026</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$7,120 (-)</td>
</tr>
<tr>
<td>2027</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$7,713 (-)</td>
</tr>
<tr>
<td>2028</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$8,306 (-)</td>
</tr>
<tr>
<td>2029</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$8,900 (-)</td>
</tr>
<tr>
<td>2030</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$9,493 (-)</td>
</tr>
<tr>
<td>2031</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$10,086 (-)</td>
</tr>
<tr>
<td>2032</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$10,679 (-)</td>
</tr>
<tr>
<td>2033</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$11,273 (-)</td>
</tr>
<tr>
<td>2034</td>
<td>$1,285</td>
<td>$692</td>
<td>-$593 (-)</td>
<td>-$11,866 (-)</td>
</tr>
</tbody>
</table>

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

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 in the AM Plan (including possibly...
revising the LTFP) before finalising the asset management plan 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.

6.1.2 Projected expenditures for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in 2013 real values.

<table>
<thead>
<tr>
<th>Year</th>
<th>Operations ($000)</th>
<th>Maintenance ($000)</th>
<th>Projected Capital Renewal ($000)</th>
<th>Capital Upgrade/ New ($000)</th>
<th>Disposals ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>$15.00</td>
<td>$1,343.00</td>
<td>$1,130.00</td>
<td>$200.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2016</td>
<td>$15.02</td>
<td>$1,345.66</td>
<td>$537.00</td>
<td>$110.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2017</td>
<td>$15.03</td>
<td>$1,347.12</td>
<td>$700.00</td>
<td>$250.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2018</td>
<td>$15.05</td>
<td>$1,350.44</td>
<td>$880.00</td>
<td>$100.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2019</td>
<td>$15.06</td>
<td>$1,351.77</td>
<td>$950.00</td>
<td>$200.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2020</td>
<td>$15.07</td>
<td>$1,354.43</td>
<td>$680.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2021</td>
<td>$15.07</td>
<td>$1,354.43</td>
<td>$550.00</td>
<td>$200.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2022</td>
<td>$15.09</td>
<td>$1,357.09</td>
<td>$670.00</td>
<td>$140.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2023</td>
<td>$15.10</td>
<td>$1,358.95</td>
<td>$450.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
<tr>
<td>2024</td>
<td>$15.10</td>
<td>$1,358.95</td>
<td>$370.00</td>
<td>$436.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

6.2 Funding Strategy

After reviewing service levels, as appropriate to ensure ongoing financial sustainability 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 9 shows the projected replacement cost asset values over the planning period in real values.
Depreciation expense values are forecast in line with asset values as shown in Figure 10.

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 11. The depreciated replacement cost of contributed and new assets is shown in the darker colour and in the lighter colour for existing assets.
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.

<table>
<thead>
<tr>
<th>Key Assumptions</th>
<th>Risks of Change to Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Council will be successful in obtaining a Special Rate Variation of 11.8% in the 2014-15 financial year</td>
<td>High risk (subject to IPART application)</td>
</tr>
<tr>
<td>Use of technical judgement for asset acquisition dates when not known</td>
<td>Medium to high risk</td>
</tr>
<tr>
<td>Use of technical judgement for useful lives and remaining lives determined from experience</td>
<td>Medium risk</td>
</tr>
<tr>
<td>Use of technical judgement for projected renewal requirements (Scenario 2)</td>
<td>Medium risk</td>
</tr>
<tr>
<td>Use of technical judgement for current replacement valuations</td>
<td>Low risk</td>
</tr>
<tr>
<td>Use of technical judgement to determine residual values</td>
<td>Medium risk</td>
</tr>
</tbody>
</table>

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\(^{13}\) in accordance with Table 6.5.

\(^{13}\)IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.
Table 6.5: Data Confidence Grading System

<table>
<thead>
<tr>
<th>Confidence Grade</th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A Highly reliable</td>
<td>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 ± 2%</td>
<td></td>
</tr>
<tr>
<td>B Reliable</td>
<td>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 ± 10%</td>
<td></td>
</tr>
<tr>
<td>C Uncertain</td>
<td>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 ± 25%</td>
<td></td>
</tr>
<tr>
<td>D Very Uncertain</td>
<td>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 ± 40%</td>
<td></td>
</tr>
<tr>
<td>E Unknown</td>
<td>None or very little data held.</td>
<td></td>
</tr>
</tbody>
</table>

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 6.5.1.

Table 6.5.1: Data Confidence Assessment for Data used in AM Plan

<table>
<thead>
<tr>
<th>Data</th>
<th>Confidence Assessment</th>
<th>Comment</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand drivers</td>
<td>B</td>
<td>Based on experience</td>
<td></td>
</tr>
<tr>
<td>Growth projections</td>
<td>B</td>
<td>Based on Bureau of Statistics information</td>
<td></td>
</tr>
<tr>
<td>Operations expenditures</td>
<td>B</td>
<td>Based on historical data</td>
<td></td>
</tr>
<tr>
<td>Maintenance expenditures</td>
<td>B</td>
<td>Based on historical data</td>
<td></td>
</tr>
<tr>
<td>Projected Renewal exps.</td>
<td>B</td>
<td>Based on recent experience</td>
<td></td>
</tr>
<tr>
<td>- Asset values</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Asset residual values</td>
<td>D</td>
<td>Based on a assessment of available options to rehabilitate existing roads</td>
<td></td>
</tr>
<tr>
<td>- Asset useful lives</td>
<td>D</td>
<td>Requires long term monitoring of asset performance, dependent on a range of variables such as traffic loading and environmental conditions</td>
<td></td>
</tr>
<tr>
<td>- Condition modelling</td>
<td>C</td>
<td>Number of different variables used in assessment of condition</td>
<td></td>
</tr>
<tr>
<td>- Network renewals</td>
<td>B</td>
<td>Based on recent experience</td>
<td></td>
</tr>
<tr>
<td>- Defect repairs</td>
<td>B</td>
<td>Based on recent experience</td>
<td></td>
</tr>
<tr>
<td>Upgrade/New expenditures</td>
<td>B</td>
<td>Based on recent experience</td>
<td></td>
</tr>
<tr>
<td>Disposal expenditures</td>
<td>B</td>
<td>Assumed that requirements for disposal are minor</td>
<td></td>
</tr>
</tbody>
</table>

Over all data sources, the data confidence is assessed as low to 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

7.1.1 Accounting and financial systems

Council uses CivicView for its financial management

Accountabilities for financial systems

Council’s Manager Finance is responsible for accounting and financial systems

Accounting standards and regulations

AAS 27 Financial Reporting by Local Governments

Capital/maintenance threshold

Refer to the main Road Asset Management Plan for the threshold between capital and maintenance expenditure.

Required changes to accounting financial systems arising from this AM Plan

Improved linkage between financial data and asset management data

7.1.2 Asset management system

Asset management for road assets is managed using an MS Access Database

Asset registers

Asset Registers are included in the MS Access Database

Linkage from asset management to financial system

Manually linked as required for various reports

Accountabilities for asset management system and data maintenance

The Manager Asset Management and Design is responsible maintenance of the asset management system and data

Required changes to asset management system arising from this AM Plan

It will be necessary to develop better condition data for the assets, refine the expected life of various assets and develop more rigorous assessment of residual value.
7.2 Improvement Program

The asset management improvement plan generated from this asset management plan is shown in Table 8.2.

Table 7.2: Improvement Plan

<table>
<thead>
<tr>
<th>Task No</th>
<th>Task</th>
<th>Responsibility</th>
<th>Resources Required</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Develop procedures for maintaining consistency between the asset management systems and financial management systems</td>
<td>Manager Asset Management and Design</td>
<td>Staff time</td>
<td>April 2015</td>
</tr>
<tr>
<td>2</td>
<td>Review the accuracy and currency of asset data</td>
<td>Manager Asset Management and Design</td>
<td>Staff time</td>
<td>April 2015</td>
</tr>
<tr>
<td>3</td>
<td>Review the methodology for determining remaining life with detail assessment of assets requiring renewal in the medium term</td>
<td>Manager Asset Management and Design</td>
<td>Staff time</td>
<td>August 2015</td>
</tr>
<tr>
<td>4</td>
<td>Review method for determining assessed asset acquisition dates when this information is not known</td>
<td>Manager Asset Management and Design</td>
<td>Staff time</td>
<td>April 2015</td>
</tr>
</tbody>
</table>

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 organisation’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 1 year 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,
- The Asset Renewal Funding Ratio achieving the target of 1.0.
8. REFERENCES


Organisation, ‘Strategic Plan 20XX – 20XX’,

Organisation, ‘Annual Plan and Budget’.
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 A  Maintenance Response Levels of Service

The table below shows the maintenance intervention response times for defects identified on the road network. The Road Risk Rating (RRR) is determined based on the nature, severity and location of the defect.

<table>
<thead>
<tr>
<th>RRR</th>
<th>Response Time for Repair</th>
<th>Initial Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Maintenance if funds permit</td>
<td>Nil</td>
</tr>
<tr>
<td>5</td>
<td>Maintenance if funds permit</td>
<td>Nil</td>
</tr>
<tr>
<td>6</td>
<td>Maintenance if funds permit</td>
<td>Nil</td>
</tr>
<tr>
<td>7</td>
<td>Maintenance schedule</td>
<td>Nil</td>
</tr>
<tr>
<td>8</td>
<td>Maintenance schedule</td>
<td>Nil</td>
</tr>
<tr>
<td>9</td>
<td>Maintenance schedule</td>
<td>Nil</td>
</tr>
<tr>
<td>10</td>
<td>Maintenance schedule</td>
<td>Nil</td>
</tr>
<tr>
<td>11</td>
<td>60</td>
<td>Inspect within 24 hours</td>
</tr>
<tr>
<td>12</td>
<td>60</td>
<td>Inspect within 24 hours</td>
</tr>
<tr>
<td>13</td>
<td>60</td>
<td>Inspect within 24 hours</td>
</tr>
<tr>
<td>14</td>
<td>30</td>
<td>Inspect within 8 hours</td>
</tr>
<tr>
<td>15</td>
<td>30</td>
<td>Inspect within 8 hours</td>
</tr>
<tr>
<td>16</td>
<td>30</td>
<td>Inspect within 8 hours</td>
</tr>
<tr>
<td>17</td>
<td>10</td>
<td>Inspect within 8 hours</td>
</tr>
<tr>
<td>18</td>
<td>10</td>
<td>Inspect within 8 hours</td>
</tr>
<tr>
<td>19</td>
<td>2</td>
<td>Inspect within 4 hours</td>
</tr>
<tr>
<td>20</td>
<td>2</td>
<td>Inspect within 4 hours</td>
</tr>
<tr>
<td>21</td>
<td>1</td>
<td>Inspect within 4 hours</td>
</tr>
</tbody>
</table>
## Appendix B  Projected 10 year Capital Renewal and Replacement Works Program

<table>
<thead>
<tr>
<th>Program</th>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shire Road Resurfacing Program</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunny Corner Road</td>
<td>14/15</td>
<td>100,000</td>
</tr>
<tr>
<td>Kalang Road Section 1</td>
<td>14/15</td>
<td>150,000</td>
</tr>
<tr>
<td>Darkwood Road Section 1</td>
<td>14/15</td>
<td>150,000</td>
</tr>
<tr>
<td>North Bank Road Section 1</td>
<td>14/15</td>
<td>150,000</td>
</tr>
<tr>
<td>Hydes Creek Road Section 1</td>
<td>15/16</td>
<td>100,000</td>
</tr>
<tr>
<td>Dome Road Section 1</td>
<td>15/16</td>
<td>100,000</td>
</tr>
<tr>
<td>Gordonville Road Section 1</td>
<td>16/17</td>
<td>200,000</td>
</tr>
<tr>
<td>Dome Road Section 2</td>
<td>16/17</td>
<td>100,000</td>
</tr>
<tr>
<td>Summervilles Road</td>
<td>16/17</td>
<td>200,000</td>
</tr>
<tr>
<td>Yellow Rock Road</td>
<td>16/17</td>
<td>200,000</td>
</tr>
<tr>
<td>Muldiva Road Section 1</td>
<td>17/18</td>
<td>140,000</td>
</tr>
<tr>
<td>Deer Vale Road Section 1</td>
<td>17/18</td>
<td>150,000</td>
</tr>
<tr>
<td>Maynards Plains Road</td>
<td>17/18</td>
<td>200,000</td>
</tr>
<tr>
<td>Mylestom Streets, Selected Sections</td>
<td>17/18</td>
<td>210,000</td>
</tr>
<tr>
<td>North Bank Road Section 2</td>
<td>21/22</td>
<td>150,000</td>
</tr>
<tr>
<td>Old Coast Road</td>
<td>18/19</td>
<td>300,000</td>
</tr>
<tr>
<td>Valery Road</td>
<td>18/19</td>
<td>250,000</td>
</tr>
<tr>
<td>South Arm Road Section 1</td>
<td>18/19</td>
<td>200,000</td>
</tr>
<tr>
<td>Deer Vale Road Section 2</td>
<td>17/18</td>
<td>80,000</td>
</tr>
<tr>
<td>Urunga Streets</td>
<td>22/23</td>
<td>75,000</td>
</tr>
<tr>
<td>Bellingen Streets</td>
<td>22/23</td>
<td>150,000</td>
</tr>
<tr>
<td>Promised Land Road</td>
<td>19/20</td>
<td>200,000</td>
</tr>
<tr>
<td>Whisky Creek Road Section 1</td>
<td>19/20</td>
<td>80,000</td>
</tr>
<tr>
<td>Whisky Creek Road Section 2</td>
<td>21/22</td>
<td>170,000</td>
</tr>
<tr>
<td>Darkwood Road Section 2</td>
<td>20/21</td>
<td>150,000</td>
</tr>
<tr>
<td>Hydes Creek Road Section 2</td>
<td>19/20</td>
<td>200,000</td>
</tr>
<tr>
<td>Dorrigo Streets</td>
<td>22/23</td>
<td>75,000</td>
</tr>
<tr>
<td>Kalang Road section 2</td>
<td>21/22</td>
<td>150,000</td>
</tr>
<tr>
<td>Paddys Plains Road</td>
<td>19/20</td>
<td>200,000</td>
</tr>
<tr>
<td>Muldiva Road Section 2</td>
<td>22/23</td>
<td>150,000</td>
</tr>
<tr>
<td>Gordonville Road Section 2</td>
<td>21/22</td>
<td>100,000</td>
</tr>
<tr>
<td>Bowrvaille Road</td>
<td>23/24</td>
<td>40,000</td>
</tr>
<tr>
<td>Martellis Road</td>
<td>20/21</td>
<td>100,000</td>
</tr>
<tr>
<td>Deer Vale Road Section 3</td>
<td>21/22</td>
<td>100,000</td>
</tr>
<tr>
<td>Main Road 119 Tyringham Road</td>
<td>23/24</td>
<td>100,000</td>
</tr>
<tr>
<td>Main Road 469 Coramba Road</td>
<td>23/24</td>
<td>80,000</td>
</tr>
<tr>
<td>Gleniffer Road</td>
<td>23/24</td>
<td>150,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Repair Program Pavement Rehabilitations</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Road MR 119 North of North Dorrigo Stage 2</td>
<td>14/15</td>
<td>220,000</td>
</tr>
<tr>
<td>Main Road MR 119 North of North Dorrigo Stage 4</td>
<td>14/15</td>
<td>180,000</td>
</tr>
<tr>
<td>Main Road MR 469 South of Wild Cattle Creek</td>
<td>14/15</td>
<td>180,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Road Projects</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hillside Drive, Urunga Retaining Wall</td>
<td>15/16</td>
<td>337,000</td>
</tr>
<tr>
<td>North Bank Road reshape sections of road</td>
<td>20/21</td>
<td>100,000</td>
</tr>
</tbody>
</table>
## Appendix C  Projected Upgrade/Exp/New 10 year Capital Works Program

<table>
<thead>
<tr>
<th>Program</th>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Improvements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Timboon Road (East) Construct and Seal</td>
<td>14/15</td>
<td>200,000</td>
</tr>
<tr>
<td>Vernon Place, Urunga Upgrading</td>
<td>15/16</td>
<td>110,000</td>
</tr>
<tr>
<td>Kylie Street, Urunga Drainage Upgrade</td>
<td>16/17</td>
<td>250,000</td>
</tr>
<tr>
<td>Bailey Street, Repton: K&amp;G with sealed shoulders</td>
<td>17/18</td>
<td>200,000</td>
</tr>
<tr>
<td>Hill Street, Bellingen K&amp;G with sealed shoulders</td>
<td>18/19</td>
<td>400,000</td>
</tr>
<tr>
<td>Roses Road Construct &amp; Seal</td>
<td>23/24</td>
<td>436,000</td>
</tr>
<tr>
<td>Darkwood Road widening at &quot;dairy corner&quot;</td>
<td>20/21</td>
<td>150,000</td>
</tr>
<tr>
<td>Dudley Street, Bellingen - Road and drainage upgrade</td>
<td>20/21</td>
<td>250,000</td>
</tr>
<tr>
<td>Kalang Road widen road at 3rd bend west of Pearnes Bridge</td>
<td>21/22</td>
<td>140,000</td>
</tr>
</tbody>
</table>
## Appendix D  Budgeted Expenditures Accommodated in LTFP

### NAMS.PLUS2 Asset Management – Bellingen SC

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**Roads Depreciable Components 2014 S3 V2 Asset Management Plan**

First year of expenditure projections 2015 (yr ending 30 June)

<table>
<thead>
<tr>
<th>Asset values as at 30 June 2014</th>
<th>Calc CRC from Asset Register</th>
<th>% of asset value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current replacement cost</td>
<td>$176,786 (000)</td>
<td>101,037 (000)</td>
</tr>
<tr>
<td>Depreciable amount</td>
<td>$101,037 (000)</td>
<td></td>
</tr>
<tr>
<td>Depreciated replacement cost</td>
<td>$117,584 (000)</td>
<td></td>
</tr>
<tr>
<td>Annual depreciation expense</td>
<td>$1,876 (000)</td>
<td></td>
</tr>
</tbody>
</table>

### Planned Expenditures from LTFP

20 Year Expenditure Projections

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operations</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
<td>$5</td>
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<td>AM systems budget</td>
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<td>Total operations</td>
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| Maintenance                   |       |       |       |       |       |       |       |       |       |       |
| Reactive maintenance budget   | $402  | $402  | $402  | $402  | $402  | $402  | $402  | $402  | $402  | $402  |
| Planned maintenance budget    | $806  | $806  | $806  | $806  | $806  | $806  | $806  | $806  | $806  | $806  |
| Specific maintenance items budget | $1,134 | $1,134 | $1,134 | $1,134 | $1,134 | $1,134 | $1,134 | $1,134 | $1,134 | $1,134 |
| Total maintenance             | $1,343 | $1,343 | $1,343 | $1,343 | $1,343 | $1,343 | $1,343 | $1,343 | $1,343 | $1,343 |

| Capital Disposals             |       |       |       |       |       |       |       |       |       |       |
| Planned renewal budget        | $1,130 | $537  | $700  | $880  | $950  | $600  | $550  | $670  | $450  | $370  |
| Planned upgrade/new budget    | $200  | $1,100 | $250  | $100  | $200  | $0    | $200  | $140  | $0    | $436  |
| Non-growth contributed asset value | $0    | $0    | $0    | $0    | $0    | $0    | $0    | $0    | $0    | $0    |

### Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)

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### Capital Renewal

| Capital Upgrade | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

### User Comments #2

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<tr>
<th>Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)</th>
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<td>Note: Enter all values in current yr ending 30 June</td>
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### Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)

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<td>$537</td>
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Appendix E  Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AAAC</td>
<td>Average annual asset consumption</td>
</tr>
<tr>
<td>AM</td>
<td>Asset management</td>
</tr>
<tr>
<td>AM Plan</td>
<td>Asset management plan</td>
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<tr>
<td>ARI</td>
<td>Average recurrence interval</td>
</tr>
<tr>
<td>ASC</td>
<td>Annual service cost</td>
</tr>
<tr>
<td>BOD</td>
<td>Biochemical (biological) oxygen demand</td>
</tr>
<tr>
<td>CRC</td>
<td>Current replacement cost</td>
</tr>
<tr>
<td>CWMS</td>
<td>Community wastewater management systems</td>
</tr>
<tr>
<td>DA</td>
<td>Depreciable amount</td>
</tr>
<tr>
<td>DRC</td>
<td>Depreciated replacement cost</td>
</tr>
<tr>
<td>EF</td>
<td>Earthworks/formation</td>
</tr>
<tr>
<td>IRMP</td>
<td>Infrastructure risk management plan</td>
</tr>
<tr>
<td>LCC</td>
<td>Life Cycle cost</td>
</tr>
<tr>
<td>LCE</td>
<td>Life cycle expenditure</td>
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<tr>
<td>LTFP</td>
<td>Long term financial plan</td>
</tr>
<tr>
<td>MMS</td>
<td>Maintenance management system</td>
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<tr>
<td>PCI</td>
<td>Pavement condition index</td>
</tr>
<tr>
<td>RV</td>
<td>Residual value</td>
</tr>
<tr>
<td>SoA</td>
<td>State of the Assets</td>
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<tr>
<td>SS</td>
<td>Suspended solids</td>
</tr>
<tr>
<td>vph</td>
<td>Vehicles per hour</td>
</tr>
<tr>
<td>WDCRD</td>
<td>Written down current replacement cost</td>
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</table>
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 paid 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.

Expenses  
Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value  
The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms 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, e.g. 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 organisation, 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 organisation.

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 *