Road Network Asset Management Plan 2018

creating a living environment

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1.01	14 May 2012	Initial draft	John Martin	Ralf Stoeckeler	
2.01	16/3/2013	Revision 1 – Change Template, integrate recent revisions to RNMP, improve maintenance, future renewal and improvement planning	Dennis Gascoigne Ralf Stoeckeler John Martin	Ralf Stoeckeler	Dennis Gascoigne
3.01	27/05/2015	Revision 2 – Update AMP to reflect asset maintenance and improvement works undertaken since adoption of the Plan, inclusive of updating charts, graphs and tables to reflect current values	Stephen Bell Director Engineering Services	Stephen Bell Director Engineering Services	
4.01	04/07/2018	Review to comply with OLG NSW Integrated Planning & Reporting Framework, updated costing schedules, risk management changes, register updates, all tables & graphs updated & narrative rewritten	David Ward Acting Manager Assets & Project Planning	Andre Kompler Chief Operating Officer	Andre Kompler Chief Operating Officer
5.01	22/08/2018	Adoption of Road Network Asset Management Plan 2018	David Ward Acting Manager Assets & Project Planning	Andre Kompler Chief Operating Officer	Andre Kompler Chief Operating Officer

Asset Management for Small, Rural or Remote Communities Practice Note

The Institute of Public Works Engineering Australia.

www.ipwea.org.au/AM4SRRC

Table of Contents

List of Tables

List of Figures

1. Executive Summary

1.1. Review of Road Network Asset Management Plan & Data Base (SB: 2015)

The Shire's initial Road Network Asset Management Plan (RNAMP) was developed in 2013 and the network was visually inspected by Shire operational staff and condition ratings were assigned by individuals using the rating framework in the Plan. This had the potential of variances in assessment and inconsistencies.

Since 2013 the 'asset road register' has been updated with asset changes due to road reconstructions, rehabilitations, resheetings, resealing and major culvert and bridge works.

In 2015 the Road Network Asset Management Plan financials were updated and the Plan became a Version 3.01 and adopted by the Shire on 24 June 2015. In October 2015, Blue Sky undertook an audit in line with the updated RNAMP 2015 and revised the valuation of the road network assets. As part of the audit process were updates on changes and improvements to causeways, culverts, bridges and roads. An Audit cycle is usually every five years.

In preparation for the Review of the RNAMP 2015 was the development of the:

- Project Management Plan and Communications Plan in line with IAP2 guidelines;
- Review Analysis document;
- Conditions Ratings guide;

The RNAMP 2018 document has the following changes incorporated into the RNAMP 2015 version:

1. The Plan has been rewritten to comply with the Office of Local Government NSW (OLG) Integrated Planning and Reporting Framework and to align with all of the other Shire published documents:

   https://www.tenterfield.nsw.gov.au/council/council-documents/plans-and-reports/integrated-planning-reporting-2018

   - ❖ Community Engagement Strategy (TSC:2017)
   - ❖ Community Strategic Plan 2017-2027 (TSC: 2017)
   - ❖ Delivery Program 2017-2021 (TSC:2017)
   - ❖ Operational Plan 2018-2019 (TSC:2018)
   - ❖ Workforce Management Strategy 2017-2021(TSC:2017)
   - ❖ Long Term Financial Plan 2017-2027 (TSC:2017)
   - ❖ Asset Management Strategy 2017-2027 (TSC:2017)
   - ❖ Road Network Management Plan 2013 (TSC:2013)
2. An asset management document flow chart has been developed to understand the connectivity of the Shire's documents to the OLG Framework.
3. A raft of updates, changes, revisions and actions as determined by the instructing Review Analysis have been incorporated into the 2018 version (Refer to Review Analysis Document).
4. A bench marking analysis has been undertaken with four other local governments to compare the essential elements of a RNAMP and the systems used. This has resulted in the adjustment of asset useful lives and residual values, along with validating the Shire's system (Refer to Review Analysis Document).
5. The community consultation section has been updated to reflect the recent 2018 community survey results.
6. All of the financial analysis has been reviewed and updated to align with the Delivery Program 2017-21, Operational Plan 2018-19, Long Term Financial Plan 2017-27 (LTFP) and the Asset Management Strategy 2017-27 (AMS). This has also taken into account the recent funding of major regional road projects.
7. Valuations have been updated to reflect the October 2015 Audit (Blue Sky) outcomes.
8. A road network sample audit has been instigated for 5% of each of the road categories to check entries in the data base for completeness and correctness. This is on-going and will take time to complete.
9. Reviewed the road condition definitions to align with NAASRA and AustRoads.
10. Harmonising the Road Asset Registers between the Engineering and Finance departments.
11. Updated the risk section to align with the current Shire adopted practice.
12. Updated the improvement plan.

1.2. Context

From the Community Strategic Plan 2017 (p13) the goals included an effective interconnected transport system that is safe, efficient and affordable and the quality of life is enhanced by transport options to access services not available within the Shire.

The Shire's road network is extensive with sealed and unsealed roads servicing the town of Tenterfield, numerous villages, state forests, national parks, and the neighbouring rural district. The provision of the road network in a serviceable and safe condition is essential to support the servicing for social cohesion and the main agricultural and tourism industries of the region.

The main issue the Shire faces in the management of the road network asset, is inadequate funding to address renewal requirements. Of specific concern are the condition of numerous old timber bridges, which are near or exceeding their useful life. Another legacy has been the transfer of state maintained roads to the Shire without adequate funding allocations to compensate for the additional costs of maintenance and renewal for these assets including the Bruxner Way and Mt Lindesay Road.

Due to limited resources, the Shire prioritises the upgrade of assets and construction of new assets as a low priority, focusing instead on maintenance and renewal to support a modest level of service to meet the current and future needs of the community.

1.3. The road network

The road network comprises:

- 570.5km of sealed roads
- 1124.2km of unsealed roads
- 152 bridges (combination of concrete and timber)
- 4,597 concrete culverts
- 390 concrete causeways

These infrastructure assets have a replacement value of $360.7 million (Valuation of Road Network Asset TSC – Blue Sky 2015).

1.4. What does it cost

The projected cost to provide the services covered by the Road Network Asset Management Plan including operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period 2017-27 Asset Management Strategy p24 (TSC: 2017)is about $100.49 million or $10.05 million per year. The Shire's estimated available funding including grants, for this period is listed in the Long Term Financial plan 2017-27 (TSC: 2017). A shortfall has been identified and if not addressed, will result in decreases to service levels provided to meet the current and future needs of the community. This may result in load limited bridges, removal of bridges from service, restrictions to some classes of vehicles on regional and local roads, reversion of sealed roads to unsealed roads or lower quality gravel surfaces.

The gap between available funding and required expenditure is due to several future capital projects, including the replacement of timber bridges, the upgrading of Mount Lindesay Road (Legume to Woodenbong), which has been funded by the Federal Government in the amount of $24M over four years, Mount Lindesay Road sealing sections north of Tenterfield, Tooloom Road, Amosfield Road and Bruxner Way.

1.5. What the Shire does

The Shire provides Road Network services by:

- Consulting with the community through the Community Engagement Plan 2017 and adopting the transport goals listed in the Community Strategic Plan 2017.
- Operation, maintenance and renewal of rural and regional roads, town streets, bridges, culverts, causeways and footpaths to meet service levels set by Council in the Delivery Program 2017-2021 and the annual Operational Plans to fit available resources and funding.
- Secure the Tenterfield Heavy Vehicle bypass.
- Subject to funding within the 10 year planning period, which is additional to what is currently received, construct and seal the remaining unsealed sections of Mount Lindesay Road from Tenterfield to Legume, realign part of Bruxner Way approaching the New England Highway and continue to rebuild Mount Lindesay Road from Legume to Woodenbong.

1.6. What the Shire cannot do

The Shire does not have enough funding to provide all services at the desired service levels or provide new services. Within the present funding regime the following services cannot be provided:

- New sealing of rural roads;
- Maintenance of existing road seals;
- Maintenance of a consistent depth of road gravel to unsealed roads;
- Maintenance of all bridges to a standard where no load limits are applied and future service is assured.

1.7. Managing the Risks

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

- Insufficient funding;
- Severe weather events;
- Failure of major bridge structures;

The Shire will endeavour to manage these risks by:

- Identifying additional funding opportunities and supporting regional economic development;
- Monitoring bridges to ensure significant risks to service are identified and repaired where possible.

1.8. The next steps

The actions resulting from this Asset Management Plan are:

- Seek out options for additional State and Federal government infrastructure grants;
- Improve the quality of renewal and maintenance project identification and prioritisation through updates to condition rating systems;
- Improvements in construction practice and quality assurance;
- Implement changes in technology, which translate to more cost effective maintenance and renewal outcomes;
- Consider a Special Rate Variation (SRV) to specifically provide 50% Shire Fund Reserves to match government grant applications for timber bridges.

1.9. What is the asset management plan

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

This Asset Management Plan covers the road network infrastructure assets required for the Community's needs. The assets include roads, bridges, culverts, causeways and footpaths throughout the Shire enabling the community to access businesses, residences, recreational facilities, health services and tourist destinations.

The Plan details information about the 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.

1.10. Why is there a funding shortfall

Much of the Shire's high order road network was constructed with funding from government grants, or by other state government organisations including the NSW Department of Works and Road Marine Services (RMS). Those provided by State Government were accepted by the Shire without consideration of ongoing operations, maintenance and replacement costs.

Many of these assets are approaching the later years of their life and require replacement in the near future. The useful life of the assets is decreasing and maintenance costs are increasing annually.

The Shire's present funding levels are insufficient to continue to provide existing services at current levels in the medium or long term.

1.11. What options are available to the Shire

To reduce the funding gap shortfall the Shire needs to address the following:

1. Improve asset knowledge so data accurately records the asset inventory, how assets are performing and asset life to anticipate their inability to provide the required service levels;
2. Improve the efficiency in constructing new asset, whilst operating, maintaining and replacing existing assets to optimise life cycle costs;
3. Identify and manage risks associated with providing infrastructure services;
4. Adopting a fit for purpose approach to service levels and infrastructure to ensure the community receives the best return from infrastructure assets;
5. Identify assets surplus to needs for disposal to make savings in future budgets for operations and maintenance;
6. Consult with the community to ensure road network services are affordable and meets community needs;
7. Develop collaborative partnerships or business arrangements with third parties to provide services;
8. Seek additional funding from the State and Federal governments and other authorities to foster a 'whole of government' funding approach to road network infrastructure services.

1.12. What may happen if the funding shortfall is not reduced

The Shire 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 downgrading of sealed roads to gravel, removal

of through access where a bridge is taken out of service and reduction in cycle times for routine and planned maintenance of the unsealed road network.

1.13. What can the Shire do

Council can develop costs of changing road network service levels, consult with the community on its service needs and its willingness to pay what is required to cater for these needs. Then adjust either service levels or the costs to the community to align with the mismatch between community expectations on service levels and the community's willingness to pay.

1.14. What can the Community do

The Shire welcomes Community engagement and response on this Asset Management Plan. Suggestions on how the Shire may change or reduce its road network services mix to ensure the appropriate level of service can be provided within available funding constraints.

2. Introduction

2.1. Council context

Council's mission:

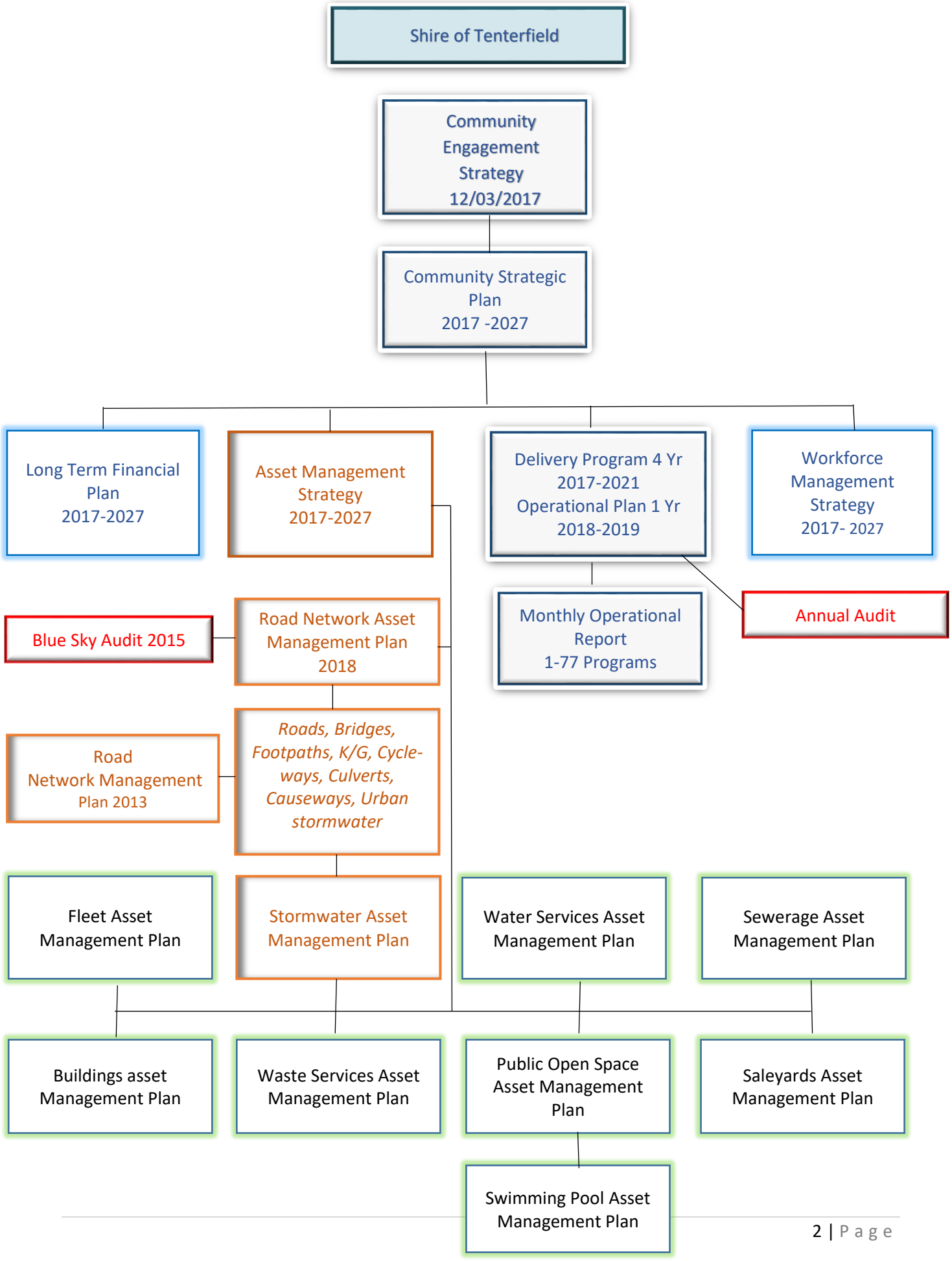
"Quality Nature, Quality Heritage, Quality Lifestyle" provides focus and direction in the manner in which Council provides leadership and services.

Council's vision:

- To establish a Shire where the environment will be protected and enhanced to ensure sustainability and inter-generational equity;
- To recognise and actively develop our cultural strengths and unique heritage;
- To establish a prosperous Shire through balanced, sustainable economic growth managed in a way to create quality lifestyles and satisfy the employment, environmental and social aims of the community;
- To establish a community spirit which encourages a quality lifestyle, supports health and social well-being, promotes family life and lifestyle choices;
- To establish a community spirit which promotes opportunities to participate in sport and recreation, promotes equal access to all services and facilities; and
- To encourage all people to participate in the economic and social life of the community with a supportive attitude towards equal life chances and equal opportunity for access to the Shire's resources.

The Shire's sixteen (16) primary goals encapsulated in the Community Strategic Plan 2017-27 and cover the themes of community, economy, environment, leadership and transport. Fundamentally they are all interrelated and the transport theme is the underlying plank supporting the other themes. All services provided to the community are reliant on the road network asset system.

The Shire has in place the Integrated Planning and Reporting Framework and associated strategies and plans:


Shire of Tenterfield
Community Engagement Strategy 12/03/2017
Community Strategic Plan 2017 -2027
Long Term Financial Plan 2017-2027
Asset Management Strategy 2017-2027
Delivery Program 4 Yr 2017-2021 Operational Plan 1 Yr 2018-2019
Workforce Management Strategy 2017- 2027
Monthly Operational Report 1-77 Programs
Annual Audit
Blue Sky Audit 2015
Road Network Asset Management Plan 2018
Road Network Management Plan 2013
Roads, Bridges, Footpaths, K/G, Cycle-ways, Culverts, Causeways, Urban stormwater
Fleet Asset Management Plan
Stormwater Asset Management Plan
Water Services Asset Management Plan
Sewerage Asset Management Plan
Buildings asset Management Plan
Waste Services Asset Management Plan
Public Open Space Asset Management Plan
Saleyards Asset Management Plan
Swimming Pool Asset Management Plan

The Road Network Asset Management Plan 2018 is an integral part of the Shire's overall Integrated Planning and Reporting Framework shown above and as prescribed by the OLG and is part of the following strategies, plans, audits and data repositories:

- Integrated Planning & Reporting Framework Office of Local Government
- Integrated Planning & Reporting Manual for Local Government In NSW -2013
- Community Engagement Strategy (TSC:2017)
- Community Strategic Plan 2017-2027 (TSC: 2017)
- Delivery Program 2017-2021 (TSC:2017)
- Operational Plan 2018-2019 (TSC:2018)
- Workforce Management Strategy 2017-2021(TSC:2017)
- Long Term Financial Plan 2017-2027 (TSC:2017)
- Asset Management Strategy 2017-2027 (TSC:2017)
- Road Network Asset Management Plan (TSC- SB: 2015)
- Road Network Management Plan (TSC:2013)
- Valuation of Road Network Assets - Blue Sky (DG:2015)
- Stormwater Asset Management Plan (TSC: 2013)
- Asset Data Spreadsheets in N:\drive

2.2. Background for Plan

The Community considers transport connections are vital in supporting all areas of life in the Shire. An appropriately maintained a planned transport system effectively allows the community to access living related services, work places and learning opportunities (Community Strategic Plan p30:2017).

The aspirational goal of the community is to have an interconnected transport system that is safe, efficient and affordable. The strategies to achieve this and support this goal is to have a well maintained and functioning road network suitable for all users now and to take into consideration future network consumption and demand. This is further supported by ensuing the Shire assets are managed now and in the long term to meet the needs of the community (Community Strategic Plan p30:2017). Relevant goals and objectives and how these are addressed in this Plan are shown in Table 2.1

Table 2-1 Organisation goals and how these are addressed in this RNAMP

Goal / Objective	How Goal and Objectives are addressed in AMP
Sustainability and inter-generational equity	The long term costs of asset management and maintenance are determined and spread across their life span. This allows planning for acceptable levels of service and allocation of resources to ensure functioning assets with the cost not disproportionally allocated to future generations.
Establish a prosperous shire with quality lifestyle and economic development	The true cost of assets and their useful life is identified. Key assets are prioritised and realistic levels of service established.
Equal access to recreation, services and facilities	The road network is a key requirement for accessibility. This plan identifies long term maintenance requirements and opportunities for improvement to ensure recreational facilities (many, such as national parks are accessed along rural roads) and services are accessible.

This Road Network Asset Management Plan 2018 demonstrates responsible management of assets and services provided to ensure compliance with regulatory requirements and demonstrates the funding levels needed to provide the required levels of service. This Plan (RNAMP 2018) addresses the whole-of-life funding of Council's roads and associated assets and is integrally linked to the Road Network Management Plan (RNMP), which details operational guidelines to the management of roads and associated assets. The infrastructure assets covered by this asset management plan are shown in Table 2.2.

Table 2-2 Assets covered by this RNAMP

Asset category	Dimension	Replacement Value *
Roads – Sealed and Unsealed	1,694.7 km (1,124.2 km unsealed 570.5 km sealed)	$238.1 million
Bridges – Timber, Concrete & Composite	152 bridges, 58 timber	$69.9 million
Rural Culverts	No. 4,597	$28.8 million
Causeways	No. 390	$8.3 million
Footpaths & Cycle Ways	11.9km	$2.5 million
Kerb and gutter	33km	$4.0 million
Urban Stormwater	11km	$9.1 million
Signs & furniture #	Various	$1.1 million
	TOTAL	**$361.8 million**

* Replacement value as determined in Valuation of Roads Network Assets for TSC (Blue Sky 2015) pp 5, 22 # from Shire records

Under the NSW Roads Act 1993, the Shire has a maintenance responsibility only for dedicated public roads. In reality, the Shire maintains many more roads as their legal status is not clearly defined, while others are not on Shire road reserves. These may be in private land, or reserves controlled by other authorities including Crown reserves and state forests, or sit within Council road reserve for only part of their length. As a result it is not always clear whether a road is, or is not, a public road, and at times it may be necessary to carry out extensive research and legal searches to determine the status of a road. This plan assumes all roads being maintained by the Shire in 2018 are public roads.

Another legacy has been the transfer of state maintained roads to the Shire without adequate funding allocations to compensate for the additional costs of maintenance and renewal for these assets including the Bruxner Way and Mt Lindesay Road.

2.3. Asset Management Objectives

The Shire's strategic asset management framework brings together the inter-relationships between key strategic and corporate planning activities and operational asset management. This allows the Shire's strategic goals to be integrated with the asset portfolio to meet the Shire's program delivery requirements and established community service levels determined through the development of the Community Strategic Plan (Asset Management Strategy 2017-27 p6).

The objectives for this Plan are a subset of the Asset Management Strategy 2017-27 as follows:

- Manage road network assets through the development and continuous updating of the Road Network Asset Management Plan (RNAMP) in accordance with relevant legislation and best practice.
- Through the Community Strategic Plan 2017-27 and the Long-Term Financial Plan 2017-27 ensure future funding needs are identified, affordable, agreed and allocated so the asset meets the defined levels of service required by the community.
- Record assets and collect data in accordance with the appropriate accounting standards, reporting requirements, internal asset information protocols and procedures.
- Maintain a road network asset information system with all physical attributes, life cycle data, condition, performance and costings.

2.4. Plan framework

Key elements of the Plan are:

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

This RNAMP is prepared in accordance with the International Infrastructure Management Manual (IIMM). 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.

2.5. Community consultation

The initial version of the Road Network Asset Management Plan adopted by Council on 27 March 2013 (Resolution 87/13), incorporates community consultation undertaken from November 2012 to January 2013 on infrastructure and service levels. The consultation assisted Council and the community in matching the level of service needed by the community, service risks and consequences with the community's capacity to pay for the desired level of service.

No community consultation was undertaken for the 2015 version of the Road Network Asset Management Plan. A Community Satisfaction Survey was undertaken by Council in early 2015, whilst not specific to infrastructure and service levels, were considered in the 2015 Plan.

The key results from the community consultation undertaken from November 2012 to January 2013 are considered to still be appropriate and include:

- Road maintenance is the highest priority infrastructure priority for respondents overall, with 49.2% listing it as the highest or second highest maintenance priority;
- 98% of all respondents support the trial of alternative maintenance techniques such as recovery of verge material, and different ripping and rolling strategies;
- 84% (85% for rural community) believe the quality of maintenance is more important than the length between maintenance visits;
- 72% (72% for rural community) do not support Council maintaining private roads (this is current practice);
- 85% (81% for rural community) believe all roads of the same class and usage should be maintained to the same standard;
- 66% (63% for rural community) support the current policy of maintaining roads only to the second last property access;
- 78% believe better roads will improve tourist traffic to outer regions of the shire, but only 37% believe this justifies prioritisation of roads which are tourist routes;
- 57% support removing an expensive-to-replace bridge from service if an alternative route less than 5km longer exists;
- 72% are in support of better communication regarding maintenance cycle timing.

However, a recent community satisfaction survey has been undertaken during March/April 2018 and these results demonstrated customer satisfaction stayed at the same level or declined marginally since 2015. The key vulnerabilities are the maintenance of local bridges and the overall condition of local sealed roads. The maintenance of local sealed and unsealed roads is still very important to the community.

3. Levels of service

3.1. Customer Research and Expectations

The Shire completed a "road show" late in 2012 presenting the challenges facing the Shire in maintaining and improving assets. As part of this process was a paper based survey mailed to every Shire resident, along with an online option. This enabled the determination of the service expectations and level of understanding regarding asset management. Service levels, maintenance strategies and the performance of the road network in general are outlined in the operational Road Network Management Plan 2013 and have been included in this reviewed RNAMP 2018.

3.2. Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. The most significant of the relevant legislation is shown in Table 3.1.

Table 3-1 Legislative requirements

Legislation	Requirement
Local Government Act 1993	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.
Local Government Amendment (Planning and Reporting) Act 2009	Local Government Amendment (Planning and Reporting) Act 2009 includes the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Public Works Act, 1912	Sets out the role of Council in the planning and construction of new assets.
Road Transport (General) Act, 2005	Provides for the administration and enforcement of road transport legislation. It provides for the review of decisions made under road transport legislation. It makes provision for the use of vehicles on roads and road related areas and also with respect to written off and wrecked vehicles.
Roads Act, 1993	Sets out rights of the public to pass along public roads, establishes procedures for opening and closing public roads, and provides for the classification of roads. It also provides for declaration of the RMS and other public authorities as roads authorities for both classified and unclassified roads, and confers certain functions (in particular, the function of carrying out roadwork) on the RMS and other roads authorities. Finally it provides for distribution of functions conferred by the Act between the RMS and other roads authorities, and regulates the carrying out of various activities on public roads.

3.3. Levels of service

Customer levels of service – Customer levels of service for the road network are defined and described in the Road Network Management Plan (Circa: 2013).

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 council undertakes to best achieve the desired community outcomes.

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as opening hours, cleansing frequency, mowing frequency;

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

4. Future demand

4.1. Demand forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, employment participation and environmental awareness. There is expected to be little change in demand due to population changes. The Shire's population has decreased from 6,811 (2011) to 6,628 (2016) in 5 years (ABS) and this is reflected in the population in Tenterfield, Drake, Urbenville and other villages also exhibiting decreasing or stable populations. The non-urban/village population has continued to stabilise over the period.

Demand factor trends and impacts on service delivery are summarised in Table 4-1.

Table 4-1 Demand factors, projections and impact on community

Demand factor	Positon 2011	Position 2016	Projection 2021	Impact on Community/Services
Population	6,811	6,628	7500	Focus on maintenance and renewal of existing services will be on-going
Non-urban population	3,115	3,132	3750	Increased demand on rural road infrastructure
55 or older	38.7%	53.9 %	42%	Immediate increased demand on health services
19 or younger	24.3%	20.7%	21%	Possible reduction in education service personnel
Median age	47	53	51	Increased emphasis on lifestyle and recreation
Workforce participation	54.4% FT 32.7% PT	52.7% FT 32.7% PT	48%	An aging local work force may make it more difficult to employ skilled personnel

Note: Population projections derived from 2016 census data

- An aging demographic is also in evidence with an increase in persons aged over 55 from 38.7% to 53.9%, and this has exceeded the 2021 projection of 42%.
- A decrease in persons aged 19 or under from 24.3% to 20.7%, which has almost reached the 2021 projection of 21%.
- The median age has increased from 47 to 53 and exceeded the 2021 projection of 51.
- Workforce participation has decreased from 54.4% to 52.7% FT since 2011. It is noted there is a stable 32.7% participation in part time employment. This indicates a decentralisation of the population from other areas with the increased prevalence of lifestyle properties and small holdings. With the reduction in the younger population group this supports the overall population decrease with employment and education from outside the Shire.

4.2. Changes in technology

Technology changes forecast to affect the delivery of services covered by this plan are detailed in Table 4-2.

Table 4-2 Changes in technology and forecast effect on service delivery

Technology Change	Effect on Service Delivery
Social media and internet connectivity	Reduction in boundaries to rural residents "tele-commuting" and further decentralisation of the population. Increase of e-services such as remote medical services delivered over the internet, and remote video education.
Increased use of GPS	Reduction in importance and significance of some signage; improvement in data collection and management for Asset Management
Changing pavement technologies, including new binders for insitu stabilisation of sealed pavements and polymer modified bitumen binders	Reduction in gravel replacement, seal life extension
Polymer treatments used as a part of maintenance grading of gravel roads to partly offset climatic change impacts	Post graded road condition lasts longer for less unplanned maintenance call backs on road surfaces which corrugate or return to dust in increasingly drier climatic conditions

4.3. Demand management planning

Demand for the continuation of existing and for new services will be managed through a combination of existing asset maintenance and upgrade, the provision of modest user pays contribution to asset upgrades to meet demand, and adjustments to expected service levels. Demand management practices can include non-asset solutions, insuring against risks (albeit insurance is only as good as the underwriter's willingness to pay and not look for policy loop holes) and managing failures.

Non-asset solutions focus on providing the required service without the need for the Shire to own the assets and are not readily available for roads infrastructure in the rural context. As current funding is not adequate to maintain existing levels of service, it is essential the expected consistent demand is addressed through either the communication of the resulting decrease in service levels, or by securing new funding.

4.4. New assets for growth

Council's road infrastructure is extensive and provides access to most parts of the Shire. There are five significant projects that are expected to impact on the potential for growth in the Shire:

1. Mount Lindesay Road – Legume to Woodenbong

   Mount Lindesay Road provides the most direct route between the Darling Downs Region in South East Queensland and the Northern Rivers Region of New South Wales. Mount Lindesay Road was originally the main highway link between Sydney and Brisbane prior to the upgrading of the existing New England Highway and Cunningham Highway over Cunningham's Gap in 1950. The road was subsequently reclassified from 'State Highway' to 'Regional Road' for the length from Tenterfield to Summerland Way in 1982.

   Since reclassification there has been a significant increase in the traffic on the Legume to Woodenbong Section of Mount Lindesay Road. This increase in traffic, in particular heavy traffic, has generated significant trade in the region. The major components of this trade include livestock, delivering to regional marketing centre in Casino the largest in NSW, timber to local and coastal mills and retail goods from the Big W Warehouse in Warwick to all Big W centres on the north coast

   Mount Lindesay Road between Legume and Woodenbong is generally a single lane bitumen road in very poor condition for the majority of its length. The surface varies between 4 and 5 metres in width with an average

shoulder width of 1 metre. The overall poor condition of the road, combined with its varying geometry and poor road safety, impacts on the effective movement of traffic and transport in the area.

The upgrade of Mount Lindesay Road is essential to supporting population growth and tourism, which will flow due to its location only 2 hour drive south of Brisbane.

There has been an allocation of $24M from the Federal Government over three years for the upgrade of Mount Lindesay Road as follows:

Year 1 – 2018/19 $8.00M : 26.7km – 29.1km, 0km – 6.1km
Year 2 - 2019/20 $8.80M : 9.6km – 13.1km, Koreelah Bridge
Year 3 – 2020/21 $7.20M : 14.7km – 17.0km

Whilst the cost of upgrading Mount Lindesay between Legume to Woodenbong potentially could be multiples of the $24M allocation, depending on the level of service as determined by design speed, bridging, passing lanes and so on. The current $24M is focussed primarily on safety improvements. There is no funding allocations allowed presently to rehabilitate existing problematic pavements.

2. Tenterfield Heavy Vehicle Bypass

The Tenterfield Heavy Vehicle Bypass is a State or Federally funded project and not a Shire responsibility. As there is the potential for this project to negatively impact on traffic passing through and servicing the local businesses of Tenterfield, it is a priority of Council to improve the road infrastructure adjacent to the existing highway (under Council control) to attract visitors and ensure the future prosperity and vitality of the town. The preferred route of the Tenterfield Heavy Vehicle Bypass was publicly announced on 12 March 2015. The project development design phase is underway, funded by the Federal government and the project is managed by RMS.

3. Mount Lindesay Road between Tenterfield and Legume - Sealing the last 17km

There are three (3) sections of Mount Lindesay Road, north of Tenterfield which are currently unsealed. Constructing and sealing these sections of road will provide greater connectivity and transport efficiency between Tenterfield and areas to the north and east respectively. However, these works will not proceed until Federal and/or State government funding is provided to upgrade and seal the remaining gravel sections on this road.

4. Rebuilding and widening Tooloom Road

While Tooloom Road is not a particularly busy road, it is undulating, single lane, windy, and the existing road pavement and seal is at the end of its useful life. Due to the terrain and the road maintenance implications the option of returning it to a gravel road is not advisable. As the incremental cost to widen the road when compared to renewal is relatively low, the upgrade of this road via widening is identified as a major project.

If the road is widened, the Shire could open its network between Mount Lindesay Road to Clarence Way near Uberville to higher productivity freight transport. This widening work would need to be fully funded by the Federal or State governments as the Shire does not have the funding to effect the upgrades. The best the Shire can plan for is to retain holding the existing seal, which is failing now, with a polymer modified reseal as soon as practical. The Shire needs to focus on the timber bridge assets before any serious consideration to capital works on this road.

5. Realigning Bruxner Way from Sunnyside Loop Road to the New England Highway

Bruxner Way west is one of the busier roads under Shire management with an AADT of 276 vehicles with 59 CV's. The section approaching the New England Highway has poor horizontal and vertical alignment and needs improvement to be suitable for the quantity and nature of traffic. The funding received from the State at the time the Shire took responsibility for Bruxner Way will fix very few of the legacy issues. The Shire has been lobbying the State Government to have Bruxner Way transferred back to RMS as a state highway.

5. Lifecycle management plan

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service while optimising life cycle costs.

5.1. Background data

5.1.1. Road hierarchy

The road hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information, specifying levels of service and making decisions. The hierarchy identifies the level of service of the components used which provides assistance in asset service planning, delivery and financial reporting. The road hierarchy is explained in detail in the RNMP, but also included below in Table 5-1 and Table 5-2 for reference.

Table 5-1 Asset service hierarchy - rural

Road Class	Description of Class
A – Regional Roads	Regional roads form part of the State-wide Regional network of roads, providing transport links between major towns and cities. They are roads classified in accordance with the NSW State Government's classification system and are included in the calculation of Council's annual Block Grant for Regional Roads.
B – Primary Rural	Primary Rural roads are the highest priority rural local roads and carry higher traffic volumes greater than 75 vehicles per day. Historically continuous school bus routes and roads which carry 50 – 75 vehicles per day and carry greater than 3% heavy vehicles are eligible for classification as Primary Rural.
C – Secondary Rural	Secondary Rural roads are mid priority rural local roads and carry traffic volumes less than 75 vehicles per day but which service more than 10 different property owners and have an average traffic volume greater than 20 vehicles per day. Secondary rural roads may also serve as bus routes.
D – Local Access	Local access roads are the lowest priority local roads servicing less than 10 different property owners or have traffic volumes of less than 20 vehicles per day.

Table 5-2 Asset service hierarchy - urban

Road Class	Description of Class
Class A – Arterial	Arterial Streets provide principal avenues of communication and links between parts of large cities or between major towns and cities. Within the towns and villages of Tenterfield Shire, only the New England Highway and Bruxner Highway perform this function. They are roads classified as National or State in accordance with the State Government's classification system. Maintenance on the central portion of the road is the responsibility of State and Federal Governments. However, Council has a maintenance responsibility for the parking lanes, footpaths and road reserve of these roads.
Class B – Sub – Arterial Streets	Sub-Arterial Streets are those streets which connect arterial streets to areas of development and other major areas of the town or shire. These streets carry high traffic volumes with a broad range of vehicle types. In the towns and villages of Tenterfield Shire, only the Regional Roads meet these requirements.
Class C – Collector Streets	Collector streets are those streets which provide a link for traffic from the residential street system, some rural areas, industrial areas and other trip generators to other collector streets, sub-arterial or arterial streets.
Class D – Local Access Streets	Local Access Streets are streets which principally provide access to and from property. These streets generally carry low traffic volumes and form the bulk of streets within Tenterfield Shire.
Class E – Lanes	These streets generally provide alternative access to properties. They are narrower than Class D streets and generally have very low traffic volumes.

5.1.2. Physical parameters

Sealed and unsealed roads

This Asset Management Plan deals only with Regional and Local Roads which are under the control of Council as a roads authority. The travelling lanes of State Roads within the urban areas and in the rural area between the table drains throughout the Shire are controlled by RMS and are not included as assets of the Shire. All other assets within the road reserve are the Shire's responsibility.

Shire managed roads range from low traffic roads, which are generally formed from the natural granite substrata, to roads with gravel surfacing and sealed roads of varying widths and conditions. The design standards for the different types of roads are described in the RNMP.

A summary of the length of roads and the surface is shown in each classification for rural and urban roads in Table 5-3, Table 5-4 and Table 5-5.

Table 5-3 Road asset physical summary – rural roads

	Unsealed	Sealed	Total
A	20.8 km	215.6 km	236.4 km
B	195.2 km	216.4 km	411.6 km
C	420.2 km	44.2 km	464.3 km
D	477.5 km	25.1 km	502.6 km
Total	**1113.7 km**	**501.3 km**	**1614.9 km**

Table 5-4 Road asset physical summary – urban roads

	Unsealed	Sealed	Total
A	0.0 km	2.6 km	2.6 km
C	0.0 km	11.2 km	11.2 km
D	6.3 km	45.8 km	52.1 km
E	4.2 km	9.8 km	13.9 km
Total	**10.5 km**	**69.3 km**	**79.8 km**

Table 5-5 Road asset physical summary – all roads

	Unsealed	Sealed	Total
Total	**1124.2 km**	**570.6 km**	**1694.7 km**

Bridges

The early bridges built in the Shire were constructed from locally available timber. Later bridges were built with concrete, steel or composites such as 'Doolan Decks'. As timber structures have deteriorated and when funds are available some structures over smaller waterways have been replaced with large box culverts. In other locations where waterway flows are higher or where road levels above stream bed depth are greater, concrete bridges have been constructed as the most suitable solution. In some locations throughout the shire partial replacement of bridge components has occurred; some with concrete abutments and timber girders while others have timber abutments with concrete deck planking.

The principal types of bridges within the Shire are grouped into the following categories:

- Timber;
- Concrete;
- Steel;
- Composite, both steel girder with concrete deck and timber girder with concrete deck (Doolan Deck);
- Combined – Concrete abutment with timber girders or timber abutment with concrete decking;
- Bridge Size - Box Culverts and multi cell pipes.

There are 152 bridges of which 58 are timber and the details found in: **N:\03 Asset Management\04 Bridges.** Bridges constitute the largest risk to maintenance of service in the Shire due to the current age estimates place approximately 60% of bridges at age 60 and over, and the failure of a bridge results in the failure of connected services with no available reduced level of service.

Causeways

Causeways are generally concrete but there are some locations where dry creek crossings occur on minor roads and not recorded as causeways. Half of the Shire's 390 causeways are in poor to very poor condition and currently $2.08M is allocated over the ten years (2017-2027) to rehabilitate this stock.

Concrete causeways have two basic types:

- Floodways – No low flow pipe included; and
- Causeways – Low flow pipe is included in the structure.

Footpaths and cycle ways

The Shire has a relatively small footpath and cycleway network, mostly located along the parks adjacent to Tenterfield Creek or on the main street (Rouse Street). There are short lengths of footpaths in some of the villages.

Kerb and gutter

Some of Shire's higher class urban roads have kerb and gutter (K&G). The K&G asset is described and improvements projected in the Stormwater Asset Management Plan (SWAMP), but its condition rating and maintenance falls under this plan. The inclusion of the K&G upgrades in the SWAMP as they are primarily associated with upgrades to the stormwater system and often independent of any significant improvement to the road.

Signs and road furniture

The signage and road furniture such as guide posts, guard rails and line marking are key features of the road network but are a relatively low cost component of the asset. The cost of providing these assets is a function of the road class, built environment and terrain.

5.1.3. Asset capacity and performance

Council's services are generally provided to meet design standards where these are available and when available funding allows. The target design levels for the assets in this plan are described in the Road Network Management Plan.

There are many locations where service performance is deficient. This is most readily seen with load limited bridges, blocked culverts, overgrown vegetation impeding road alignments, insufficient gravel coverage, failing bituminous seals, rural roads with poor running surface and failing causeways. The most significant underperforming asset is the Mt Lindesay Highway from Legume to Woodenbong which urgently requires reconstruction.

5.1.4. Asset condition

Each individual asset in this Plan is graded in accordance with its condition. This condition rating is used to value the assets, assess its remaining life and plan for its maintenance. While the specific criteria for each asset varies due to the physical characteristics of the asset classes. The rating system is in accordance with the conditions shown in Table 5-6.

Table 5-6 IIMM description of condition

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

Sealed roads

The Shire has more sealed roads than it can afford to maintain. Many are at the end of their useful life and urgently require reconstruction including some key regional roads and the conditions ratings are shown in Table 5-7.

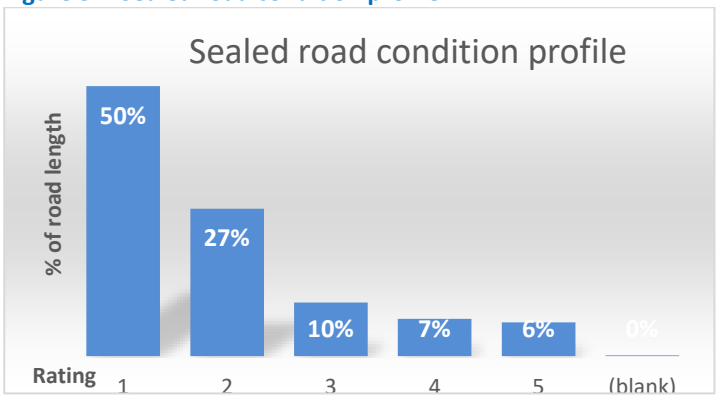
Table 5-7 Sealed road condition rating including pavements

Condition Grading	Description of Condition
1	Seal no visible cracking Pavement good condition without deformations Crossfalls and cambers in shape and performing as constructed
2	Seal fine cracking < 5% patching Pavement < 10% deformities over segment and performing as constructed
3	Seal extensive cracking, plucking, 5% to 10% of area patched Pavement 40% deformed in segment and showing signs of deterioration
4	Seal extensive cracking, patches on patches, 10% to 20% of area patched or failing Pavement 70% deformed in segment and showing signs of deterioration
5	Seal > 20% patched or failing Pavement > 70% deformed in segment and showing signs of deterioration

A sealed pavement condition rating system was developed by the Shire in 2011 based on ROCOND90 (RTA Road Conditioning Manual). In Table 5-7 the pavement condition rating descriptors has been combined with the sealed surface rating descriptors. This ratings should be read in conjunction with the general IIMM conditions in Table 5-6.

The sealed road condition profile Figure 5-1 is the combined rating of the sealed surface and pavement. This profile has been developed from the roads master excel spreadsheet using the pavement rating and found in the N:\drive:
N:\03 Asset Management\01 Road Network\Working Folder Road Register

Figure 5-1 Sealed road condition profile



Unsealed roads

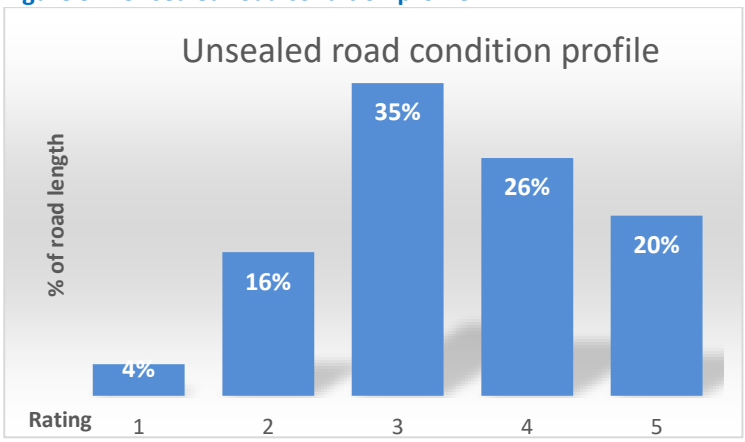
While unsealed roads offer a generally inferior running surface compared to sealed surfaces when both assets are newly constructed. Unsealed roads are more easily and cost efficiently bought back to an acceptable level of service. Unsealed roads are not suitable for high levels of traffic, but are an appropriate surface for most lower-trafficked local roads. The condition of local roads varies widely across the different classes and is prioritised according to usage. This variation in condition is also strongly influenced by available resources, which impact on cycle time for grading maintenance.

Table 5-8 Unsealed road condition rating

Condition Grading	Description of Condition
1	>90% of design pavement depth for road class, or intact seal on sealed road
2	65%-90% of design pavement depth for road class
3	40%-65% of design pavement depth for road class
4	Less than 40% bulk of design pavement depth for road class and earthworks exposed up to 50% of area
5	Less than 40% bulk of design pavement depth for road class and earthworks exposed more than 50% of area

The unsealed road condition profile Figure 5-2 has been developed from the roads master excel spreadsheet using the pavement rating and found in the N:\drive:
N:\03 Asset Management\01 Road Network\Working Folder Road Register

Figure 5-2 Unsealed road condition profile



Bridges

The Shire undertakes routine inspections of bridges in accordance with the Road Network Management Plan. The Level 1 Inspection has identified which bridges need further inspections. A Level 2 Inspection is to be carried out by consultants on some these bridges and defects noted for action by the shire.

In 2018 the Shire will complete Level 3 inspections of its 58 timber bridges inventory and a strategy will be developed to provide a way forward for future replacement works of all of the timber bridges over the next 20 years.

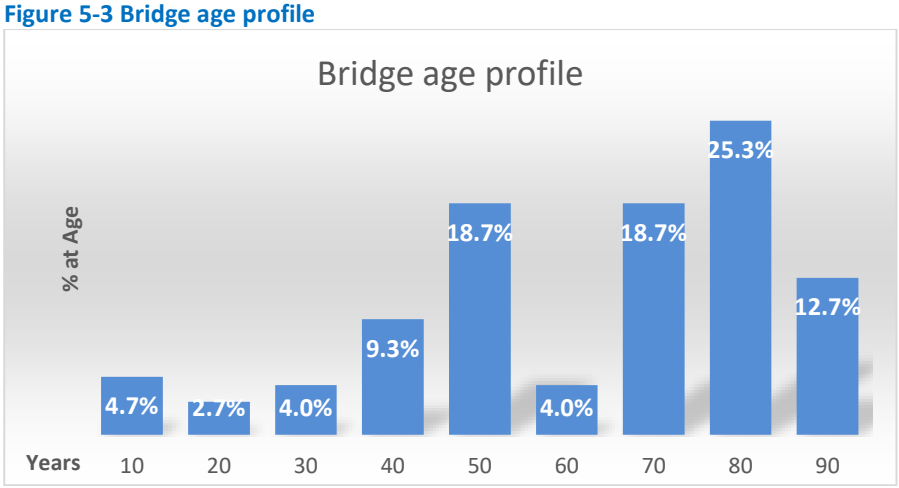
The Shire's bridge data set does not contain any data on bridge load carrying capacity. However, the Level 3 inspections will provide guidance to establish suggested load limits. Concrete and steel bridge structures were constructed in accordance with the design standards at the time of construction, but loss of strength due to fatigue loadings has occurred since construction. The Shire has regular inquiries about the load carrying capacity of bridges for proposed heavy load permits particularly on regional roads.

Table 5-9 Bridge condition rating

Condition Grading	Description of Condition
1	Good: New.
2	Minor Defects – may require maintenance or monitoring to prevent further problems.
3	Moderate Defects – Will require major maintenance or repairs to prevent further deterioration to Condition 4.
4	Severe Defects: Component is beyond repair and should be replaced.
5	Very Poor: Unserviceable – bridge should be closed until rectification completed.

Figure 5-3 shows the estimated age profile for the bridge assets, although it should be noted this is extrapolated from the subset of 40 bridges, which have established construction dates. There is a total of 152 bridges on the register, 54 of which are timber. But there are 58 known timber bridges within the Shire and the bridge register is to be updated to reflect this reality.

Figure 5-3 Bridge age profile



Note from RNAMP 2015

Culverts

Rural culverts are comprised of nearly every type of culvert in over 100 different configurations from single barrel pipes of varying standard and non-standard sizes, through to multi barrel pipes and box culverts. The pipes also have a wide range of ages and conditions with differing quality and type of construction. There is a total of 4,597 culverts in the road network. Urban stormwater is managed in the Stormwater Asset Management Plan (SWAMP).

The large number of culverts in the road network means there is large variance in their condition and performance. In recent years with heavy rain events and limited maintenance resources, have resulted in many blocked culverts. These could be restored with maintenance to a satisfactory performance level. Unfortunately, a large number of culverts are also nearing their useful life and should be replaced, including handmade, poorly jointed culverts and culverts installed using poorer techniques.

Table 5-10 Culvert condition rating

Condition Grading	Description of Condition
1	Sound physical condition; insignificant deterioration; insignificant loss of hydraulic capacity
2	Minor defects; minor loss of hydraulic capacity; minor joint displacement (25mm); minor wear on invert – roughened surface; minor joint defect - spalling (10mm deep); minor cracking – single longitudinal or circumferential (0.5 mm).
3	Partial joint failure; root intrusion; joint displacement (50mm); multiple longitudinal cracking; service pipe through pipe; moderate circumferential fracture (10-20mm wide); corrosion evident – moderate rust spots (up to 50mm diameter); spalling on cracks (10mm); longitudinal joint displacement (25mm); moderate surface damage – heavily pitted; reinforcement exposed at spalling.
4	Significant longitudinal cracking (10mm wide); serious spalling (20mm) and corrosion of reinforcement; significant joint displacement (pipe wall thickness); significant cracking – multiple 10mm cracks; major fracture (20 – 30mm wide); major longitudinal joint displacement (50mm).
5	Major vertical displacement (100mm); Severe spalling and corrosion (pipe wall thickness); major fractures – blocks full pipe thickness; pipe fracture & collapse; significant longitudinal fractures (20mm)

Further more detailed inspections are required across the culvert assets as this is currently incomplete.

Causeways

There are many causeways which are in a very poor condition and need replacement. This has been exacerbated by on-going flood events. Older causeways have been affected by poor quality concrete and the lack of cut-off walls to prevent undermining. While these are gradually being replaced, this renewal cannot keep pace with the increasing number of failing causeways.

Table 5-11 Causeway condition rating

Condition Grading	Description of Condition
1	Very Good – less than 1mm wide cracks over less than 1% of the area
2	Good – less than 3mm wide cracks over 1 – 5 % of the area
3	Fair – greater than 3mm wide cracks over 5 – 10 % of the area
4	Poor – greater than 3mm wide cracks over greater than 10% of the area, significant undermining, patches of exposed reinforcement (<50mm square) or dangerous approach / departure grades in the structure
5	Very Poor – greater than 3mm wide cracks over greater than 10% of the area, undermining causing structural damage, sections of exposed reinforcement (>50mm square) or dangerous approach / departure grades in the structure

Further more detailed inspections are required across the causeway assets as this is currently incomplete.

Footpaths and cycle ways

The footpath and cycle ways are in relatively good condition with much of the network along Tenterfield Creek only recently installed. The footpaths along the main street are less consistent, but not degraded to the point where service is consistently unreliable.

Table 5-12 Footpath and cycleway condition rating

Condition Grading	Description of Condition
1	Very Good – less than 1mm wide cracks over less than 1% of the area
2	Good – less than 3mm wide cracks over 1 – 5 % of the area
3	Fair – greater than 3mm wide cracks over 5 – 10 % of the area
4	Poor – greater than 3mm wide cracks over greater than 10% of the area patches of exposed reinforcement (<50mm square) or regular differentials in height (<20% of joints less than 10mm) creating a potential hazard or uneven surface
5	Very Poor – greater than 3mm wide cracks over greater than 10% of the area patches of exposed reinforcement (>50mm square), regular differentials in height (>20% of joints less than 10mm, or joints >10mm) creating a potential hazard or uneven surface

Further more detailed inspections are required across the footpaths and cycle ways assets as this is currently incomplete.

Kerb and gutter

Table 5-13 Kerb and gutter condition rating

Condition Grading	Description of Condition
1	Sound physical condition; insignificant deterioration; insignificant loss of hydraulic capacity
2	Isolated fine cracking at intervals; Isolated misalignment (up to 5mm); minor cosmetic chipping; minor ponding in channel only.
3	Block cracking (3 – 5mm wide) up to 20% of length; Misalignment (5 – 15mm) up to 30% of length; Isolated chipping (30mm dia.) average 5m apart; significant ponding confined to channel (up to 30%)
4	Block cracking (3 – 5mm wide) 20% - 50% of length; Misalignment (15 – 50mm) up to 50% of length water infiltration to pavement; Chipping & spalling some water infiltration (up to 50% of length); ponding encroaching into pavement with some pavement damage (up to 30%)
5	Block cracking with displacement & sections missing, water infiltrating pavement (more than 50%); misalignment over 50mm (over 50%) water infiltration; Major spalling (over 50%); Ponding significantly encroaching onto pavement, water infiltration, (30%), significant impact on adjoining pavement.

Signs and road furniture

Table 5-14 Signs and road furniture condition rating

Condition Grading	Description of Condition
1	In good condition
2	Signs: Post out of alignment, but sign still visible to traffic and serviceable Guardrail: Guardrail is cosmetically damaged but otherwise in full service Guideposts: Guidepost is out of alignment but sign still visible to traffic and serviceable
3	Signs: Post badly out of alignment, sign slightly bent or faded Guardrail: Guardrail has significant damage such as from a collision or is showing signs of age and fatigue such as rust to >5% but otherwise serves its function without creating a hazard. Guideposts: Guidepost is badly out of alignment but still visible to traffic, or reflector is faded to <75% luminosity
4	Signs: Badly Damaged – shot, torn, badly bent or faded, no night visibility. Guardrail: Guardrail has significant damage such as from a collision or is showing signs of age and fatigue such as rust to >20% but remains an effective barrier without creating a hazard, or support posts are showing evidence of undermining. Guideposts: Guidepost shows structural damage, or reflector is faded to <50% luminosity
5	Signs: Sign is missing or does not communicate required message Road Furniture: Guardrail or post or other item does not provide the required service or is a traffic hazard.

5.1.5. Asset valuations

Assets were revalued between 2011 (bridges), 2012 (culverts, kerb and causeways) and 2013 (roads). A revaluation was undertaken in October 2015 for bridges, culverts, causeways, stormwater drainage and roads by Blue Sky – 'Valuation for Road Network Assets for TSC (BS: 2015). The value of assets recorded in the asset register in accordance with the Audit in October 2015 covered by this Asset Management Plan are shown at Table 5-15 below.

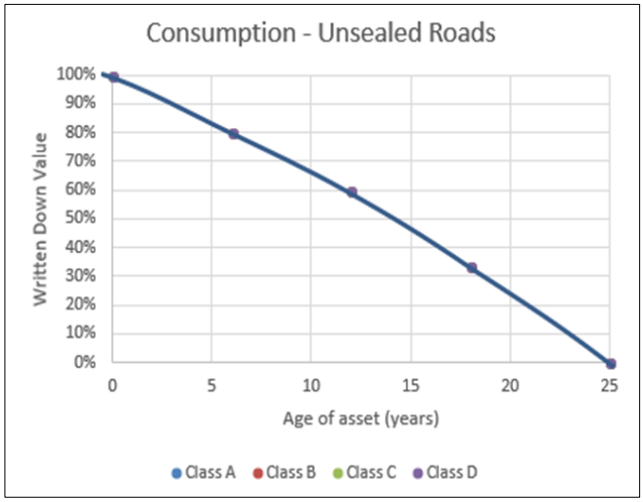
Table 5-15 Road network valuation summary, depreciation & consumption profiles

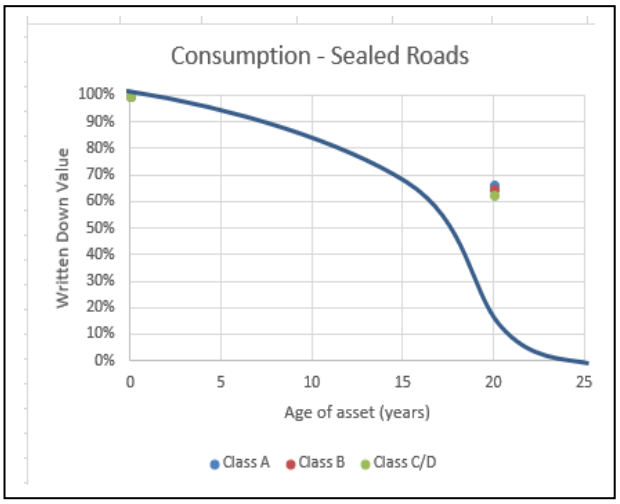
	Current Replacement Valuation	Fair value (Written Down Value)	Annual Depreciation
Regional Roads	$77,546,130	$68,855,677	$498,029
Urban Roads	$12,542,296	$10,853,892	$182,610
Rural Roads	$144,997,831	$126,330,751	$942,565
Village Roads	$3,054,932	$2,442,642	$55,727
Bridges – concrete, composite & timber	$69,919,656	$42,866,179	$806,384
Rural Culverts	$28,835,806	$17,372,139	$360,448
Causeways	$8,253,162	$4,356,090	$103,165
Footpaths & cycle ways	$2,505,140	$1,363,659	$34,371
Kerb and gutter	$3,953,592	$2,335,815	$49,420
Urban Stormwater	$9,096,902	$4,711,395	$113,711
Signs & furniture *	$1,110,886	$762,809	$16,985
Total Road Network	**$361,816,332**	**$282,251,048**	**$3,163,416**

From 'Valuation for Road Network Asset for TSC (Blue Sky 2015) pp 5, 22' (* From Shire records)

Road Asset depreciation rate (TSC: Accounts data base)	**3.33%**
Sealed road asset consumption rate (TSC: Accounts data base)	**Variable Parabola 25 years**
Unsealed road asset consumption rate (TSC: Accounts data base)	**Straight line 25 years**

From Shire accounts data base





From Shire accounts data base

The Fair Value (Written Down Value) has been determined as a function of each asset's condition, the pattern of consumption for each asset class and the replacement value. The cost to return the asset to 'as new' from a given condition has been calculated and then deducted from the replacement value to determine the Fair value.

Table 5-16 Road network expenditure forecast

Expenditure Forecast	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	$ x 1,000									
Asset Renewals	11,635	10,286	11,456	3,917	3,983	4,130	4,095	4,130	3,985	3,232
New Assets	552	643	654	666	598	609	622	634	645	660
Renewals & New	12,187	10,929	12,110	4,583	4,581	4,739	4,717	4,764	4,630	3,892
Maintenance & Operations	2,876	2,950	3,025	3,251	3,331	3,413	3,496	3,582	3,670	3,760

From Asset Management Strategy 2017-27 (TSC: 2017) p24

The Shire is currently renewing assets at lesser rate than they are being consumed each year and is not increasing the size of the asset base in any appreciable way.

To provide services in a financially sustainable manner is to ensure renewing assets is at the rate they are being consumed over the medium-long term. Funding the life cycle costs for all new assets and services is in the Long Term Financial Plan 2017-2017 (Circa: 2017).

5.2. Risk Management Plan

The risk assessment process in Figure 5-4 identifies the Shire's Risk Management Procedure. The Risk Matrix Table 5-17 is used to determine the likelihood of the risk event occurring with historical interpretation with the financial/environmental consequences providing an assessment outcome (1 -4).

Figure 5-4 Risk management process

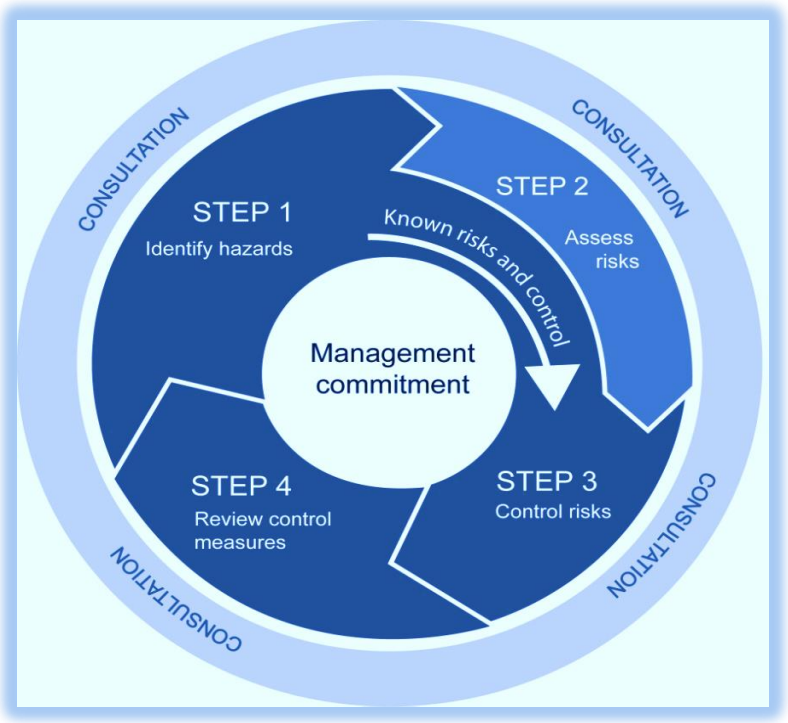


Table 5-17 Risk matrix

				CONSEQUENCE				
Step 1 – Consider the CONSEQUENCES ▪ What are the consequences of this event occurring? ▪ Consider what could reasonably happen with existing controls in place or if an incident has occurred. ▪ Consider what could have reasonably happened as well as what actually happened. ▪ Look at the **CONSEQUENCE** descriptions to the right and choose the most suitable.			**People**	Death or multiple life threatening injuries.	Life threatening injury or serious injuries causing hospitalisation.	Medical treatment required.	First Aid treatment required.	Injuries not requiring First Aid.
Step 2 – Consider the LIKELIHOOD ▪ What is the likelihood of the consequence identified in step 1 happening? ▪ Look at the **LIKELIHOOD** descriptions below and choose the most suitable.			**Environment**	Long term environmental damage.	Environmental damage with potential long term impact	Short term environmental impact.	Environmental impact controlled with existing procedures & equipment.	Minimal environmental impact.
Step 3 – Calculate the RISK ▪ Take the **CONSEQUENCE** rating (*Catastrophic - Insignificant*) and select the correct column. ▪ Take the **LIKELIHOOD** rating (*Almost Certain – Rare*) and select the correct row. ▪ Select the **RISK** rating where the two ratings cross on the matrix to the right.			**Financial**	or Greater than $100,000	or $50,000 to $99, 999	or $10,000 to $49,999	or <$1,500 to $9,999	or Less than $1,500
	Numerical:	**Historical:**		**Catastrophic**	**Major**	**Medium**	**Minor**	**Insignificant**
LIKELIHOOD	>1 in 10 Times	Incident is expected to occur in most circumstances.	**Almost Certain**	**4**	**4**	**4**	**3**	**3**
	1 in 10 Times	Incident will probably occur in most circumstances.	**Likely**	**4**	**4**	**3**	**3**	**3**
	1 in 100 Times	Incident could occur at some time.	**Possible**	**4**	**3**	**3**	**2**	**2**
	1 in 1,000 Times	Incident is not likely to occur in normal circumstances.	**Unlikely**	**3**	**3**	**3**	**2**	**2**
	1 in 10,000 Times	Incident may only occur in exceptional circumstances.	**Rare**	**3**	**3**	**2**	**2**	**1**

Assessment Outcome	
Very Low Risk (1):	No additional control measures necessary. Continue to monitor risk.
Low Risk (2):	Controls measures must be implemented to reduce risk.
Medium Risk (3):	Risk unacceptable; do not proceed without control measures, minimum of 'engineering control measures'.
High Risk (4):	Risk unacceptable; do not proceed without control measures, minimum of 'elimination or substitution control measures'.

Transfer the calculated risk of the hazard (1), (2), (3) or (4) to the risk assessment column on the Safe Work Method Statement

An assessment of risks using the Shire's Risk Matrix (Circa: 2015) Table 5-17 associated with road network asset service delivery has identified critical risks resulting in loss or reduction in service from the assets and potentially financially catastrophic to the Shire.

Critical risks are those assessed as 4 (catastrophic and possible) requiring immediate corrective action and 3 (major and possible) requiring prioritised corrective action are identified in Table 5-18.

Table 5-18 Critical risks and treatment plans

Service or Asset at Risk	What can Happen	Risk Rating (HR,MR)	Risk Control Plan	Associated Costs
Bridges	Gradual or sudden failure due to deteriorating condition	**4**	Identification of critical risk timber bridges, undertake essential maintenance or alternative cost effective techniques and/or reducing service as appropriate. Lobbying for additional funding for upgrades from appropriate sources	$30.0 Million
Regional Roads	Condition continues to deteriorate until road is unsafe for certain vehicle classes, or all vehicles.	**4**	Monitoring of condition and implementation of service restrictions as necessary. Lobbying for additional funding for upgrades from appropriate sources	$24 Million (AMS 2017-2017 p28)
Sealed Roads	Deterioration in sealed surface to the point the road becomes unsafe	**4**	Monitoring of condition whilst trying to hold and implementation of service restrictions as necessary or returning to gravel road. Lobbying for additional funding for upgrades from appropriate sources	$4.5 Million
Culverts and causeways	Low frequency ARI flooding events and heavy rainfall events	**3**	Prioritise upgrades to culverts and causeways at risk and design for the 100 yr ARI events	Not estimated

5.3. Routine Maintenance Plan

Routine maintenance is the regular on-going work necessary to keep assets operating, including where elements of the asset fail and require immediate repair to keep it performing and operational.

5.3.1. Maintenance plan

The Shire's network is managed using the Road Network Management Plan (Circa: 2013). This covers the road hierarchy, classifications, legislative and legal obligations, safety, inspections, risks, maintenance intervention standards, renewal requirements and enhancements. The assets include sealed and unsealed roads rural and urban, bridges, culverts, footpaths, verges and utilities.

Maintenance includes reactive, planned and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions. This maintenance occurs due to road failures, often after significant rainfall events.

Planned maintenance is repair work 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, improve maintenance and service delivery performance.

Specific maintenance is replacement of higher value components of assets undertaken on a regular cycle. This work generally falls below the capital and maintenance threshold but may require a specific budget allocation.

Details of Council's maintenance planning and response levels of service are included in the Road Network Management Plan. Projected maintenance expenditure as detailed in the Asset Management Strategy p24 is shown in Table 5-19. Current maintenance expenditure levels are considered to be inadequate to meet required service levels.

Future operations and maintenance expenditure is forecast to remain constant in real terms into the future. Maintenance is funded from the operating budget and grants where available.

Table 5-19 Maintenance expenditure trends

Year	Maintenance Expenditure
2017/18	$2,876,041
2018/19	$2,949,793
2019/20	$3,025,553
2020/21	$3,250,716
2021/22	$3,330,673
2022/23	$3,230,063
2023/24	$3,496,180
2024/25	$3,581,838
2025/26	$3,669,844
2026/27	$3,760,256

From Asset Management Strategy 2017-27 (TSC: 2017) p24

5.3.2. Standards and specifications

Maintenance work is carried out as guided by the Road Network Management Plan 2013 and the work follows the Australian Road Research Board (ARRB) - Sealed Local Roads Manual and Unsealed Roads Manual.

5.4. Renewal and replacement plan

Renewal 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 service potential. Work over and above restoring an asset to original service potential is upgrade or expansion and is new works expenditure.

5.4.1. Renewal plan

Assets requiring renewal are identified using the asset registers and most recent condition rating. The ranking criteria used to determine priority of identified renewal proposals is detailed at Table 5-20.

Table 5-20 Renewal priority ranking criteria

Criteria	Weighting
Current service level of asset requiring renewal and expected life, including safety considerations.	30%
User base	50%
Affordability	20%
Total	100%

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than its replacement cost. Examples of low cost renewal include:

- Resealing;
- Reclaiming gravel from the adjacent verges rather than resheeting;
- Using fit for purpose solutions that minimise timber replacements;
- Using reclaimed timber to add additional girders on timber bridges to lessen load carrying requirements, whilst lengthening the life of the existing structures, rather than ongoing labour intensive major component replacement;
- Retrofitting cut-off walls to causeways;
- Relaying sound pipework in culverts.

5.4.2. Renewal standards

Renewal work is carried out in accordance with the standards outlined in the RNMP 2013.

5.4.3. Summary of projected renewals

Projected future renewal expenditures are forecast to increase over time as the assets age. The forecast costs and available budgets are summarised in Figure 5-5.

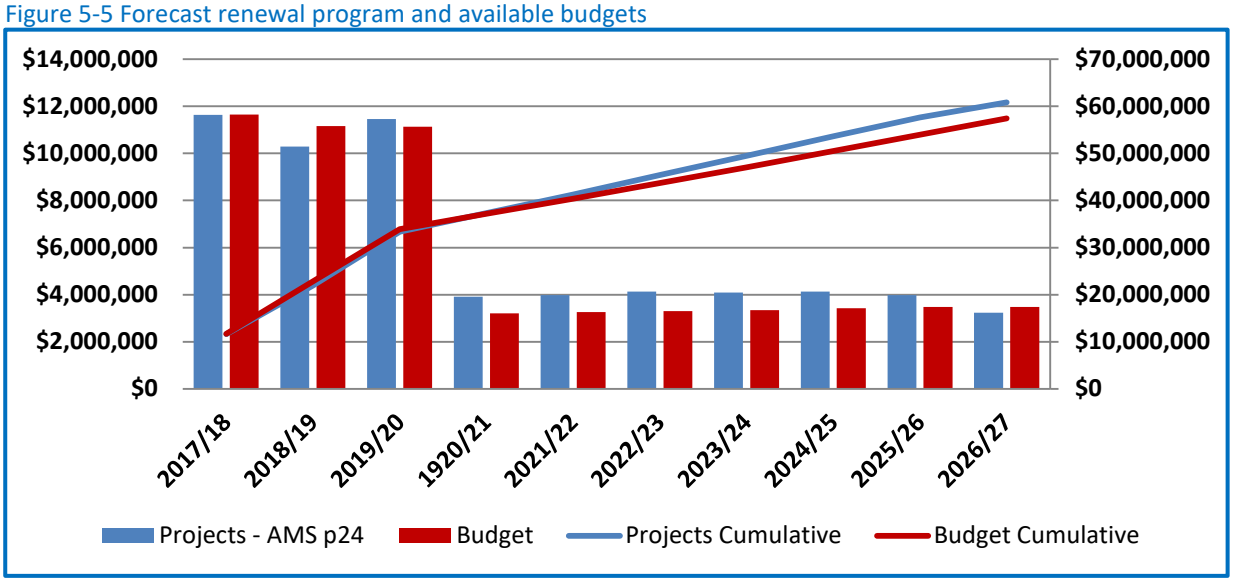
Note that all costs are shown in 2018 dollar values. The projected capital renewal program in strategic dollars is in the Asset Management Strategy 2017-27, with program requirements in the Delivery Program 2017-21 and details in the Operational Plan 2018/19.

The actual available funding for renewals is projected to decrease in line with inflation as funding for renewal like the Roads to Recovery program has not historically increased to compensate for the inflation. It also is noted the Federal Government funding of $24M for the renewal of Mount Lindesay Road is a significant boost to the Shire in addressing the substantial asset funding gap.

It is important to understand the renewal program as articulated in the Asset Management Strategy 2017-27 and Delivery Program 2017-21 is to complete works necessary to maintain existing levels of service, rather than projects funded using existing budgets. The difference in necessary renewal expenditure and available funding are further discussed in Section 6.

The great majority of the projected renewal expenditure is for the replacement of 58 timber bridges across the Shire. Without this significant cost, the funding shortfall for the renewal program would be much lower.

Figure 5-5 Forecast renewal program and available budgets



5.5. New works plan

New work is where a new asset is created and it 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 Shire from land development. These assets from growth are considered in Section 4.4.

As the Shire has insufficient resources for basic maintenance, the upgrade of assets is a very low priority unless specific funding from the State or Federal Government is available to support it. This is the case with the majority of road upgrade funding, which is focused towards the improvement of roads such as Mount Lindesay Highway, Bruxner Way and Amosfield Road.

5.5.1. Selection criteria

New assets and upgrade or expansion of existing assets are identified from various sources including community consultation, strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a business case. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5-21.

Table 5-21 Upgrade/new assets priority ranking criteria

Criteria	Weighting
Potential for economic / population growth	30%
User base	30%
Affordability	20%
Impact on other services	20%
Total	100%

5.5.2. Standards and specifications

Standards and specifications for new assets and for upgrade or expansion of existing assets are outlined in the RNMP 2013.

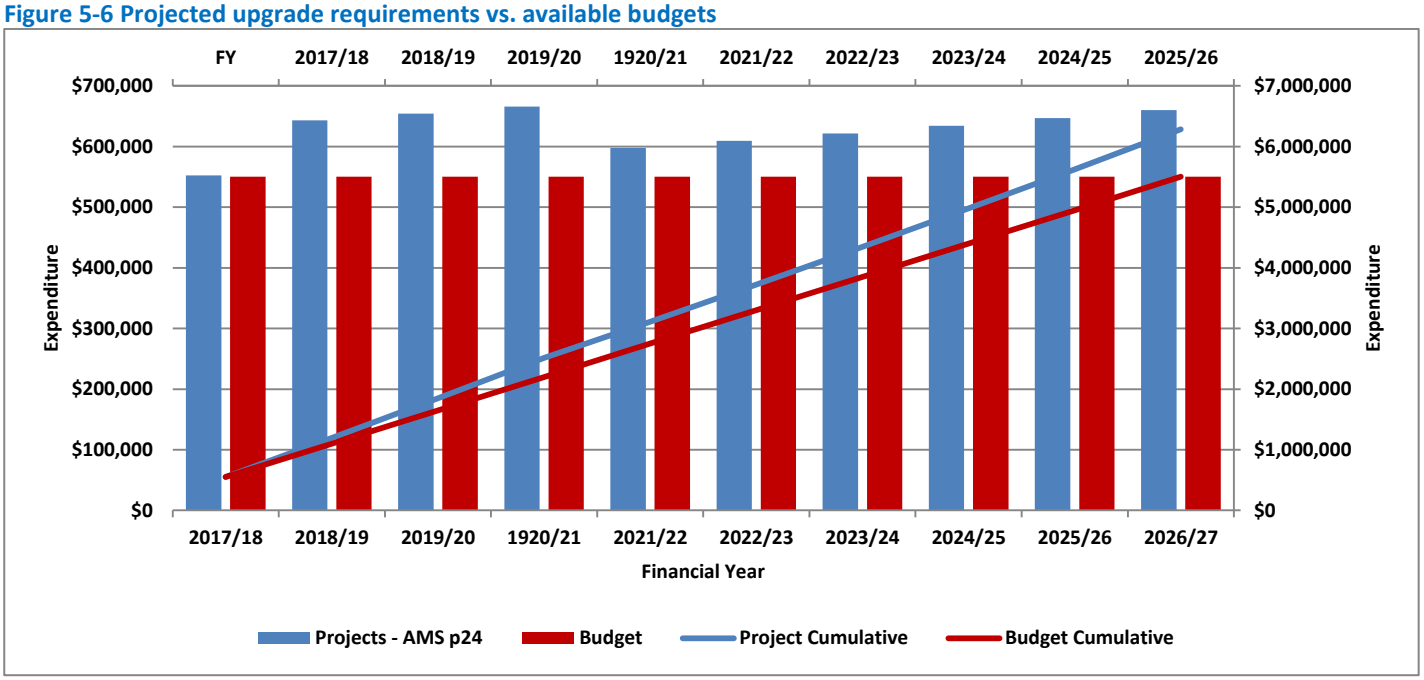
5.5.3. Summary of projected upgrade and new assets expenditure

Projected future upgrade expenditures are necessary to undertake four significant projects. These projects are the rebuilding and widening of Mount Lindesay Road from Legume to Woodenbong, sealing of the remaining sections of Mount Lindesay Road between Tenterfield and Legume, rebuilding and widening Tooloom Road, and realigning Bruxner Way from Sunnyside Loop Road to the New England Highway.

The Shire has been successful with a Federal Government Grant in the amount of $24M for the upgrade of Mount Lindesay Road from Legume to Woodenbong over a four year period commencing 2017/18. This is reflected in the expenditure forecast in Table 5-16 (p18 RNAMP- 2018).

It is important to understand the upgrade program as described in Appendix C is to complete works necessary to provide improvements to the existing levels of service in specific locations. For the rebuild and widening projects, it will not be possible to maintain the existing levels of service without these upgrades. The difference in necessary renewal expenditure and available funding are further discussed in Section 6.

Figure 5-6 Projected upgrade requirements vs. available budgets



New assets and services will only be funded from capital works program and grants, where available. This is further discussed in Section 6.2.

5.6. Disposal plan

Disposal is a decommissioned asset including sale, demolition or relocation. No assets have been identified as available for disposal at this time.

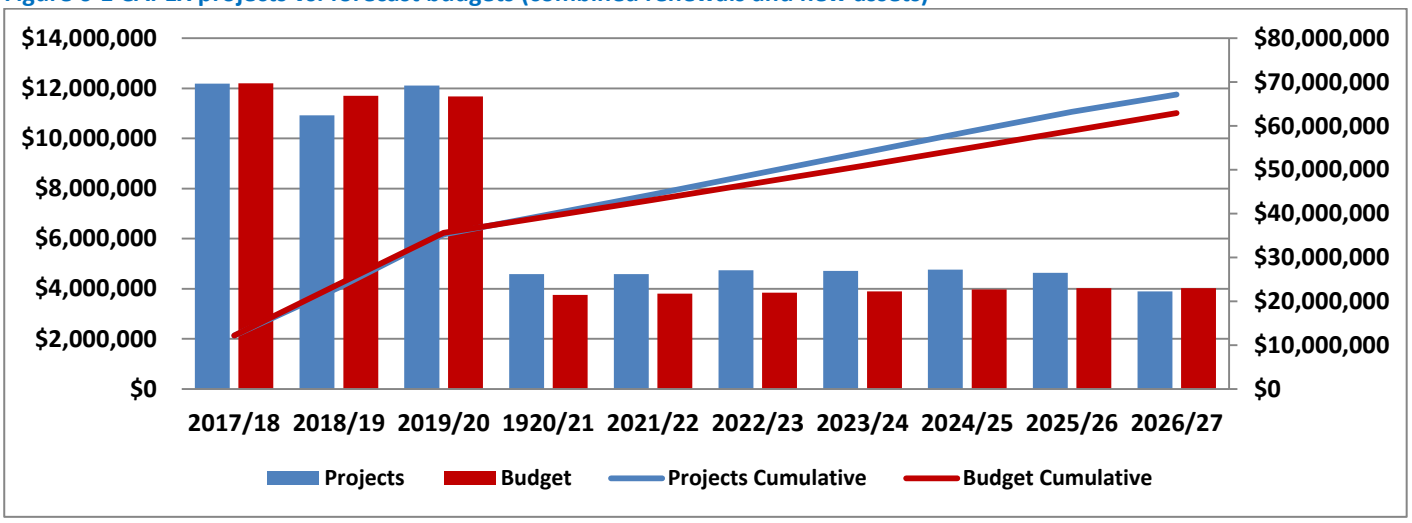
6. Financial summary

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 Figure 6-1 (for capital expenditure - renewal and upgrade/expansion/new assets - net disposal expenditure including estimated budget funding).

Figure 6-1 CAPEX projects vs. forecast budgets (combined renewals and new assets)



6.1.1. Financial sustainability in service delivery

There are key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Long term - life cycle cost

Life cycle costs are the average costs required to sustain the service levels over the longest asset life. 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 $7.148M in 2017/18 (operations and maintenance expenditure plus depreciation expense).

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. 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 at the start of the plan (2017/18) is $15.06M reducing to $7.83M (2020/21) and includes operations and maintenance expenditure plus budgeted capital renewal and new expenditure.

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by the asset management plan in 2015 was -$2.48 million per year in the first year. However, this has significantly improved with the injection of funding from the Federal Government for the reconstruction of Lindesay Road from Legume to Woodenbong over a four year period commencing 2017/18.

While this is good news for the Shire the budget challenges associated with assets with little value, which have significant unfunded renewal or upgrade costs still require urgent capital works, which are not considered in the sustainability model.

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 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 reiterates the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period as identified in the Asset Management Strategy 2017-27. This provides input into the 10 year Long Term Financial Plan aimed at providing the required services in a sustainable manner.

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 budgeted operations, maintenance and capital renewal expenditure anticipated over the 10 year planning period is an average of $10.05M per year. Refer to the AMS 2017 -27 p24.

Without the inclusion of the complete replacement of all timber bridges over the next 20 years, the estimated projected operations/maintenance, new asset projects and asset renewal funding required is $10.05M per year giving a 10 year funding shortfall of $350,000 per year and is marginally sustainable. The improvement in the analysis for the roads component has been due to the additional funding from the Federal Government for the renewal of Mount Lindesay Road.

With the timber bridges taken into account an additional $1.5M per year is required for this asset replacement program, taking the shortfall to $1.85M per year. This indicates the Shire's expenditures needed to provide the services documented in the asset management plan are not being meet unless there is an injection of funds from other sources.

Medium term – 5 year financial planning period

The projected budgeted operations, maintenance and capital renewal expenditure required over the 5 year planning period is an average of $11.965M per year.

Estimated projected operations, maintenance and capital renewal funding required $8.9M per year giving a 5 year funding shortfall of $175,175 per year and is potentially sustainable by adjusting other program delivery. This indicates the Shire's expenditures needed to provide the services documented in the asset management plan are not being meet unless there is an injection of funds from other sources.

The real risk is the forecast timber bridge replacement and rehabilitation program required to address this asset stock's deterioration. In this period between now and the next 5 years the Shire will need to find at least $3M of funds additional to the above to inject into temporary interim solutions for minimising the impact of timber bridge load limits. This is not currently funded and not allowed for in the LTFP 2017-27 projections and will need Federal and/or State government grants assistance. The alternative would be to impose long term economic burden on the Community until the timber bridges are replaced.

Financial sustainability indicators

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and funding to achieve financial sustainability ideally over the 10 year life of the AM Plan. Table 6-1 shows the shortfall between projected and budgeted renewals.

Table 6-1 Projected and budgeted renewals and expenditure shortfall

Financial Year	Projected Renewals ($1000)	Planned Renewal Budget ($1000)	Renewal Funding Shortfall ($1000)	Cumulative Shortfall ($1000)
2017/18	$11,635,638	$11,656,630	$20,992	$20,992
2018/19	$10,286,375	$11,155,087	$868,712	$889,704
2019/20	$11,456,494	$11,127,526	-$328,968	$560,736
2020/21	$3,917,007	$3,209,746	-$707,261	-$146,525
2021/22	$3,983,078	$3,253,727	-$729,351	-$875,876
2022/23	$4,130,571	$3,298,779	-$831,792	-$1,707,668
2023/24	$4,094,885	$3,344,928	-$749,957	-$2,457,625
2024/25	$4,129,949	$3,423,112	-$706,837	-$3,164,462
2025/26	$3,985,337	$3,471,594	-$513,743	-$3,678,205
2026/27	$3,232,128	$3,478,063	$245,935	-$3,432,270

From Asset Management Strategy 2017-27 (TSC: 2017) p24
A negative shortfall indicates a funding gap, a positive shortfall indicates a surplus for that year.

Providing services in a sustainable manner will require matching of projected asset renewals to meet agreed service levels with planned capital works programs and available revenue. A gap between projected asset renewals, planned asset renewals and funding indicates that further work is required 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.

6.2. Funding strategy

Projected expenditure identified in Section 6.1 cannot be funded from existing operating and capital budgets. Available funding will determine the extent to which the capital shortfall is addressed, and resultant required reductions in service levels that may result.

Without a substantial injection of funding from the State or Federal Governments through the funding programs available the Shire cannot sustain its asset service delivery.

6.3. Valuation forecasts

There is expected to be significant changes in the regional road network asset base with the upgrade of Mt Lindesay Road. However, the local roads projected capital upgrades are replacing existing assets of only moderately lower value. As a result, depreciation expenses are expected to remain relatively static for this asset class.

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 are:

- Residual values of road assets are achievable;
- Condition ratings in the existing data base are currently being audited to determine a degree of confidence in the authenticity of the condition ratings;
- The sample set of bridges used to assess the age profile is reflective of the wider asset base;
- The adopted standard life of assets have been reviewed to reflect industry averages;
- The asset consumption profiles adopted are to be modified to a straight line model;
- Additional funding will be required from the State and Federal Governments.

7. Asset management practices

7.1. Accounting/financial systems

7.1.1. Accounting and financial systems

The Shire uses Synergysoft, which is an integrated accounting, finance and records management system. Synergysoft was implemented in 2014.

7.1.2. Accountabilities for financial systems

The Chief Corporate Officer is responsible for the control of Council's accounting systems.

7.1.3. Accounting standards and regulations

Australia Accounting Standards (AASB116 & AASB136) local Government, code of accounting practice and financial reporting, Council's accounting policy, the local government Act (LGA) and regulations.

In accordance with asset capitalisation policy expenditure, which has benefit expected to last more than twelve month should be capitalised. Capital expenditure includes renewal, expansion and upgrade.

7.1.4. Capital and maintenance threshold

The aim of the capitalisation policy is to set a capitalisation threshold above which assets are required to be recorded by the Shire in its financial statements. The process for this is the capitalisation process and is achieved by the recording the capital cost of the acquisition of assets into Council's financial system and then into the asset management system.

Roads

Road assets are recognised as follows;

- Sealed surfaces (useful life 15 – 30 years)
- Sealed pavements (useful life 50 years)
- Unsealed pavement (useful life 25 years)
- Earthworks and formation are recognised but not depreciated

Work Activity			
Operations	**Maintenance & Repair**	**Capital Renewal**	**Capital New**
• Service delivery management including condition assessment, defect inspections. • Supervision • Pavement markings • Landscaping maintenance (inc. mowing, slashing, shrub clearing, etc.) • Culvert and table drain clearing	• Reactive maintenance and repair to road assets (pothole repair, washout repairs, guidepost replacement. • Programmed maintenance (preparation/patching for sealed road resurfacing, unsealed road grading) • Sealed pavement partial renewal/rehabilitation (heavy patching)	• Pavement replacement/renewal of main (whole) asset with same standard • Resurfacing with same standard • Gravel resheeting	• New assets • Pavement upgrade – renewal with higher standard • Resurfacing upgrade with higher standard • Land acquired for road works

- Resurfacings are recognised as a new asset and the old asset retired from the asset stock.
- Pavement renewal/rehabilitation/reconstruction (remove and replace) (complete asset) is recognised as a new asset and the old asset retired from the asset stock.
- Pavement low cost renewal (stabilisation, Tyne/add gravel and seal, etc of complete asset) is recognised as a new asset with the old asset revalued to recognize its residual value.
- Land under roads acquired after 1 July 2008 for roads is recognised as a new asset.

Bridges

Bridge assets are recognised at the following asset level (each item)

- Timber bridge (useful life ~ up to 50 yrs)
- Steel & concrete bridges (useful life ~ up to 80 yrs)

Work Activity

Operations	Maintenance & Repair	Capital Renewal	Capital New
• Service delivery, management • including condition assessment, defect inspection and management systems • Supervision • Cleaning and bridge related vegetation control • Utility costs	• Reactive maintenance to bridges • Program maintenance of bridges (repainting, etc) • Replacement of components (decks, beams, guard rails, with same standard, etc) < $15,000	• Replacement of bridge with the same standard • Replacement of components (decks, beams, guard rails, with same standard, etc)> $15,000.	• New assets • Upgrade asset (strengthening, widening, etc.)

- Bridge renewal (complete asset) is recognised as a new asset and the old asset retired from the asset stock.
- Bridge component renewal (partial asset) is recognised by adding the component replacement cost to the existing asset value and reviewing the remaining/useful life of the renewed asset to recognise the restored economic benefits to the entity.

Culverts and causeways (stormwater)

Stormwater drainage assets are recognised at the following asset level (each item)

- Pipe length (pipe reach between pits/access points) (useful life ~ 80 – 100 yrs)
- Pit/access point(useful life 50 yrs)
- Drainage structure (useful life 50 yrs)
- Lined & unlined open drains (useful life 80 yrs)
- Dams/retention basins (useful life 80 – 120 years)
- Pipelines – length between nodes (80-100 years)

Work Activity

Operations	Maintenance & Repair	Capital Renewal	Capital New
• Service delivery (including condition assessment, defect inspection and	• Reactive maintenance to drainage assets (pipe repair, pit repair and pit component	• Replacement of asset length of drainage pipeline at same standard	• New assets • Upgrade assets

drainage management system) • Supervision • Clearing drains and pits Utility costs	replacement, drainage structure repair • Programmed maintenance • Replacement of partial pipe length < $15,000	• Replacement of complete pit/structure • Replacement of partial pipe length > $15,000	
• Drainage pipeline renewal (complete asset) is recognised as a new asset and the old asset retired from the asset stock. • Drainage pit/access point/structure, pumps (complete asset) is recognised as a new asset and the old asset retired from the asset stock. • Drainage pipeline low cost renewal (relining, etc) (complete asset) is recognised • By adding the renewal cost to the existing asset and reviewing the remaining/useful life of the renewed asset to recognise the restored economic benefits to the entity. • Drainage pipeline renewal (partial asset) is recognized as a new asset and the old asset dimensions modified and revalued to recognise the partial renewal.			

Footpaths and cycle ways

Footpath assets are recognised at the following asset level (each item) • Paved surfaces(useful life ~ up to 50 yrs) • Unsealed surfaces (useful life 7-10 yrs)			
Work Activity			
Operations	**Maintenance & Repair**	**Capital Renewal**	**Capital New**
• Service delivery management including condition assessment, defect inspection and management system • Supervision • Footpath markings • Landscaping maintenance (inc. mowing, slashing, etc.) • Clearing footpath related drains and pits • Footpath cleaning, sweeping	• Reactive maintenance to footpath assets (pothole repair, joint grinding, segmental pavement resetting, footpath structure repair. • Programmed maintenance (paved footpath repair, footpath resurfacing preparation/patching, unsealed surface resurfacing) • Paved footpath partial renewal/replacement	• Resurfacing with same standard • Replacement of whole asset length of paved footpath at same standard	• New assets • Footpath upgrade-renewal with higher standard • Resurfacing upgrade with higher standard
• Footpath renewals (complete asset) are recognised as a new asset and the old asset retired from the asset stock.			

Kerb and gutter

Refer to the Stormwater Asset Management Plan (Circa: 2013) SWAMP

Signs and road furniture

Road & reserve assets (road furniture) are recognised at the following asset level (each item) • (useful life ~ 5 to 50 yrs)			
Work Activity			
Operations	**Maintenance & Repair**	**Capital Renewal**	**Capital New**
• Service delivery management including condition assessment, defect inspection and management systems. • Supervision • Cleaning • Utility costs	• Reactive maintenance • Programmed maintenance (painting, etc) • Replacement of furniture items		• New assets
• All new road & reserve furniture assets are recognised as new assets. • Replacement of road & furniture assets is expensed as maintenance. • Depreciated replacement value of road & asset furniture assets is held at 25% of replacement value.			

7.1.5. Required changes to accounting financial systems arising from this AM Plan

A harmonised asset management system is necessary to bring together the engineering asset management data base and the accounting system data base and this is overdue.

Currently there is inherent risk in differing financial indicators from the two systems with multiple staff involved with the management of the data systems creating confusion and inconsistencies. This will be managed over the next 2 years on filling staff vacancies and the use of one set of data by the Engineering and Finance teams.

7.2. Asset management systems

7.2.1. Asset management system

In the past the Shire utilised the Conquest Asset Management module of Authority's enterprise Business System provided by Civica. As a result of the change in the Shire's Business System from Authority to Synergy, asset information has slowly been integrated into Synergy. This is not complete as yet.

The Asset Management System is described in the Asset Management Strategy 2017-2027 (Circa: 2017). The system used by the Shire is the IPWEA International Infrastructure Manual System and the Asset Management for Small, Rural or Remote Communities Practice Note (IPWEA).

Council subscribes to NAMSPLUS3, which is the IPWEA initiative for LG to develop asset management planning and the templates have been used to develop the asset management plans.

7.2.2. Asset registers

Asset management registers are maintained in the N:\drive in the Engineering Department and are included in the RNAMP 2018 as appendices, with the exception of the Kerb and Gutter register, which is included with the Stormwater Asset Management Plan 2013 (SWAMP).

7.2.3. Linkage from asset management to financial system

The engineering asset management and accounting systems are not currently integrated with Synergy. Updating of data in Synergy from registers and independent valuations is manual, which needs to change.

7.2.4. Accountabilities for asset management system and data

The Accounting officer is responsible for updating the Synergysoft system. The Manager Asset & Project Planning is responsible for ensuring data in N:\drive Engineering Asset Registers is accurate and concords with those in Synergysoft.

7.2.5. Required changes to asset management system arising from this AM Plan

Improved integration of the Engineering Asset Registers and the asset management components managed by Finance is required. It is anticipated when the asset management module of Synergysoft is fully implemented there will be improved integration.

The Shire will need to ultimately invest in an automated predictive Asset Management System like that offered by SMEC to help interrogate asset data by optimising modelling of different funding scenarios and examining implications.

7.3. Information flow requirements and processes

The key information flows *into* this asset management plan are:

- The Integrated Planning & Reporting System
- The Shire's strategic and operational plans
- Service requests from the community
- Network assets information
- Updated condition surveys and interrogation of the overall asset data
- The frequent updates of unit rates for categories of work and materials
- Current levels of service, expenditures, service deficiencies and service risks
- Projections of various factors affecting future demand for services and new assets acquired
- Future capital works programs
- Financial asset values

The key information flows *from* this asset management plan:

- Underpin the Delivery Program 2017-2021
- Establish the programs within the annual Operational Plan
- The projected long term capital works programs
- The Long Term Financial Plan expenditure projections
- Financial sustainability indicators.

7.4. Strategies, standards and guidelines

Strategies, standards, guidelines and policy documents referenced in this Asset Management Plan are:

- Integrated Planning & Reporting Framework Office of Local Government
- Integrated Planning & Reporting Manual for Local Government In NSW -2013
- Community Engagement Strategy (TSC:2017)
- Community Strategic Plan 2017-2027 (TSC: 2017)
- Delivery Program 2017-2021 (TSC:2017)
- Operational Plan 2018-2019 (TSC:2018)
- Workforce Management Strategy 2017-2021(TSC:2017)
- Long Term Financial Plan 2017-2027 (TSC:2017)
- Tenterfield Shire Council Policy 1.014 – Asset Management
- Asset Management Strategy 2017-2027 (TSC:2017)
- Road Network Asset Management Plan (TSC- SB: 2015) now superseded
- Road Network Management Plan (TSC:2013)
- Valuation of Road Network Assets - Blue Sky (DG:2015)
- Stormwater Asset Management Plan (TSC: 2013)
- Asset Data Spreadsheets in N:\drive
- IPWEA International Infrastructure Manual System.
- International Infrastructure Management Manual (IIMM) - 2015

8. Plan improvement and monitoring

8.1. Performance measures

The effectiveness of the Road Network Asset Management Plan can be measured as follows:

- All elements of the current strategies and plans developed as part of the Shire's Integrated Planning and Reporting System are incorporated into this RNAMP 2018;
- The harmonisation of the cash flow analysis in this Plan into the Shire's Asset Management Strategy 2017-2027 and Long Term Financial Plan 2017-2027 as guided by the Community Strategic Plan 2017-2027;
- The validation of the delivery outputs of the annual Operational Plan and four year Delivery Program compared to the trends as forecast in this RNAMP 2018.

8.2. Improvement plan

The improvement plan is shown in Table 8-1.

Table 8-1 Improvement plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Complete the rewrite of the Road Network Asset Management Plan 2018	MAPP	Consultant	August 2018
2	Develop a roads audit process and documentation	MAPP	Asset Inspector	August 2018
3	Complete the road network condition audit of 47 roads (5% of network in classification)	Asset Inspector	Time/equipment	October 2018
4	Review the asset data base in line with the audit results	MAPP	Asset Inspector	June 2019
5	Update condition ratings for all bridges, urban stormwater systems, causeways, culverts, footpaths and kerbs/gutters and undertake inspections	MAPP Asset Inspector	Asset Inspector Works Manager Consulting staff	June 2019
6	Review 2019/2020 renewal program based on updated ratings	MAPP	Time	February 2019
7	Implementation of recommendations and actions for the Valuation of Road Network Assets for TSC p6 (Blue Sky: 2015)	MAPP	Consulting staff	September 2019
8	Provide an up to date 10 year Capex plan from 2020/2021 onwards based on updated condition ratings, predictive network modelling and road network hierarchy as per the RNMP 2018	MAPP	MAPP	December 2019

8.3. Monitoring and review procedures

This Road Network Asset Management Plan 2018 plan will be reviewed during the development of the annual Operational Plan and amended to recognise any changes in service levels and/or resources available to provide those services as a result of the annual budget decision process.

The RNAMP 2018 has a life of 4 years and is due for revision and updating at the time the four year Delivery Program reviewed.

9. References

- IPWEA, 2015, *International Infrastructure Management Manual*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au.
- IPWEA, 2008, *NAMS.PLUS Asset Management* Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/namsplus
- IPWEA, 2009, *Australian Infrastructure Financial Management Guidelines*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AIFMG.
- IPWEA, 2011, *Asset Management for Small, Rural or Remote Communities* Practice Note No. 4, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AM4SRRC.
- IPWEA, 2011, *International Infrastructure Management Manual*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au.
- Integrated Planning & Reporting Framework Office of Local Government http://www.olg.nsw.gov.au/councils/integrated-planning-and-reporting/framework
- Integrated Planning & Reporting Manual for Local Government in NSW -2013 http://www.olg.nsw.gov.au/councils/integrated-planning-and-reporting/framework

Following Tenterfield Shire documents can be found on:

https://www.tenterfield.nsw.gov.au/council/council-documents/plans-and-reports/integrated-planning-reporting-2018

- Community Engagement Strategy (TSC:2017)
- Community Strategic Plan 2017-2027 (TSC: 2017)
- Delivery Program 2017-2021 (TSC:2017)
- Operational Plan 2018-2019 (TSC:2018)
- Workforce Management Strategy 2017-2021(TSC:2017)
- Long Term Financial Plan 2017-2027 (TSC:2017)
- Asset Management Strategy 2017-2027 (TSC:2017)

Following Tenterfield Shire Council documents can be found as designated:

- Tenterfield Shire Council Policy 1.014 – Asset Management https://www.tenterfield.nsw.gov.au/council/council-documents/policies/policies-alphabetical-listing
- Road Network Asset Management Plan (TSC- SB: 2015) now superseded N:\03 Asset Management\01 Road Network
- Road Network Management Plan (TSC:2013) https://www.tenterfield.nsw.gov.au/council/council-documents/plans-and-reports
- Valuation of Road Network Asset Version 3 - Blue Sky (DG:2015) (Confidential Report)
- Stormwater Asset Management Plan (TSC: 2013) N:\03 Asset Management\02 Urban Stormwater
- Asset Data Spreadsheets in N:\drive

10. Appendices

Appendix A Projected 10 year Capital Renewal Works Program

Refer to:

- Asset Management Strategy 2017-27 (TSC: 2017)
- Long term Financial Plan 2017-27 (TSC: 2017)
- Program Delivery Program 2017-21 (TSC: 2017)

Project priorities and estimates to be checked after the procurement and implementation of a new asset management modelling system.

Appendix B Planned 10 year New Capital Works Programs

Refer to:

- Asset Management Strategy 2017-27 (TSC: 2017)
- Long term Financial Plan 2017-27 (TSC: 2017)
- Program Delivery Program 2017-21 (TSC: 2017)

Project priorities and estimates to be checked after the procurement and implementation of a new asset management modelling system.

Appendix C Abbreviations

Appendix D Glossary

10.1. Appendix A: Projected 10 year capital renewal works program

Project priorities and estimates to be checked after the procurement and implementation of a new asset management modelling system.

10.2. Appendix B: Planned 10 year new capital works program

Project priorities and estimates to be checked after the procurement and implementation of a new asset management modelling system.

10.3. Appendix C Abbreviations

AAAC	Average annual asset consumption
AMP	Asset management plan
ARI	Average recurrence interval
ARRB	Australian Roads Research Board
Austroads	The peak organisation of Australasian road transport and traffic agencies
CRC	Current replacement cost
DA	Depreciable amount
EF	Earthworks/formation
IIMM	International Infrastructure Management Manual
IPWEA	Institute of Public Works Engineering Australasia
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
MMS	Maintenance management system
NAASRA	National Australian Association of State Road Authorities
PCI	Pavement condition index
RNMP	Road network management plan
RNAMP	Road network asset management plan (this plan)
RV	Residual value
SWAMP	Stormwater asset management plan
TSC	Tenterfield Shire Council
vph	Vehicles per hour

10.4. Appendix E 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 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 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.

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.

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

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.

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.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arm's length transaction.

Funding gap

A funding gap exists whenever an entity has insufficient capacity to fund 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 funding gap means service levels have already or are currently falling. A projected funding gap if not addressed will result in a future diminution of existing service levels.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleway. 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

Total LCC The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.

Average LCC The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises annual operations, maintenance and asset consumption expense, represented by depreciation expense. 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 actual or planned annual operations, maintenance and capital renewal expenditure incurred in providing the service in a particular year. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of life cycle sustainability.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to its original condition, including regular ongoing day-to-day work necessary to keep assets operating, e.g. 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.

- Significant 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 and renewal gap

Difference between estimated budgets and projected required expenditures for maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Maintenance and renewal sustainability index

Ratio of estimated budget to projected expenditure for maintenance and renewal of assets over a defined time (e.g. 5, 10 and 15 years).

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 e.g. the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operations expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, e.g. 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.

Pavement management system

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

A measure of average annual consumption of assets (AAAC) expressed as a percentage of the depreciable amount (AAAC/DA). Depreciation may be used for AAAC.

Rate of annual asset renewal

A measure of the rate at which assets are being renewed per annum expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade

A measure of the rate at which assets are being upgraded and expanded per annum 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.

Renewal sustainability

The proportion of the annual depreciation expense that is covered by renewal of assets = Renewal Expense / Annual Depreciation Cost.

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, e.g. 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).

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.

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, cycle, 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.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

(a) the period over which an asset is expected to be available for use by an entity, or

(b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the council.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.


creating a living environment