

2017/18

TRANSPORT
ASSET MANAGEMENT PLAN



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The Institute of Public Works Engineering Australasia.

www.ipwea.org/namsplus

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1. EXECUTIVE SUMMARY

What is the purpose of the plan?

This asset management plan sets out the level of service the Wagga Wagga City Council provides the community in relation to the transport network. It uses financial information and technical asset data compared with the service levels to identify funding shortfalls associated with managing the assets.

What does the plan cover?

The following assets are included in this plan.

Asset category	Number/Length	Replacement Value (\$)
Bridges and footbridges	93	\$44,285,123
Carparks	71	\$13,660,285
Culverts	3,208	\$33,078,847
Footpath and shared paths	530 km	\$29,549,630
Kerb and gutter	702 km	\$41,692,748
Sealed Roads - seal	1,183 km	\$87,392,198
Sealed Roads - pavement	1,183 km	\$380,049,468
Sealed Roads – formation	1,183 km	\$209,296,084
Unsealed Roads – pavement	1,099 km	\$33,735,075
Unsealed Roads – formation	1,099 km	\$17,486,506

What does it cost?

The total cost to maintain the network and renew and upgrade assets identified in the plan is estimated to be \$298,230,715 over the next 10 years (based on unit rates developed in the 2015 revaluation of roads assets and an internal review of required maintenance costs in 2017). This includes the following:

- \$6,624,222 to maintain bridges,
- \$324,800 to condition rate bridges,
- \$1,073,195 to maintain carparks,
- \$41,553,217 to maintain culverts,
- \$3,331,436 to maintain footpaths and shared paths,
- \$59,195,478 to maintain sealed roads,
- \$750,000 to condition rate sealed roads,
- \$28,089,240 to maintain unsealed roads,
- \$9,369,100 to renew bridges,
- \$1,268,215 to renew carparks,
- \$6,602,960 to renew culverts,
- \$1,170,698 to renew footpaths and shared paths,
- \$5,366,342 to renew kerb and gutter,
- \$86,000,000 to renew sealed roads pavement,
- \$18,799,762 to renew sealed roads seal,

- \$18,112,050 to renew unsealed roads, and
- \$10,600,000 for a new bridge.

What is the challenge?

Wagga Wagga City Council is like many local governments; it manages assets on behalf of the community worth in excess of a billion dollars. There is an ever increasing emphasis on local governments to provide the community with services needed in a financially sustainable manner. The challenge for local government is there are limited finances and assets are ageing, requiring replacement and there is continuous demand for new and enhanced services and assets.

What is the budget?

The following table shows how much funding is available in the Long Term Financial Plan compared to the estimated cost of managing the assets (based on 2015 unit rates) to meet the service levels identified in this Plan.

Activity	Funding Level
Maintain bridges	28%
Condition rate bridges	0%
Maintain carparks	39%
Maintain culverts	9%
Maintain footpaths and shared paths	95%
Maintain sealed roads	93%
Condition rate sealed roads	100%
Maintain unsealed roads	52%
Renew bridges	0%
Renew carparks	0%
Renew culverts	97%
Renew footpaths and shared paths	0%
Renew kerb and gutter	98%
Renew sealed road pavement	54%
Renew sealed road seal	104%
Renew unsealed roads	99%
New bridge	100%

What is Wagga Wagga City Council doing?

Council will continue to:

- maintain, renew and upgrade transport assets to meet service levels set by annual budgets,
- deliver the current level of maintenance across the transport infrastructure network, and
- prioritise the renewal of existing transport assets based on condition data and the budgets in the Long Term Financial Plan.

What are the consequences?

There are maintenance and capital activities unable to be undertaken within the next 10 years given the current budgets. They are:

- maintain bridges, carparks, culverts and unsealed roads to the levels identified in this plan,
- condition rate bridges, and
- renew bridges, carparks, footpaths and shared paths, and sealed road pavement as identified as required in this plan.

What is the next step?

The next important step is to develop solutions for the renewal and maintenance funding shortfalls for transport assets.

Questions you may have

What is an Asset Management Plan?

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

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

What is this plan about?

This asset management plan covers the transport infrastructure assets which support the community with their access and transport needs. These assets include bridges, carparks, culverts, footpaths and shared paths, kerb and gutter, sealed roads and unsealed roads across the local government area, including at Council facilities and in open spaces and parks.

What options do we have?

Resolving the funding shortfall involves several options.

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

What happens if we don't manage the shortfall?

It is likely that we will have to reduce service levels in some areas unless new sources of revenue are found. For transport assets, the service level reduction may include not remediating assets in condition 4 and 5, postponing upgrades which would increase the capacity of the network or not making improvements to the infrastructure. It could also lead to a higher costs associated with managing the network as renewal will be required, rather than maintenance.

What can we do?

We can develop options, costs and priorities for future transport infrastructure assets. We can consult with the community to plan future services to match the community service needs with the ability to pay for services and maximise community benefits against costs.

What can you do?

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

Glossary

Annual service cost (ASC)

- 1) Reporting actual cost
The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
- 2) For investment analysis and budgeting
An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future

operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

Cost of an asset

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

Critical assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than noncritical assets.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Deferred maintenance

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

Expenses

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

Fair value

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

Financing gap

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

Heritage asset

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

Impairment Loss

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

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost *

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure

The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**
Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.
- **Reactive maintenance**
Unplanned repair work that is carried out in response to service requests and management/ supervisory directions.
- **Specific maintenance**
Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.
- **Unplanned maintenance**
Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is

capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques.

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

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

Operations

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

Operating expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense

The gross outflow of economic benefits, being cash and non cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operating expenses

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio

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

Operations, maintenance and renewal gap

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of annual asset renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *

A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

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

Value in Use

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

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *

2. INTRODUCTION

Community Strategic Plan

The vision for the future from the Community Strategic Plan 2040 is “in 2040 Wagga Wagga will be a thriving, innovative, connected and inclusive community on the Murrumbidgee. Rich in opportunity, choice, learning and environment. Wagga is a place where paths cross and people meet.”

To ensure we achieve this community vision, we need to begin to embed elements of it in today’s planning. Four key words have been chosen by the community to be used as guiding principles in planning for our future. These four principles are – Thriving, Innovative, Connected and Inclusive.

In the Community Strategic Plan the community came up with a number of priorities which are really important. These have been categorised into 5 strategic directions for the city. Asset management fits into the environment strategic direction and relates to the objectives of:

- we plan for the growth of the city, and
- we create and maintain a functional, attractive and health promoting environment.

This Asset Management Plan relates to the outcomes of:

- we have sustainable urban development, and
- we create and maintain a functional, attractive and health promoting built environment.

The strategies from the Community Strategic Plan addressed in this asset management plan are:

- provide and maintain appropriate infrastructure and services that support current and future needs,
- maintain infrastructure assets, and
- implement asset management planning.

Fit for the Future

A Fit for the Future council is one that is:

- sustainable,
- efficient,
- effectively manages infrastructure and delivers services for communities, and
- has the scale and capacity to engage effectively across community, industry and government.

IPART in October 2015 deemed the Wagga Wagga City Council ‘fit for the future’ as a stand-alone council, based on the actions and strategies identified in Council’s improvement proposal submitted to IPART in June 2015. The action plan outlines how Council is committed to a number of key improvement strategies to meet five of the benchmarks and trend towards the remaining two benchmarks by 2019/20. The improvement proposal can be accessed online at www.wagga.nsw.gov.au/fitforthefuture.

The key improvement strategies have included targeted efficiency (service) reviews of \$800,000 annually and increased revenue targets of \$300,000. Council will direct these funds towards the renewal of infrastructure and maintenance of assets, which will assist in reducing the infrastructure backlog.

A key consideration in Council’s decision-making as part of this improvement plan is the ongoing commitment to improving our financial position and sustainability. This includes maintaining and improving the working funds result as well as achieving a balanced or preferably a surplus budget each financial year.

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate the funding required to provide the necessary levels of service over a 10 year planning period.

The asset management plan follows the format for asset management plans recommended in Section 4.2.6 of the International Infrastructure Management Manual¹.

The infrastructure assets covered by this asset management plan are shown in Table 1. The replacement value is based on unit rates developed in the 2015 revaluation of roads assets.

Table 1: Assets covered by this Plan

Asset category	Number/Length	Replacement Value (\$)
Bridges and footbridges	93	\$44,285,123
Carparks	71	\$13,660,285
Culverts	3,208	\$33,078,847
Footpath and shared paths	530 km	\$29,549,630
Kerb and gutter	702 km	\$41,692,748
Sealed Roads - seal	1,183 km	\$87,392,198
Sealed Roads - pavement	1,183 km	\$380,049,468
Sealed Roads – formation	1,183 km	\$209,296,084
Unsealed Roads – pavement	1,099 km	\$33,735,075
Unsealed Roads – formation	1,099 km	\$17,486,506
TOTAL		\$890,225,964

Source: Wagga Wagga City Council’s asset register December 2016 and Wagga Wagga City Council General Purpose Financial Statements for the year end 30 June 2016

2.2 Goal of Asset Management

The Wagga Wagga City Council exists to provide services to its community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by ‘purchase’, by contract, construction by Council and by dedication of assets constructed by developers and others, to meet increased levels of service.

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

- providing a defined level of service and monitoring performance,
- managing the impact of growth through demand management and infrastructure investment
- taking a whole of life lifecycle approach to developing cost-effective management strategies for the long-term, that also meet the defined level of service,
- identifying, assessing and appropriately controlling risks, and
- having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.²

2.3 Plan Framework

Key elements of the plan are:

- levels of service – specifies the services and levels of service to be provided by the organisation,
- future demand – how this will impact on future service delivery and how this is to be met,
- life cycle management – how Council will manage its existing and future assets to provide defined levels of service,
- financial summary – what funds are required to provide the defined services,

¹ IPWEA, 2011, Sec 4.2.6, *Example of an Asset Management Plan Structure*, pp 4 | 24 – 27.

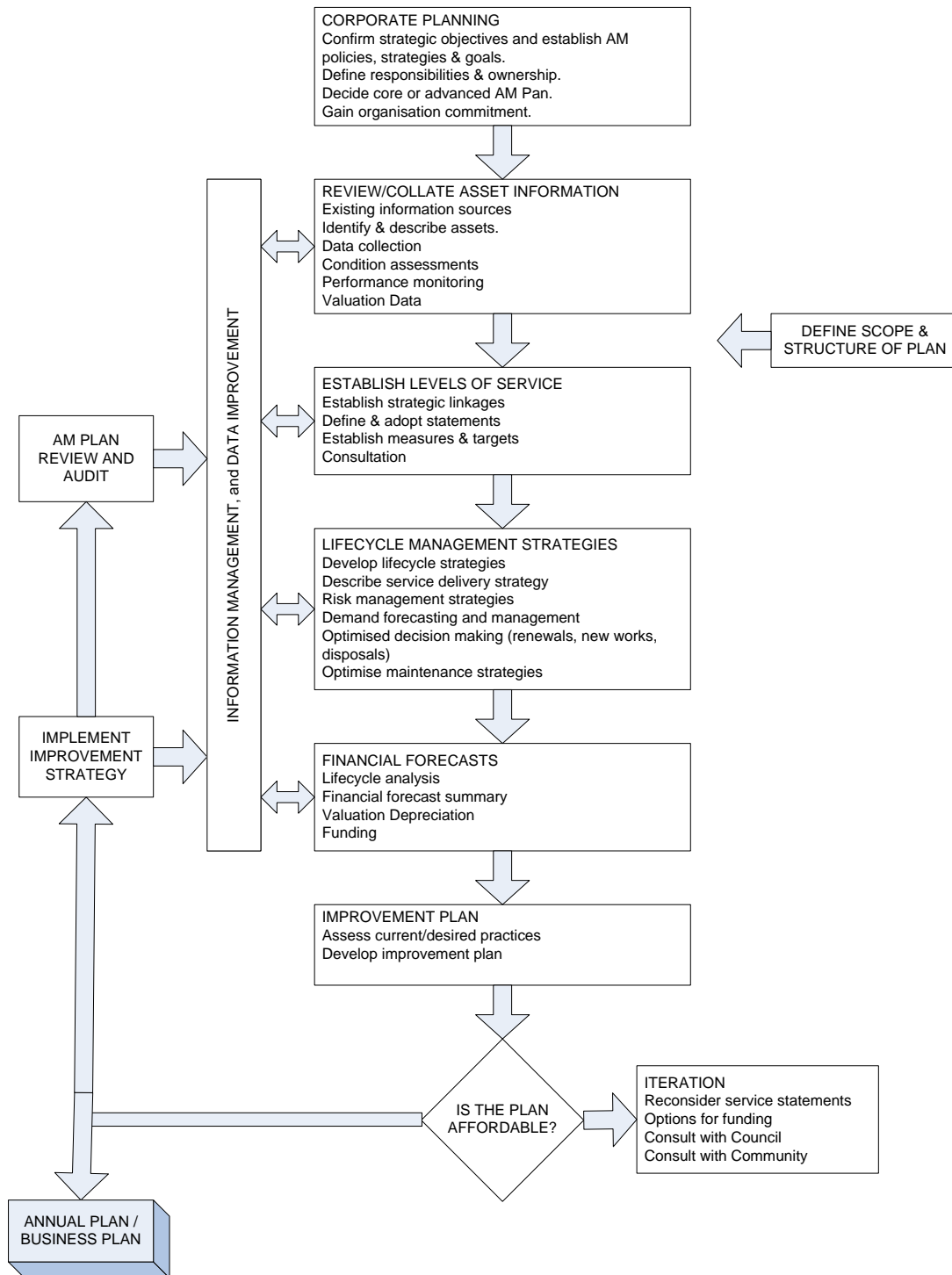
² Based on IPWEA, 2011, IIMM, Sec 1.2 p 1 | 7.

- asset management practices,
- monitoring – how the plan will be monitored to ensure it is meeting the organisation’s objectives, and
- asset management improvement plan.

A road map for preparing an asset management plan is shown in Figure 1 below.

Figure 1: Road Map for preparing an Asset Management Plan

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



2.4 Community Consultation

During the community consultation for the Community Strategic Plan in 2016 we heard about the importance of managing the road network from people who participated. People told us that the following issues are important to them and require Council’s attention:

- footpath maintenance and trip hazards,
- availability of carparking,
- maintenance of sealed roads (including rural roads), particularly the patching of potholes,
- pedestrian access in the CBD, and
- rough roads.

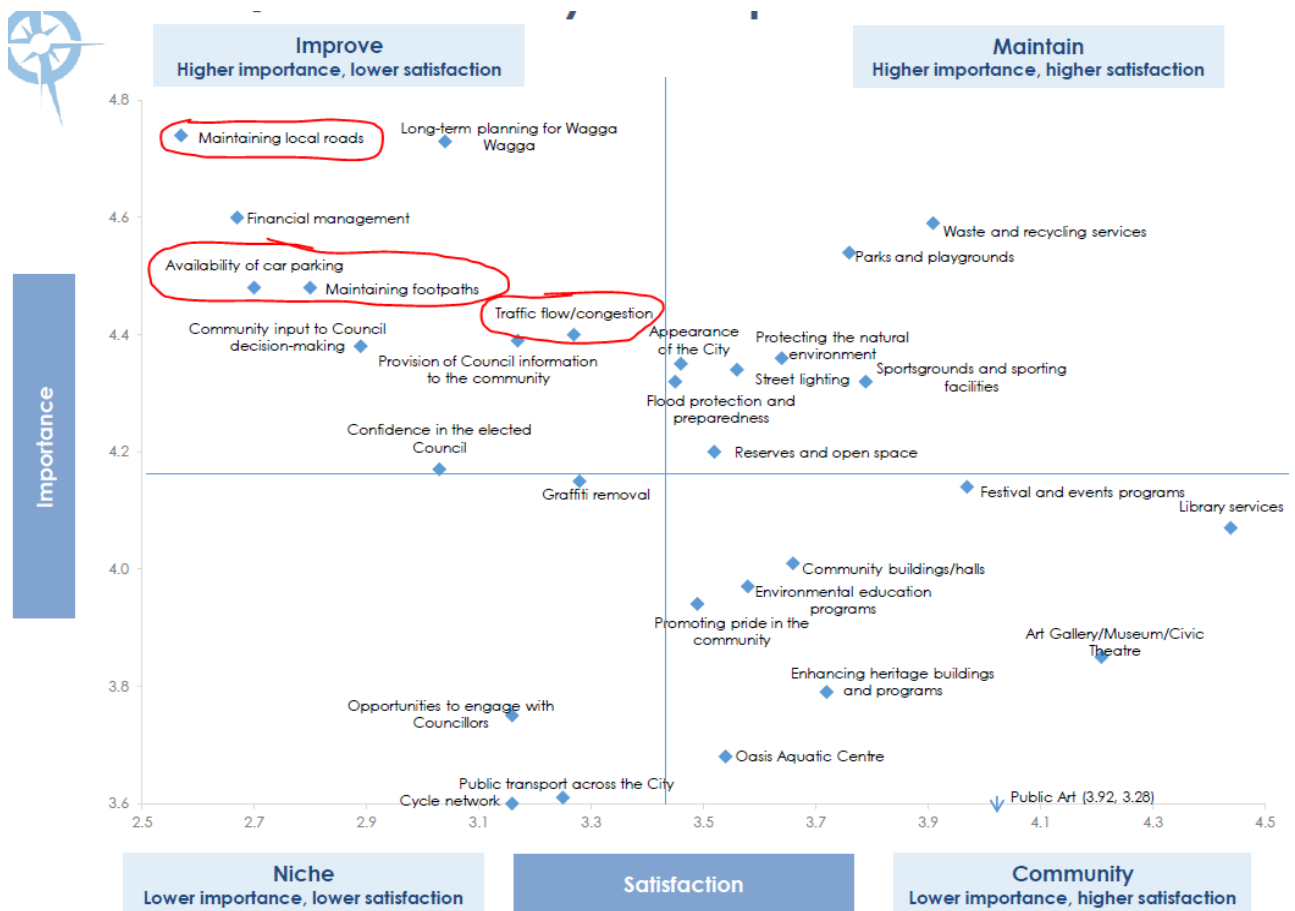
3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Wagga Wagga City Council has conducted local government satisfaction surveys since 2006. This telephone survey samples residents on the levels of satisfaction with Council services and their importance. The results are then interpreted into a quadrant analysis. The quadrant analysis is a useful tool for planning future directions. It combines the stated needs of the community and addresses Council’s performance in relation to these needs.

Figure 2 below is from the 2015 survey. It highlights, road and footpath maintenance, provision of carparks and traffic flow and congestions are rated in the highest importance/lower satisfaction quadrant.

Figure 2: Quadrant Analysis from community survey, importance vs satisfaction



Source: http://www.wagga.nsw.gov.au/__data/assets/data/pdf_file/0010/38944/Report-Wagga-Wagga-Community-15-11-23.pdf

Points worth noting for transport infrastructure assets from the previous surveys are as follows:

2012	<ul style="list-style-type: none"> • Maintenance of sealed roads was a priority for the community • Maintenance of unsealed roads was important to the community • Maintenance of footpaths was a priority for the community
2010	<ul style="list-style-type: none"> • The condition of urban roads was important to the community • The community rated their satisfaction with the management of sealed and unsealed roads as low
2009	<ul style="list-style-type: none"> • Urban road maintenance was important to the community • The community had a low satisfaction with the management of footpaths and rural roads
2006	<ul style="list-style-type: none"> • Urban roads were important to the community • The community rated their satisfaction level as low for rural roads

3.2 Community Levels of Service

Service levels are defined service levels in two terms, customer levels of service and technical levels of service.

Community levels of service measure how the community receives the service and whether the organisation is providing community value.

The community levels of service measure used in this asset management plan is condition, how good is the service. The condition of assets is rated and applied as described below.

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

The Wagga Wagga City Council target community service levels are detailed in Table 3 below.

Table 3: Community Level of Service

Service Attribute	Service Objective	Performance Measure Process	Current Performance of Total Network
COMMUNITY OUTCOMES			
Maintain infrastructure assets			
COMMUNITY LEVELS OF SERVICE – Vehicular bridges			
Condition	Bridges in condition 4 or 5 are replaced as planned	Condition assessment 2011	Condition 1 = 9% Condition 2 = 58% Condition 3 = 26% Condition 4 = 5% Condition 5 = 2%
COMMUNITY LEVELS OF SERVICE – Footbridges			
Condition	Footbridges in condition 4 or 5 are replaced as planned	Condition assessment 2012/13	Condition 1 = 7% Condition 2 = 62% Condition 3 = 28% Condition 4 = 3% Condition 5 = 0%
COMMUNITY LEVELS OF SERVICE – Carparks			
Condition	Carparks in a condition 4 or 5 are renewed as planned	Condition assessment 2014/15	Condition 1 = 17% Condition 2 = 25% Condition 3 = 30% Condition 4 = 17% Condition 5 = 11%
COMMUNITY LEVELS OF SERVICE – Culverts			
Condition	Culverts in condition 4 or 5 are replaced as planned	Condition assessment 2012/13, with 833 in 2012/13	Condition 1 = 9% Condition 2 = 50% Condition 3 = 29% Condition 4 = 9% Condition 5 = 3%
COMMUNITY LEVELS OF SERVICE – Footpaths and shared paths			
Condition	Footpaths and shared paths in a condition 4 or 5 are renewed as planned	Last condition inspection 2012/13	Condition 1 = 15% Condition 2 = 13% Condition 3 = 36% Condition 4 = 32% Condition 5 = 4%
COMMUNITY LEVELS OF SERVICE – Kerb and gutter			
Condition	Kerb and gutter in a condition 4 or 5 are replaced as planned	Condition assessment 2014/15	Condition 1 = 19% Condition 2 = 30% Condition 3 = 38% Condition 4 = 11% Condition 5 = 2%
COMMUNITY LEVELS OF SERVICE – Sealed roads			
Condition - seal	The sealed roads seal (or wearing surface) in condition 4 or 5 are renewed as planned	Condition assessment 2014/15	Condition 1 = 29% Condition 2 = 23% Condition 3 = 15% Condition 4 = 14% Condition 5 = 19%
Condition – pavement	The sealed roads pavement in condition 4 or 5 are renewed as planned	Condition assessment 2014/15	Condition 1 = 9% Condition 2 = 16% Condition 3 = 36% Condition 4 = 26% Condition 5 = 13%

Service Attribute	Service Objective	Performance Measure Process	Current Performance of Total Network
COMMUNITY LEVELS OF SERVICE – Unsealed roads			
Condition	Unsealed roads in condition 4 or 5 are re-sheeted as planned	Condition assessment July 2016	Condition 1 = 14% Condition 2 = 61% Condition 3 = 2% Condition 4 = 7% Condition 5 = 16%

Source of condition data: Wagga Wagga City Council asset register January 2017

3.4 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 Council undertakes to best achieve the desired community outcomes.

Technical service measures are linked to annual budgets covering:

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

Table 4 shows the technical levels of service targets, the methodology we will use to measure our performance, the current performance and funding levels of these targets based on the Long Term Financial Plan 2017/18 compared to the estimated required budget to meet the service levels. The estimated required maintenance budget was reviewed by internal stakeholders in 2017 and the required renewal budgets are based on unit rates developed in the 2015 revaluation of roads assets.

Table 4: Technical Levels of Service

Service Attribute	Service Objective	Activity Measure Process	Current Performance	Estimated Required Budget*	Current Budget as per Long Term Financial Plan June 2017**	Current Funding Ratio (Current Budget/Required Budget)
Maintenance - bridges	Maintain bridges across the network	Conduct condition assessment and structural testing as scheduled Conduct minor maintenance, vegetation control, painting, delineation, guardrail maintenance and sign replacement	Bridge inspections undertaken as per schedule Annual rolling program and reactive maintenance program currently in place	\$6,624,222 for 10 years	\$1,827,045 for 10 years	28% funded
	Conduct Level 3 condition assessments of the bridge network	Level 3 condition assessments conducted	64 bridges identified for assessment	\$324,800	\$0	0% funded
Maintenance – carpark	Maintain all carpark managed by Council	Replace line marking every 5 years Replace 50 carpark signs per year Conduct grading, fettling, pothole patching and sweeping of each car park once per year.	Annual rolling program	\$1,073,195 for 10 years	\$415,120 for 10 years	39% Funded
Maintenance - culverts	Maintain culverts across the local government area	Clean culverts every 2 years Vegetation maintained twice per year Conduct minor repairs as identified	288 culverts inspected and cleaned in 2016 Reactive maintenance program	\$41,553,217 for 10 years	\$3,585,397 for 10 years.	9% funded
Maintenance - footpaths and shared paths	Maintain footpaths and shared paths to provide pedestrian linkages	Grind 4.4km of trip hazards per year Repair 2.5km of trip hazards with hotmix per year Clean 19,856m ² pavers per year Patch 10m ³ of potholes per year Reshape shared paths every two years Conduct vegetation control, fettling, minor repairs pavers, shot blasting pavers	4.4km of grinding in 2015/16 8m ³ of potholes patched in 2015/16 Reactive maintenance program	\$3,331,436 for 10 years.	\$3,178,421 for 10 years.	95% funded

Service Attribute	Service Objective	Activity Measure Process	Current Performance	Estimated Required Budget*	Current Budget as per Long Term Financial Plan June 2017**	Current Funding Ratio (Current Budget/Required Budget)
Maintenance - sealed roads	Maintain sealed roads across the network	Mini stabilising 7800m ² /year Pothole patching 1,989m ² /year Crack sealing 20km/year Tree pruning Annually Guardrail maintenance 8/ year Sweeping 314km/year Weed spraying 428km/year Slashing 428km/year Sapling control 857km/year Guide posts replacement 1,750/year Shoulder grading (arterial regional and urban areas without kerb and gutter) 323km/2 years Drainage reshaping (arterial regional and urban areas without kerb and gutter) 323km/2 years Shoulder grading (sub arterial and collector roads outside urban area) 292km/3 years Drainage reshaping (sub arterial and collector roads outside urban area) 292km/3 years Shoulder grading (all other sealed roads outside the urban area)243km/4 years Drainage reshaping (all other sealed roads outside the urban area) 243km/4 years Sign replacement on urban sealed roads 1,310/year Sign replacement on rural sealed roads 185/year	Grading 50km shoulders per year Table drains are not currently maintained Annual rolling program	\$59,195,478 for 10 years	\$54,812,163 for 10 years	93% funded
		Measure the condition of the sealed road network every 3 years	Condition assessment 2014	\$750,000 for 10 years	\$750,000 for 10 years	100% funded
Maintenance - unsealed roads	Maintain unsealed roads across the network	Grade 1,278km road per year Maintain 1,278km table drains per year Slash and spray network twice per year Control saplings across the network once per year Replace 2,250 guideposts per year Maintain guardrails Replace 375 signs per year Conduct pothole patching Visual assessment yearly	Grade 300km of road per year Annual rolling program Reactive maintenance program Annual inspection	\$28,089,240 for 10 years	\$14,551,233 for 10 years	52% funded

Service Attribute	Service Objective	Activity Measure Process	Current Performance	Estimated Required Budget*	Current Budget as per Long Term Financial Plan June 2017**	Current Funding Ratio (Current Budget/Required Budget)
Renewal – bridges	Remediate bridges in condition 4 and 5	Condition 4 and 5 bridges scheduled for renewal	Prioritised renewal list developed (26 bridges identified in the list)	\$9,396,100 for 10 years	\$0	0% funded
Renewal – carparks	Renew carparks with surfaces in condition 5	Carparks with surface condition rated as 5 from across the network scheduled for renewal	Prioritised renewal list developed (8 carparks identified in the list)	\$1,268,215 for 10 years	\$0	0% funded
Renewal – culverts	Renew culverts in condition 4 and 5	Culverts in condition 4 and 5 scheduled for renewal	Prioritised renewal list developed (739 culverts identified in the list)	\$6,602,960 for 10 years	\$6,426,907 for 10 years	97% funded
Renewal – Footpaths and Shared paths	Footpaths and shared paths in condition 4 and 5	Footpaths and shared paths in condition 4 and 5 identified for renewal. Renewal list prioritised based on age	Prioritised renewal list developed (21,457m ² identified in the list)	\$1,170,698 for 10 years	\$0	0% funded
Renewal – kerb and gutter	Renew kerb and gutter in condition 4 and 5	Kerb and gutter in condition 4 and 5 identified for renewal. Renewal list prioritised based on age	Prioritised renewal list developed (604km identified in the list)	\$5,366,342 for 10 years	\$5,278,418 for 10 years	98% funded
Renewal - sealed roads pavement	Renew sealed roads pavement to achieve the service levels in table 4A below***	Pavement renewal works are scheduled to achieve the targets for category of the sealed road network as detailed in table 4A	1,950,522m ² required to be renewed in the next 10 years	\$8,633,000 per year***	\$46,815,548 for 10 years	54% funded
Renewal – sealed roads – seal	Renew sealed roads seal (wearing surfaces) in condition 4 and 5	Seal in condition 4 and 5 scheduled for resealing	Prioritised renewal list developed (2,685,680m ² identified the list)	\$18,799,762 for 10 years	\$19,558,700 for 10 years	104% funded
Renewal – unsealed roads	Re-sheet unsealed roads in condition 4 and 5****	Condition 4 and 5 unsealed roads are re-sheeted	Prioritised renewal list developed (27,456m identified in the list)	\$18,112,050 for 10 years	\$18,020,680 for 10 years	99% funded
New Assets – bridges	New bridges to comply with legislation	Construct new assets	1 new asset – Eunony Bridge	\$10,600,000	\$10,600,000	100% funded

*Scenario 1, what we would like to do based on asset register data

**Scenario 2, what we should do with existing budgets

***to achieve the targets set out in table 4A \$8.6 million is required to be spent on pavement renewal for the next 30 years. It is unrealistic to assume the targets set out in table 4A can be achieved in 10 years.

****the renewal list for unsealed roads for 10 years includes roads currently rated in condition 2 and 3. These roads are expected to be in condition 4 and 5 when they are renewed. Importantly, the delivery program (the 4 year program) for unsealed roads will be a rolling program incorporating the visual inspection results from the inspections conducted in July each year. This updated data will then also update the prioritised renewal list and the asset management plan.

CPI has been applied to the maintenance budgets

As detailed in table 4A below, the service level targets for sealed road pavement specify the maximum amount of road acceptable to have in average, poor and very poor conditions (condition 3, 4 and 5).

The acceptable levels of roads in condition 3, 4 and 5 vary depending on the category of the road. The categories are based on the service classification of the road (the hierarchy), as well as the speed zone of the road. In this way the service level targets take into account function and utilisation.

The average annual required renewal figure specified in Table 4A is required to achieve these targets over a 30 year period. These renewal estimates are based on unit rates developed in the 2015 revaluation of roads assets.

Table 4A: Levels of Service Targets for Sealed Road Pavement

Road Pavement Renewal Category	Length of Road (km)	Threshold acceptable condition rating for this category	% of road in or above threshold condition		Estimated required average annual renewal budget to meet minimum acceptable levels over 30 years
			Current Amount	Minimum Acceptable	
UC1-FAST	82.7	Poor	83%	60%	\$33,000
UC1-SLOW	300.4	Average	64%	70%	\$1,200,000
UC2-FAST	316.82	Average	65%	70%	\$1,800,000
UC2-SLOW	106.49	Average	56%	70%	\$1,000,000
UC3-FAST (T1)	237.2	Good	14%	70%	\$2,600,000
UC3-FAST (T2)	70.63	Good	20%	60%	\$600,000
UC3-MEDIUM	24.88	Good	25%	70%	\$500,000
UC3-SLOW	43.6	Average	33%	80%	\$900,000

*The road pavement renewal category is explained in Table 4B below.

Table 4B: Road Category Description

Road Category	Description
UC1 Tier 1 (Utilisation Category 1)	Arterial, regional and sub-arterial roads, with more than 400 vehicle movements per day.
UC2 Tier 2 (Utilisation Category 2)	Collector and local major roads, with less than 400 vehicle movements per day.
UC3 (Utilisation Category 3)	Access and local minor roads.
FAST	80-100km/h speed limit.
MEDIUM	60-70km/h speed limit.
SLOW	40-50km/h speed limit.

4. FUTURE DEMAND

4.1 Demand Drivers

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices and environmental awareness for example.

Demand for infrastructure is generated predominantly through either an increased utilisation of existing infrastructure brought about by the factors above or the requirement for new infrastructure to meet the needs of growth in new development.

The demand created by these two circumstances requires analysis to consider the ramifications to existing infrastructure networks and the ability of these networks to cope with the increased infrastructure. This analysis applies in all cases ranging from new subdivisions creating an increased load on existing networks, to changes in existing areas leading to increasing or decreasing utilisation and demand on infrastructure assets.

4.2 Demand Management Plan

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

The planning for infrastructure due to demand is a constant process of review and assessment of existing infrastructure and its ability to cope with increasing demand, versus the need to augment with new infrastructure.

Demand on infrastructure is created through increased utilisation generated from a growing population and changing patterns of behaviour, ranging from social demographics to transport options and solutions. Often this increasing demand will stem from urban or residential growth increasing the utilisation of a range of community infrastructure.

5. LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Asset capacity and performance

Locations where deficiencies in service performance are known, are detailed in Table 5. These issues are identified in the community consultation of the Wagga Wagga Integrated Transport Study of 2016 and by an internal stakeholder group.

Table 5: Known Service Performance Deficiencies

Location	Service Deficiency
Glenfield Rd/Pearson St corridor	High volume of traffic to/from the university, CBD and to new estate development
Gobbagombalin Bridge	High volume of traffic to/from the university, CBD, Bomen Industrial Estate and to new estate development
Bourke St	This road has become a major linkage between the north and south Traffic congestion at intersections mainly Safety at pedestrian crossings
Edward St underpass	Height limitations, hindrance for heavy trucks trying to pull away under heavy load
Roundabouts across the city	Safety of pedestrians and bike riders
Wagga Wagga Rural Referral Hospital	Hospital access, traffic delay, pedestrian safety
Farrer Road*	Poor condition and too narrow
Pine Gully Rd*	Road too narrow and needs new bike track to be safer for pedestrians and bike riders
Old Narrandera / Olympic Hwy*	Traffic congestion
Plumpton Rd/ Plunkett Drive/ Gregadoo Rd*	Traffic congestion

*These issues have been identified by Wagga Wagga City Council

5.1.2 Asset condition

Table 6 below details the condition inspection regime for the assets included in this plan.

Table 6: Condition Assessment Regime for Transport Assets

Asset Category	Inspection Frequency	Methodology	Last Inspection Date	Next Inspection Due
Bridges - vehicle	Level 1 - every 2nd year, alternating with level 2 Level 2 - every 2nd year Level 3 - every 10 years, or as recommended as an outcome of a Level 2 inspection Level 4 - as recommended by a bridge engineer (As per the RTA Bridge Inspection Manual 2007)	Level 1 and 2 can be conducted internally Level 3 and 4 must be carried out by a bridge engineer	Last visual inspection 2011 (produced condition data) under a different methodology Level 1 – after 2012 flood event	Level 3 due now
Bridges - footbridges	every 2 years	visual assessment	2012/13	Overdue
Carparks	every 3 years	visual assessment	2014/15	2017/18
Culverts	every 3 years	visual assessment	Network inspected 2012/13 833 inspected again in 2016/17	Overdue (except the 833 inspected in 2016/17)
Footpaths and shared paths	every 3 years	visual assessment	2012/13	Overdue
Kerb and gutter	every 3 years	visual assessment	2014/15	2017/18
Sealed Roads – pavements	every 3 years	Laser scanning	2014/15	2017/18
Sealed Roads – seal	every 3 years	Laser scanning	2014/15	2017/18
Unsealed Roads	annually	visual assessment	July 2016	July 2017

It is important to note Level 1 bridge inspections do not rate the condition of bridges, they only identify obvious safety issues with the bridge. These are conducted every 2 years and after every flood event. These inspections may trigger a higher level of inspection. It also should be noted that due to the transient nature of unsealed road conditions, only roads in very poor condition are identified. All other unsealed roads undergo age-based condition rating at time of revaluation.

It is important to note the need to conduct a Level 3 inspection of the bridge network has been identified as required in the short term. Based on the current data available, it is estimated this assessment will cost \$324,800. This inspection is not budgeted for in the Long Term Financial Plan as at June 2017.

The cost of the laser condition assessment for sealed roads is included in the Long Term Financial Plan and is considered to be adequate.

The condition assessment of all other transport assets is carried out by an internal resource and therefore funded through salaries.

Table 7 below describes the simple condition rating scale used to rate infrastructure assets.

Table 7: Simple Condition Grading Model

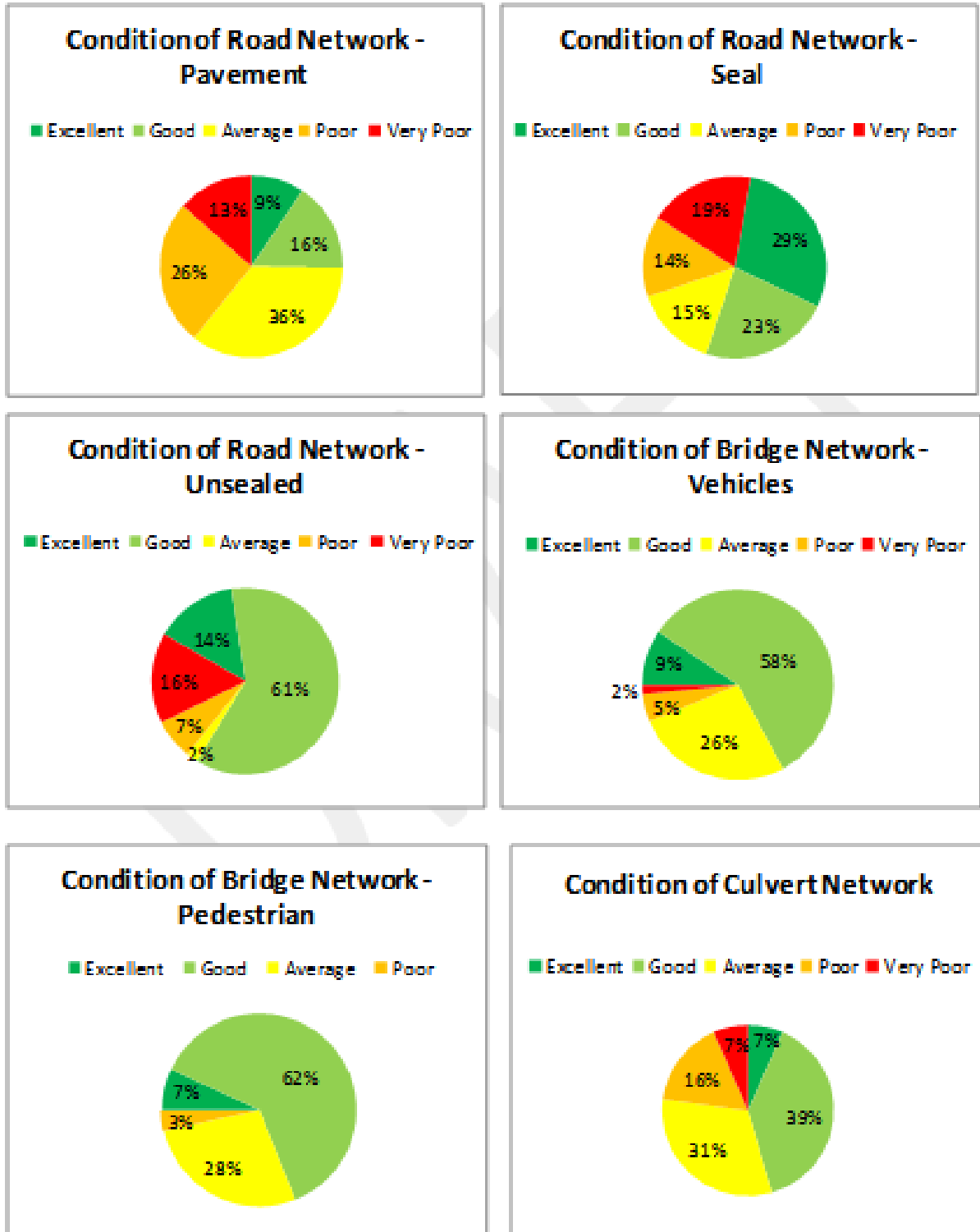
Condition Grading	Description of Condition
1	Excellent: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Average: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

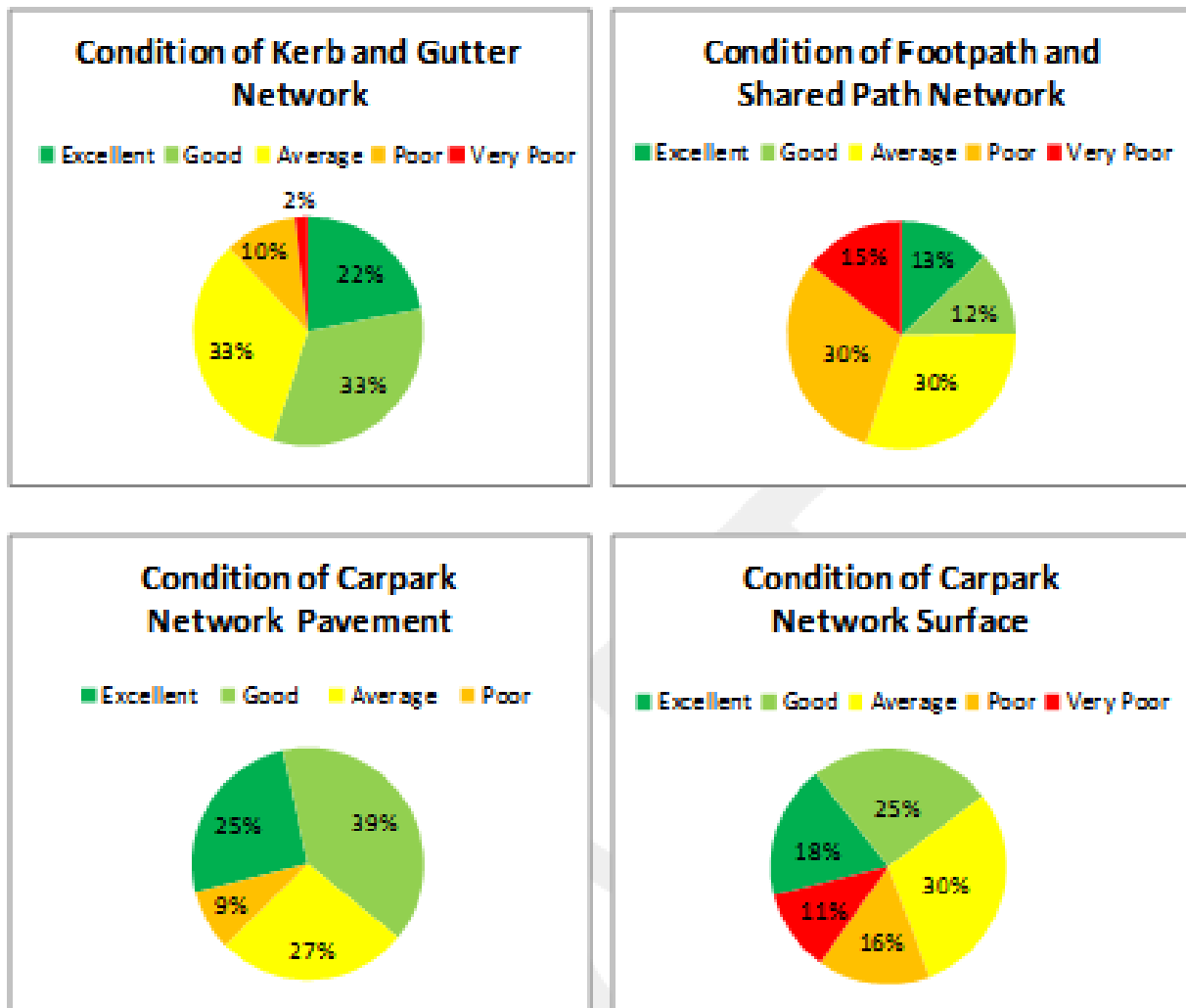
Due to the importance, extent and value of the sealed road network, the condition rating of sealed road pavement and surface is developed from the laser data received by an external contractor and is known as the pavement

condition index. This index takes into account the level of linear and transverse cracking, crocodile cracking, texture depth, roughness and rutting in each 50m segment of road. The condition rating from 1 to 5 for pavement used in asset management planning is based on an even split of the pavement condition index which ranges from 1 to 100.

The condition profile of the transport network infrastructure assets is shown in Figure 3 below.

Figure 3: Condition of Transport Assets





As shown in the above graphs:

- 97% of bridges (vehicles) are rated in a fair condition or above. This rating was developed in 2011 and is based on a visual condition assessment.
- 97% of footbridges are also rated as being condition 3 or above.
- 27% of the seal of the carparks network is rated in a below fair condition. (The seal of the carpark protects to pavement underneath). The majority of the pavement of the network is rated in condition 3 and above with 9% rated as condition 4 (poor).
- 12% of the culvert network are rated as condition 4 or 5.
- 36% of the footpaths and shared paths network is rated in condition 4 and 5, and therefore identified as requiring renewal.
- 87% of kerb and gutter is rated in fair condition or above.
- One third of the sealed road seal network is rated in condition 4 and 5 and therefore is included in the renewal list.
- 39% of the sealed road pavement is in condition 4 and 5.
- 16% of the unsealed roads were rated in a very poor condition in the last visual condition assessment conducted in July 2016. Based on age a further 7% are estimated to be in a poor condition based on their age compared with the useful life of an unsealed road.

5.1.3 Asset valuations

The value of transport infrastructure assets reported in Note 9 of the Financial Statements as at 30 June 2016 covered by this asset management plan is shown in table 8 below. Assets were last re-valued in 2014/15 and are valued at fair value. The table includes the current fair value of each asset category, along with the residual value, and the resulting depreciable amount. It then details the written down value of each asset category and the annual depreciation expense.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time. The below table also includes two ratios, the first shows the depreciation expense over the depreciable amount of each asset category and the second indicates how much is allocated to renew each asset category based on the current budget included in the Long Term Financial Plan compared to the depreciable amount.

Table 8: Financial Summary of Asset Categories

	Fair Value	Residual Value	Depreciable Amount	Written Down Value	Annual Depreciation Expense	Rate of Annual Asset Consumption	Rate of Annual Asset Renewal*
Bridges	\$44,285,123	\$0	\$44,285,123	\$30,440,874	\$485,535	1.10%	0%
Carparks	\$13,660,285	\$711,954	\$12,948,331	\$10,624,086	\$326,524	2.52%	0%
Culverts	\$33,078,847	\$1,624,453	\$31,454,394	\$21,562,764	\$524,094	1.67%	1.68%
Footpaths and Shared Paths	\$29,549,630	\$0	\$29,549,630	\$15,196,331	\$738,831	2.50%	0%
Kerb and Gutter	\$41,692,748	\$0	\$41,692,748	\$26,275,902	\$595,529	1.43%	1.05%
Sealed Roads - pavement	\$380,049,468	\$1,036,284	\$379,013,184	\$119,473,239	\$8,252,231	2.18%	1.01%
Sealed Roads - seal	\$87,392,198	\$0	\$87,392,198	\$46,295,913	\$4,292,315	4.91%	1.82%
Unsealed Roads	\$33,735,075	\$0	\$33,735,075	\$19,205,039	\$2,435,702	7.22%	4.39%

Source: Wagga Wagga City Council financial data as at December 2016. Figures as at 30 June 2016.

*Based on 2017/18 renewal budgets in the Long Term Financial Plan as at June 2017

5.1.4 Historical Data

Extent and condition data for the asset categories of the transport network has been captured in Council's asset register (myData) since the system was introduced. When the assets were revalued in 2014/15 the financial information was also captured in the asset management system for the first time. This data is now being used to produce the financial statements.

5.2 Infrastructure Risk Management Plan

An assessment of risks associated with service delivery from transport assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process identified the most important credible risk for each transport asset category, the likelihood of the risk event occurring, the consequences should the event occur. The likelihood and consequence ratings were then assessed against Council's risk management matrix below to develop a risk rating.

Likelihood	Almost Certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	High	Extreme
	Possible	Low	Medium	High	High	Extreme
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Medium	Medium	High
	Insignificant	Minor	Moderate	Major	Catastrophic	
Consequence						

The following transport assets have been assessed as having critical risks (those rated as extreme or high) associated with them:

- 100km per hour roads,
- 60km per hour roads,
- kerb and gutter,
- bridges, and
- culverts.

5.3 Maintenance Plan

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

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

The target maintenance activities associated with the transport assets included in this asset management plan are included in Table 10 below. The table also includes the annual projected maintenance cost (in 2017 dollars) and compares it to the 2017/18 maintenance budgets as per the Long Term Financial Plan as at June 2017. The annual projected required maintenance budget was developed by internal stakeholders in January 2017.

Table 10: Target Annual Maintenance Events, Estimated Projected Costs and Current Budget

Asset Category	Target Annual Maintenance Events	Target Frequency	Annual Estimated Projected Required Maintenance Cost	Average Annual Current Maintenance Budget*
Bridges	Visual Inspection	Network biannually	\$708,972	\$182,705
	Structural integrity testing	16 bridges per year		
	Minor Maintenance	Annually		
	Vegetation control	4 times per year		
	Delineation	400 units per year		
	Signs replacement	40 units per year		
	Guardrail maintenance	8 guardrails per year		
Carparks	Painting	917m ² per year	\$114,861	\$415,120
	Sign replacement	50 units per year		
	Pothole patching of sealed carparks	Network annually		
	Sweeping of sealed carparks	Network annually		
	Line marking	Network every 5 years		
	Grading unsealed carparks	Network annually		
Fettling unsealed carparks	Network annually			

Asset Category	Target Annual Maintenance Events	Target Frequency	Annual Estimated Projected Maintenance Cost	Average Annual Maintenance Budget*
Culverts	Cleaning	1992 culverts per year	\$4,447,325	\$358,540
	Minor repairs	282 per year		
	Vegetation control	1,992 culverts per year		
Footpaths and shared paths	Vegetation control	Network biannually	\$356,554	\$317,842
	Concrete - grinding	4,444m per year		
	Concrete – Hot mix correction	2,500m per year		
	Pothole patching – Asphalt	8m ² per year		
	Pothole patching – sealed shared path(excluding asphalt)	Annually per km		
	Unsealed shared paths- reshaping	13.3km per year		
	Unsealed shared paths- fettling	26.6km per year		
	Pavers – pressure clean	19,856m ² per year		
	Pavers – minor repairs	15 units per year		
	Pavers – shot blasting	19,856m ² per 10 years		
Sealed roads	Mini stabilising	7800m ² per year	\$5,919,548	\$5,481,216
	Pothole patching	1,989m ³ per year		
	Crack sealing	20km annually		
	Tree pruning	Annually		
	Guardrail maintenance	8 guardrails per year		
	Sweeping roads with kerb and gutter	314km annually		
	Weed spraying roads without kerb and gutter	857km biannually		
	Slashing (roads without kerb and gutter)	857km biannually		
	Sapling control (roads without kerb and gutter)	857km annually		
	Guide posts replacement	1,750 per year		
	Shoulder grading (arterial regional and urban areas without kerb and gutter)	323km per 2 years		
	Drainage reshaping (arterial regional and urban areas without kerb and gutter)	323km per 2 years		
	Shoulder grading (sub arterial and collector roads outside urban area)	292km per 3 years		
	Drainage reshaping (sub arterial and collector roads outside urban area)	292km per 3 years		
	Shoulder grading (all other sealed roads outside the urban area)	243km per 4 years		
	Drainage reshaping (all other sealed roads outside the urban area)	243km per 4 years		
	Sign replacement on urban sealed roads	1,310 per year		
Sign replacement on rural sealed roads	185 per year			
Unsealed Roads	Weed spraying	network biannually	\$2,808,924	\$1,455,123
	Slashing	network biannually		
	Sapling control	network annually		
	Fettling	network annually		
	Guide post replacement	2,250 per year		
	Guardrail maintenance	8 guardrails per year		
	Grading -collector, local major and urban	344km per year		
	Drainage reshaping -collector, local major and urban	344km per year		
	Grading - Local minor, multi access and village	444km per year		
	Drainage reshaping - local minor, multi access and village	444km per year		
	Grading - access or lower	490km per year		
	Drainage reshaping- access or lower	490km per year		
	Sign replacement on urban roads	95 per year		
	Sign replacement on rural roads	280 per year		

*source Long Term Financial Plan June 2017

NB there are no maintenance activities for kerb and gutter

The current maintenance budgets are inadequate for most transport assets included in the plan. Considering the figures in the above table in isolation, the footpath and shared path network seems to be adequately funded. It should be noted however, there is no current budget in the Long Term Financial Plan for the renewal of footpaths.

5.3.1 Operations and Maintenance Strategies

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

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

5.3.2 Asset hierarchy

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

In the asset register transport assets are componentised as follows:

- bridges are not componentised (they are categorised based on material type),
- carparks are componentised as seal, pavement and formation for sealed and pavement and formation for unsealed,
- culverts are not componentised,
- footpaths and shared paths are not componentised (they are categorised based on material type),
- kerb and gutter is not componentised (they are categorised based on material type),
- sealed roads are componentised into seal, pavement and formation, and
- unsealed roads are componentised into pavement and formation.

5.3.3 Critical Assets

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

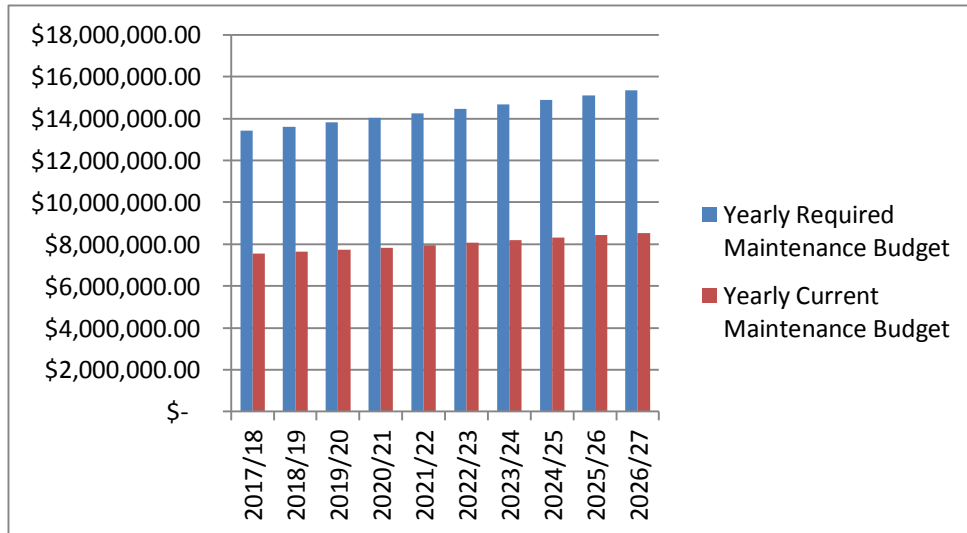
Operations and maintenance activities may be targeted to mitigate critical assets failure and maintain service levels. The critical transport asset categories for Council have been identified through a risk assessment process, they are listed below:

- 100km/h roads,
- 60 – 100km/h roads,
- kerb and gutter,
- bridges, and
- culverts.

5.3.4 Summary of future maintenance expenditures

Future maintenance expenditure is forecast to trend as per Figure 4 below. Figure 4 includes the current maintenance budget in the Long Term Financial Plan compared to the estimated projected required budget as estimated in 2017 based on current available data.

Figure 4: Projected Estimated Maintenance Expenditure compared to Current Budget



As shown above the current maintenance budget for the transport network is not adequate to maintain the assets to meet the service levels detailed in this asset management plan. The current budget is 56% of the required projected maintenance budget, producing an average estimated shortfall of \$6,333,584 per year for the next 10 years.

5.4 Renewal Plan

5.4.1 Renewal Plan

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

The renewal plan for transport assets has been developed based on condition data from Council’s asset register.

To achieve the levels of service included in this asset management plan the following volume of assets are identified for renewal in the next 10 years:

- 22 bridges,
- 8 carparks, totalling 30,596.25m²,
- 739 culverts,
- 21,457m² of footpaths and shared paths,
- 27,456m of kerb and gutter,
- 1,950,552m² of sealed road – pavement,
- 356,230m of sealed road – seal, and
- 603,735m of unsealed road for resheeting.

The renewal categories for sealed road pavement forms Appendix A of this plan.

The useful lives of assets are shown in Table 11 this data was last reviewed on 2014/15. This data was developed by Wagga Wagga City Council and then audited by an external contractor before being captured in the asset register.

Table 11: Useful Lives of Assets

Asset Category	Useful life
Bridges	Concrete – constructed after code - 100 years Concrete – constructed before code – 50 years Brick and steel – 40 years Timber and concrete – 20 years Timber – 20 years
Carparks – sealed	Seal – aggregate seal – 15 years Seal– hotmix overlay - 25 years Pavement – hotmix deeplift – 50 years Pavement – high load to 2000 – 30 years Pavement – high load from 2013 – 50 years Pavement – high load 2000 to 2013 – 20 years Pavement – low load from 1905 – 60 years Pavement – low load from 2013 – 80 years Pavement – low load from 2000 to 2013 – 40 years Formation 100 years
Carparks - unsealed	Pavement – 25 years Formation/subgrade – 100 years
Culverts	50 years
Footpaths and shared paths	Pavers 40 years Gravel/granite 25 years Aggregate seal 15 years Concrete 50 years
Kerb and gutter	50 years
Sealed Roads	Seal – aggregate seal - 15 years Seal– hotmix overlay - 25 years Pavement - hotmix deeplift - 50 years Pavement – high load to 2000 - 30 years Pavement – high load from 2013 - 50 years Pavement – high load 2000 to 2013 - 20 years Pavement – low load from 1905 - 60 years Pavement – low load from 2013 - 80 years Pavement – low load from 2000 to 2013 - 40 years Formation 100 years
Unsealed Roads	Pavement – collector 5 years Pavement – local major 8 years Pavement – local minor 10 years Pavement – multi access 12 years Pavement – access 15 years Pavement – other unmaintained 20 years Pavement – unmaintained 25 years Formation/subgrade – 100 years

5.4.2 Renewal Strategies

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

- planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner,
- undertaking project scoping for all capital renewal and replacement projects to identify:
 - the service delivery ‘deficiency’, present risk and optimum time for renewal/replacement;
 - the project objectives to rectify the deficiency;
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency;
 - evaluate the options against evaluation criteria adopted by the organisation; and
 - select the best option to be included in capital renewal programs,
- using ‘low cost’ renewal methods (cost of renewal is less than replacement) wherever possible,

- maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting very high and high risks and residual risks after treatment to management and Council,
- review current and required skills base and implement workforce training and development to meet required construction and renewal needs,
- maintain a current hierarchy of critical assets and capital renewal treatments and timings required, and
- review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

Asset renewal and replacement is typically undertaken to either:

- ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (eg replacing a bridge that has a 5t load limit), or
- to ensure the infrastructure is of sufficient quality to meet the service requirements (eg roughness of a road).³

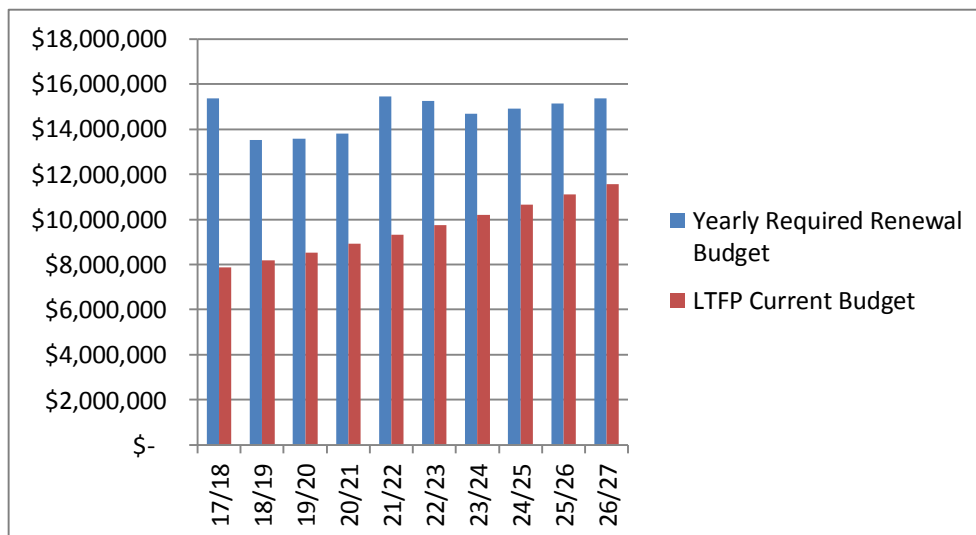
It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

- have a high consequence of failure,
- have a high utilisation and subsequent impact on users would be greatest,
- the total value represents the greatest net value to the organisation,
- have the highest average age relative to their expected lives,
- are identified in the asset management plan as key cost factors,
- have high operational or maintenance costs, and
- where replacement with modern equivalent assets would yield material savings.⁴

5.4.3 Summary of future renewal and replacement expenditure

The estimated projected required renewal expenditure to meet the service levels in this plan are compared with the current available budget in the Long Term Financial Plan for transport assets is summarised in Figure 5. Note that all amounts are shown in real values (2017 dollars) and the required annual renewal budgets are based on unit rates developed in the 2015 revaluation of roads assets.

Figure 5: Projected Capital Renewal and Replacement Expenditure



³ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

⁴ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

As shown above, the renewal budget for transport assets is insufficient to fund the estimated required annual renewal to meet the service levels set out in this asset management plan. The current budget is 65% of the required budget, producing an estimated shortfall of \$50,945,875 over 10 years.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works which create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. The need for a duplication of the Eunony Bridge has been identified and a project to construct a new bridge is in the planning phase.

5.5.1 Capital Investment Strategies

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

- planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner,
- undertake project scoping for all capital upgrade/new projects to identify:
 - the service delivery 'deficiency', present risk and required timeline for delivery of the upgrade/new asset;
 - the project objectives to rectify the deficiency including value management for major projects;
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency;
 - management of risks associated with alternative options;
 - and evaluate the options against evaluation criteria adopted by Council, and
 - select the best option to be included in capital upgrade/new programs,
- review current and required skills base and implement training and development to meet required construction and project management needs, and
- review management of capital project management activities to ensure Council is obtaining best value for resources used.

5.5.2 Summary of future upgrade/new assets expenditure

Based on the data available it is assumed these new and upgraded assets are 100% funded.

5.6 Disposal Plan

As the focus is to remediate and rehabilitate transport assets, there is currently no plan to dispose of any assets in the network.

5.7 Service Consequences and Risks

This asset management plan includes 2 scenarios. They are explained below.

Scenario 1 - What we would like to do based on asset register data (included in Table 3 as the estimated required budget and the service objective).

Scenario 2 – What we should do with existing budgets and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position).

A third scenario will be developed after consideration of the above scenarios across all asset categories included in the asset management framework. Scenario 3 is described below.

Scenario 3 – What we can do and be financially sustainable with asset management plans matching long-term financial plans. This scenario is included in Table 3 in the form of the current performance and current Long Term Financial Plan budget as at June 2017.

The development of scenario 1 and scenario 2 asset management plans provides the tools for discussion with the Council and community on trade-offs between what we would like to do (scenario 1) and what we should be doing with existing budgets (scenario 2) by balancing changes in services and service levels with affordability and acceptance of the service and risk consequences of the trade-off position (scenario 3). Scenario 3 will be included in future revisions of this plan.

5.7.1 What we cannot do

There are some maintenance activities and capital projects that are unable to be undertaken within the next 10 years given the current funding levels available in the Long Term Financial Plan. These include:

- maintaining bridges, carpark, culverts, sealed roads and unsealed roads to the level detailed in the Plan,
- conducting level 3 bridge assessment of the network,
- renew any bridges, carpark, footpaths and shared paths in condition 4 and 5, and
- renew 47% of sealed road pavement in condition 4 and 5.

5.7.2 Service consequences

Maintenance activities and capital projects that cannot be undertaken will create service consequences for users. These include:

- bridges, carpark, culverts, sealed roads and unsealed roads will deteriorate faster than expected if they are not adequately maintained,
- bridge renewal plans will not be based on structural testing data,
- bridges, carpark, footpaths and shared paths in condition 4 and 5 will not be replaced and in extreme circumstances they may be required to be taken out of service, and
- 47% of sealed road pavement will not be renewed and therefore the cracking, rutting and roughness of these sealed roads is expected to worsen.

5.7.3 Risk consequences

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

- the likelihood of risks occurring increasing as the condition of assets decreases,
- assets taken out of service due to condition,
- increased risk of asset failure of the transport network, and
- increase in whole of life costs and a decrease in asset life expectancy.

6. FINANCIAL SUMMARY

6.1 Sustainability of service delivery

Table 12 shows the asset renewal ratios for transport assets. This ratio compares the required renewal budget to meet the service levels in the plan (based on current unit rates developed as part of the 2015 revaluation) to the current renewal budget in the Long Term Financial Plan for the next 10 years.

Table 12: Asset Renewal Ratio

Asset category	Asset Renewal Ratio
Bridges	0%
Carparks	0%
Culverts	97%
Footpaths and Shared Path	0%
Kerb and Gutter	98%
Sealed Roads – pavement	53%
Sealed Roads - seal	104%
Unsealed Roads	99%

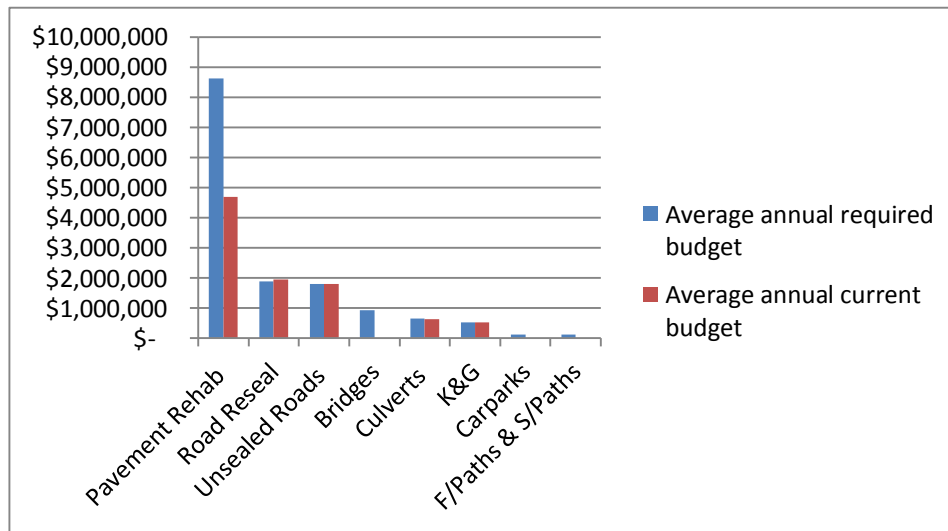
The asset renewal funding ratio is the most important indicator and reveals that over the next 10 years, Council is forecasting that it will have no funding for the renewal of bridges, carparks and footpaths and shared paths, close to 100% for culverts, kerb and gutter, sealed roads seal and unsealed roads and 53% of the funds required for the optimal renewal and replacement of the sealed road pavement (as detailed in this plan).

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 for the first years of the asset management plan and ideally over the 10 year life of the Long Term Financial Plan.

Providing services in a sustainable manner will require matching of projected asset renewal and replacement expenditure to meet agreed service levels with the corresponding capital works program accommodated in the Long Term Financial Plan June 2017.

Figure 6 shows the average annual projected asset renewal and replacement budget (based on the unit rates developed in the 2015 revaluation) across all transport assets included in the plan compared to renewal and replacement budget in the Long Term Financial Plan as at June 2017.

Figure 6: Projected and LTFP Budgeted Renewal Expenditure



A gap between projected asset renewal/replacement expenditure and amounts accommodated in the Long Term Financial Plan indicates that further work is required on reviewing service levels in this asset management plan (including possibly revising the Long Term Financial Plan). This will be considered in the future revisions of this asset management plan with the development of Scenario 3, what we can do and be financially sustainable with asset management plans matching the Long Term Financial Plan.

In the meantime, 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 Forecast Reliability and Confidence

Over all data sources the data confidence is assessed as medium confidence level for data used in the preparation of this asset management plan.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Council uses the Assetic asset management system, particularly the myData platform. Outputs from myData on opening and closing balances, depreciation and capitalisation are used in the development of financial statements.

Accountabilities for financial systems

The responsibility of the asset management financial system is the responsibility of the Financial Sector, in particular the Manager Finance.

Accounting standards and regulations

Wagga Wagga City Council's financial reporting must comply with Australian equivalents to International Financial Reporting Standards, other authoritative pronouncements of the Australian Accounting Standards Board, Urgent Issues Group Interpretations, the Local Government Act (1993) and Regulations and the Local Government Code of Accounting Practice and Financial Reporting.

Capital/maintenance threshold

The Council's capitalisation threshold is detailed in Note 1 of Wagga Wagga City Council Financial Statements annually.

7.1.2 Asset management system

Wagga Wagga City Council uses Assetic to manage the asset data for the transport network. Data captured in the system includes all data required to correctly determine a replacement cost and written down value of the asset. This includes:

- size of the asset, typically in square meters,
- the condition index of the asset,
- financial data, including unit rate, useful life, residual value, and
- treatment records for each asset, including the capital amount and the extent to which those works improved or upgraded the asset.

7.1.3 Linkage from asset management to financial system

As at 2017 there is not an automated linkage between the financial system and the asset register in myData.

7.1.4 Accountabilities for asset management system and data maintenance

The responsibility of the asset management system is the responsibility of the Financial Sector, in particular the Manager Information and Customer Service. The responsibility of managing the asset data is the responsibility of the Commercial Sector of Council, in particular the Manager Project Operations.

7.2 Improvement Plan

This asset management plan has been developed based on condition data only. The data set for transport assets needs to be expanded to consider the utilisation and function of the assets also. This data will then be used for making decisions about the networks.

The asset management improvement plan generated from this asset management plan is shown in Table 13.

Table 13: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Develop scenario 3 for the assets included in this asset management plan	Manger City Strategy	Sustainable futures group required to develop scenario. Community consultation required to recommend a scenario.	June 2018
2	Capture function and utilisation data for civil assets	Manager Project Operations and Manger Operations	Staff time	June 2018
3	Model for longer term renewals	Manager Project Operations and Manager Operations	Staff time and modelling software	Dec 2018
4	Develop a planned maintenance program for the road network and identified resources required	Manager Operations	Staff time	Dec 2017
5	Develop solutions to remediate pavement segments identified	Manager Project Operations	Staff time	Dec 2017
6	Develop a risk treatment plan for transport assets including costs	Manager Project Operations and Manager Operations	Staff time	Dec 2018
7	Capture the data for the transport assets to allow for the use of the NAMS plus template	Manager Project Operations and Manager Operations	Staff time	Dec 2017
8	Examine demand drivers and identify the impact on transport assets	Manager City Strategy	Planning documents	Dec 2017
9	Develop 20 year plans for transport assets	Manager Project Operations and Manager Operations	Staff time	June 2017
10	Document the renewal ranking criteria for transport assets	Manager Project Operations and Manager Operations	Staff time	June 2017
11	Document the ranking criteria for new transport assets	Manager Project Operations and Manager Operations	Staff time	June 2017
12	Review risk assessments and identify individual assets criticality	Manager Project Operations and Manager Operations	Staff time	Dec 2018
13	Develop delivery program for condition rating, including costs	Manager Project Operations and Manager Operations	Staff time	June 2017
14	Develop a renewal plan for sealed road pavement based on segment data rather than modelling outcomes	Manager Project Operations and Manager Operations	Staff time	Dec 2017

7.3 Monitoring and Review Procedures

The asset management plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the organisation's long term financial plan.

The asset management plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within 9 months of each Council election.

7.4 Performance Measures

The effectiveness of the asset management plan will be measured in the following ways:

1. the gap between actual and targeted levels of service at any point in time,
2. the degree of synchronisation between the asset management plan and the Long Term Financial Plan,
3. the degree of integration between the asset management plan and the Delivery Program/Operational Plan,
4. the level of execution of the identified actions in the plan, and
5. the degree the assessed level of risk to Council in each asset category reduces over time.

8. REFERENCES

IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM

IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.

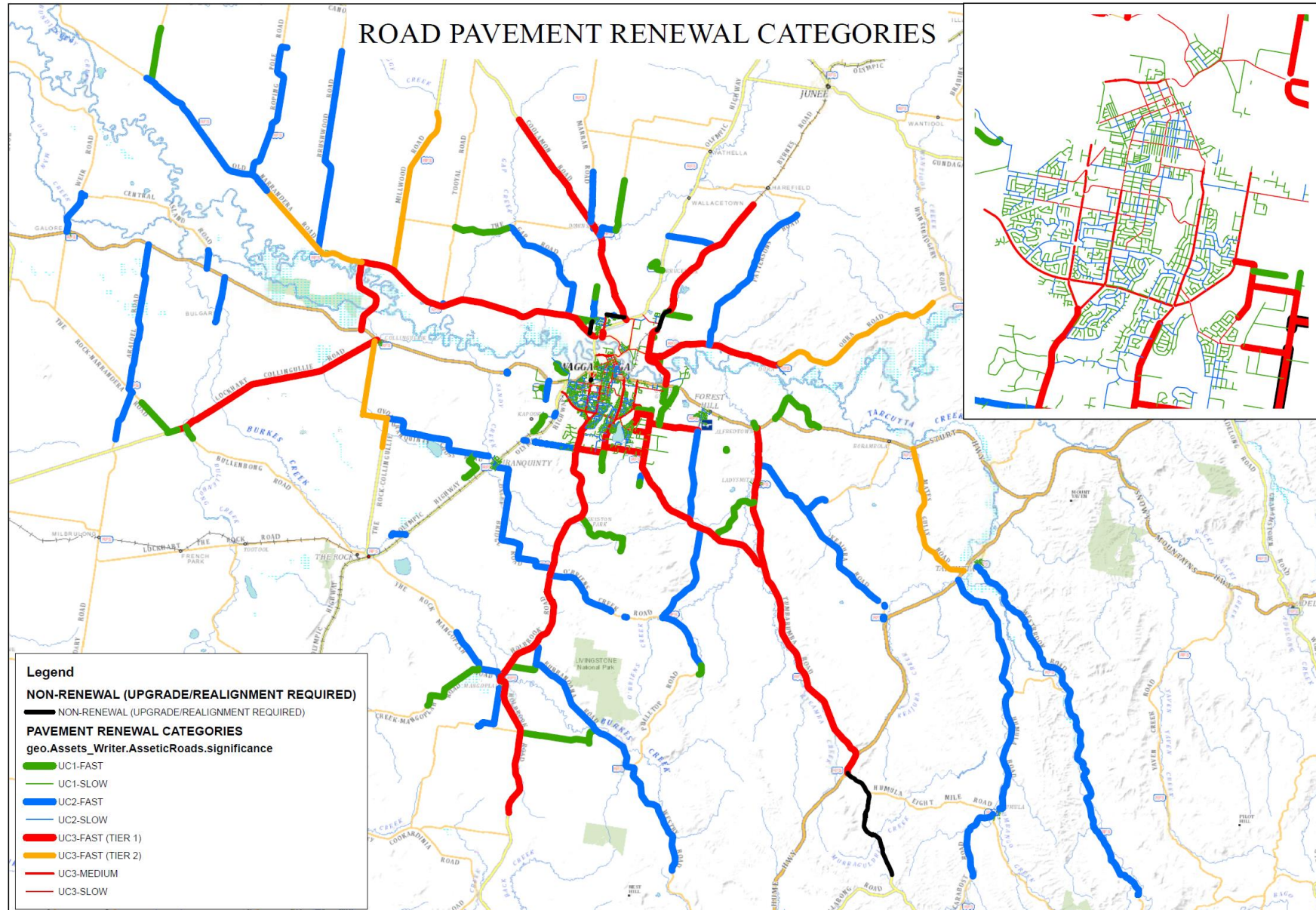
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Wagga Wagga City Council, Long Term Financial Plan June 2017/18

Wagga Wagga City Council, Community Strategic Plan 2017

Appendix A Renewal Plan Sealed Road Pavement Categories



Appendix B Abbreviations

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

questions? comments?
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