



transport

asset management plan

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1. executive summary

Context

This plan is about the management of Council's Transport assets. Transport assets include Roads, Kerbs, Footpaths, Bridges, and other assets such as traffic control devices.

The fundamental purpose of this Asset Management Plan (AMP) is to outline how Council applies the principles of Strategic Asset Management to the long-term planning of Council's Transport infrastructure. Council's philosophy is to cater for community needs in line with future demand, current trends and provide desired levels of service within available resources and funding.

This Asset Management Plan is designed to:

- Describe Current and Target Levels of Service
- Demonstrate responsive management of assets and services provided by assets
- Demonstrate compliance with regulatory requirements
- Communicate funding required to provide the required levels of service

Over the next ten years Griffith is expected to experience population growth and a corresponding increase on the demand for services provided via infrastructure assets. Some other challenges Griffith faces are providing for an ageing population; and potentially a future with less water due to cuts to water allocations and climate variability/change.

Council's transport infrastructure provides for vehicular and pedestrian traffic to travel throughout the local government area. The greatest challenge faced by council in relation to transport assets is the high cost associated with providing transport services.

What does it Cost?

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is \$7,809,000 per year.

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations,

maintenance and capital renewal expenditure. The life cycle expenditure over the 10 year planning period is presently \$8,488,000 per year.

For the assets covered by this plan there is therefore a funding surplus of \$678,000 per year. As a percentage life cycle expenditure is 109% of life cycle costs. The life cycle costs and life cycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term.

What we will do

We plan to provide these services for the following:

- Operation, maintenance, renewal and upgrade of Transport assets to meet service levels set in annual budgets.

What we cannot do

We do **not** have enough funding to provide all services at the highest service levels or provide new services without consideration of the future impact on existing services.

The Next Steps

The actions resulting from this asset management plan are:

- Maintain the current assets in safe condition
- Ongoing improvement of asset management systems and processes
- Continue to monitor the condition of assets so that there is adequate planning time for periods of major renewals
- Provide additional assets in a planned manner and only where agreed criteria are met.
- Engage the community on service delivery and funding issues raised in this AMP



Bagtown Roundabout

2. introduction

2.1 Background

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

The asset management plan follows the format of the Example of an Asset Management Plan Structure recommended in Section 4.2 of the International Infrastructure Management Manual¹.

The asset management plan is to be read in conjunction with the organisation's Annual Report and Financial Statements, Asset Management Policy, Asset Management Strategy and the associated Integrated Planning and Reporting documents, and Griffith City Council's organisational structure.

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide people with the ability to travel and transport goods safely and efficiently throughout the community.

Table 2.1: Assets covered by this Plan

Asset category	Dimension
Roads	1379km
Bridges	17 Bridges
Car Parks	66 car parks
Footpaths and cycleways	48.5km
Kerb and Channel	306.4km

Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.2

¹ IPWEA, IIMM V. 5, 2015, Sec 4.2 Example of an Asset Management Plan Structure, pp 4|37 – 39.

Table 2.2: Key Stakeholders in the AM Plan

Stakeholder Group	Asset Management Functions
Elected Members	<ul style="list-style-type: none"> • Represent the community's service level expectations; • Endorsement of the asset management policy, strategy and plans; and • Set high level direction through the development of asset management principles in the Community Strategic Plan
Senior Management Team	<ul style="list-style-type: none"> • Overall responsibility for developing an asset management strategy, plans and procedures and reporting on the status and effectiveness of asset management within Council; • Manage the development of the Asset Management Plans and provide the resources required to complete this task; • Set high level priorities for asset management development in Council and raise the awareness of this function among Council staff and contractors; • Implement the actions resulting from this plan and support and enable changes to a better way of managing assets and delivering services; and • Support an asset management driven budget and Long Term Financial Plan.
Asset Management Group	<ul style="list-style-type: none"> • Custodian of the corporate asset register and ensuring the asset valuations are accurate; • Preparation of asset sustainability and financial reports incorporating asset depreciation in compliance with current Australian accounting standards; • Asset Management System and Geographic Information System development and administration; • Maintain the asset management framework for Council, including asset information systems, facilitating the plan development and maintenance and publishing plans; • Develop supporting policies such as capitalisation, revaluation and depreciation.
Infrastructure Operations and Utilities Directorates	<ul style="list-style-type: none"> • Provide local knowledge level detail on all infrastructure assets; • Develop 10 Year Capital Works Plans and budgeting; • Verify the size, location and condition of assets; • Develop the maintenance standards deployed and Council's ability to meet technical and customer levels of service.
Sustainable Development	<ul style="list-style-type: none"> • Liaison internally with the Senior Management Team with regard to asset prioritisation and planning.
External Parties	<ul style="list-style-type: none"> • Office of Local Government • Residents; • Local Businesses; • Tourist and Visitors (as occasional users)

2.2 Goals and Objectives of Asset Management

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

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

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.²

2.3 Plan Framework

Key elements of the plan are:

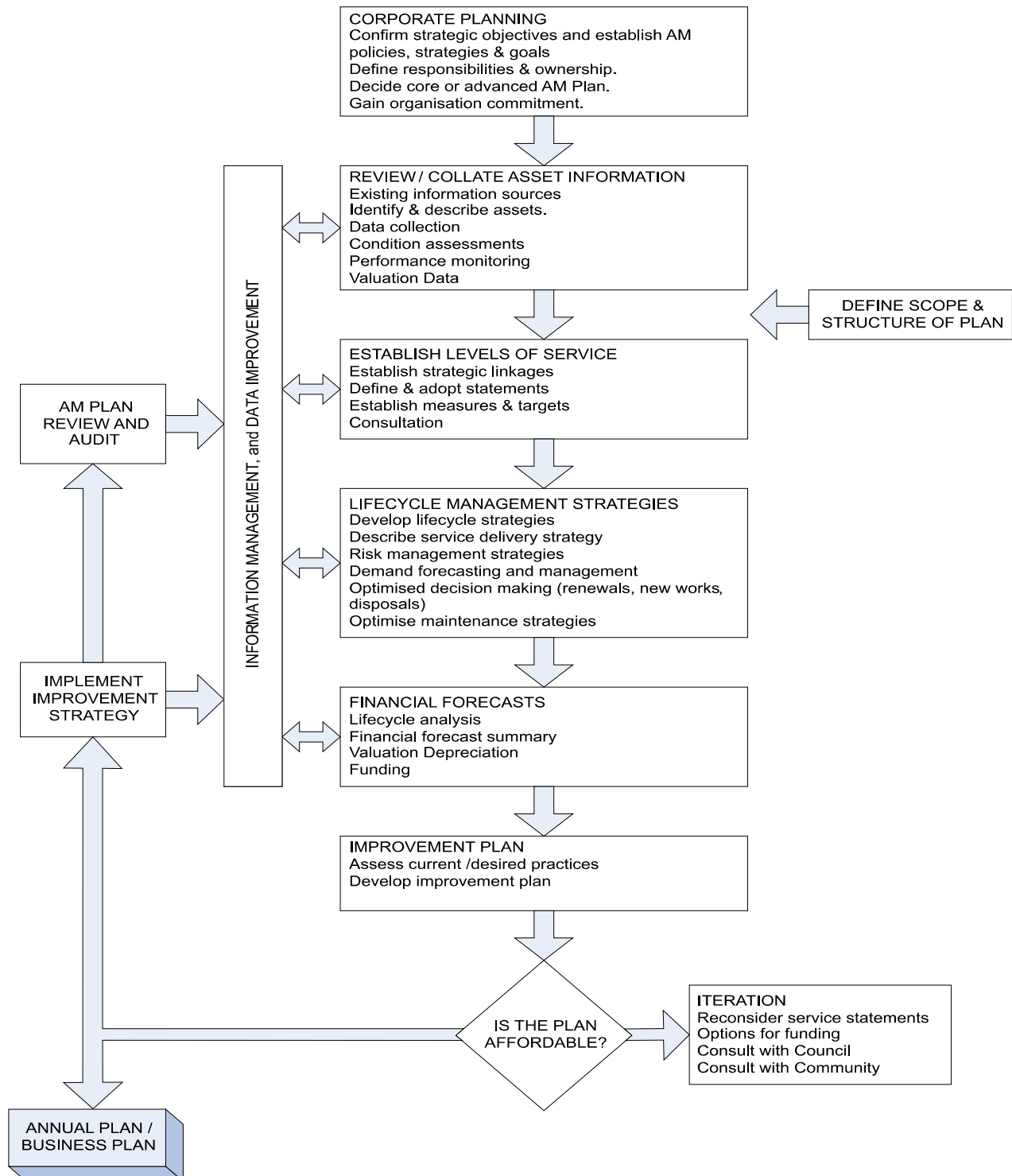
- Levels of service – specifies the services and levels of service to be provided by the organisation,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Life cycle management – how we will manage our existing and future assets to provide defined levels of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

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

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

Road Map for preparing an Asset Management Plan

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



2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 10 year planning period in accordance with the International Infrastructure Management Manual³. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

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

2.5 Community Consultation

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

2.6 Links to the Community Strategic Plan and Delivery Program

Council has develop its asset management strategy and plans with clear links to its Community Strategic Plan, Delivery Program and Long Term Financial Plan.

Table 2.3 below lists aims from the CSP that relate to this asset plan. Projects that support these aims are detailed in Appendix A Budgeted Expenditures Accommodated in LTFP

Table 2.3: Links to the Community Strategic Plan

Aim	Sub aim
1 Develop an engaged and connected community	1.2 Be well informed, proactive and responsive to current issues that impact our community.
2 Work together to achieve our goals	2.1 Actively engage with State, Federal and non-government agencies in a local advocacy role.
2 Work together to achieve our goals	2.3 Maximise opportunities to secure external funding for partnerships, projects and programs to improve the quality of life for residents and visitors.
4 Ensure Griffith is a great place to live	4.2 A shared responsibility for the safety of individuals and the community.
4 Ensure Griffith is a great place to live	4.4 Provide and promote accessibility to services and facilities.
5 Promote a healthy and active lifestyle	5.2 Build a community which promotes, facilitates and supports an active and healthy lifestyle for all.
8 Provide and manage assets, services and facilities	8.1 Provide, renew and maintain a range of quality infrastructure, assets, services and facilities delivered in a cost effective and sustainable manner.
8 Provide and manage assets, services and facilities	8.2 Maintain and develop an effective transport network (public roads, pathways, pedestrian access and transport corridors) for Griffith and villages.
8 Provide and manage assets, services and facilities	8.3 Improve the aesthetic of the City and villages, by developing quality places and improved public realm.
9 Enhance the natural and built environment	9.3 Deliver projects to protect and improve biodiversity and biosecurity.
9 Enhance the natural and built environment	9.4 Value and protect our heritage buildings and precincts.

³ IPWEA, 2011, IIMM.



Oakes Road Reconstruction, 2016

3. levels of service

3.1 Customer Research and Expectations

A comprehensive Community Satisfaction Survey was launched by Council in June 2016 to ascertain the level of the community's satisfaction with Council and the community of Griffith in 2016. The catalyst for the survey was the need to complete the cycle of measurement of service delivery as identified in the Griffith Community Strategic Plan – Growing Griffith 2030. This survey followed up on the community satisfaction survey undertaken by Council in 2013/14 to provide a baseline measurement of community satisfaction with Griffith as a place to live and work, and of Griffith City Council.

Data collected in this survey will be used as a planning tool for the improvement and provision of services. At the end of the term of this Council in 2020, another Community Survey will be undertaken to measure improvements or otherwise of the level of community satisfaction with Council services.

There were 525 respondents to the 2016 survey, which represents a significant increase of respondents from the first survey take in 2013/14 of 179 respondents. The survey was conducted using various mediums to engage with the community:

- online via Council website to a Council designed survey
- distribution of the survey in the Area News
- hardcopies of the survey distributed at Council facilities
- Councillor participation via a series of Councillor/Community engagement sessions at Griffith City Plaza.

Participation in the survey was also promoted through television and radio interviews.

The survey was very comprehensive as it sought to ask questions about Council services and also about the level of satisfaction of residents within the community of Griffith. The survey allowed respondents to respond via multiple choice levels of satisfaction and by comment. It is noted that the Community Survey took place during a period of prolonged wet weather, and accordingly, a lot of survey respondents were concerned with the condition of unsealed roads and the condition of those roads.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the organisation's vision, mission, goals and objectives.

Council's Mission Statement

1. To respond to the needs of the community and deliver in an economical manner those services which are the responsibility of Local Government.
2. To provide Local Government administration that is dedicated, accountable and committed to the improvement of the quality of life and the economic well-being of the citizens of the City of Griffith.

Council's Vision for Griffith

Council's adopted vision for Griffith is: To be an acknowledged major regional centre with an emphasis on best agricultural practices, providing:

- a viable local economy with sustainable development and growth;
- a clean and ecologically sustainable built environment and natural environment;
- a quality lifestyle for residents, and
- a pride in our cultural diversity.

Council's Corporate Motto

"Love the Lifestyle"

Griffith City Council's vision for its community is to be thriving, engaged, safe, happy, prosperous and connected. As a community, Griffith is proud of its history and inspired by its potential and the opportunities that are available to existing and future residents. The motto "Love the Lifestyle" is a reflection of this vision as it embodies all that defines Griffith. This city and its community provides an abundance of opportunities for work, leisure, retail, education, business and investment and is the major regional centre for the Western Riverina.

Council's Corporate Logo

Griffith's logo complements the corporate slogan and establishes recognition of the Griffith area, the fundamentals that have helped to create a strong community and the design principles of Griffith's architect, Walter Burley Griffin. The logo includes abstract representations of a waterwheel, the town plan, the sun, irrigation channels and the fruit produced by these elements.

The Council will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan prepared in conjunction with this AM Plan.

3.3 Legislative Requirements

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

Table 3.2: General Legislative Requirements

Legislation	Requirement
NSW Local Government Act 1993	This Act sets out role, purpose, responsibilities and powers of local governments including the management of public infrastructure.
Local Government Code of Accounting Practice and Financial Reporting	NSW Division of Local Government code that documents fair value legislation introduced in 2007 in accordance with Australian Accounting Standard 116 for property, plant and equipment.
Public Works Act 1912	Sets out the role of Council in the planning and construction of new assets.
Protection of the Environment Operations Act 1997	This act places a 'duty of care' on people not to undertake activities that will cause environmental harm.
Work Health & Safety Act 2011	The objects of this Act are to secure and promote the health, safety and welfare of people at work and hence when employees of Council undertake works they must do so with regards to the various requirements of this act.
Public Health Act 1991	This Act consolidates previous Acts relating to Public Health and provides for the prevention and spread of disease.
Local Government Amendment (Planning and Reporting) Act 2009	Local Government Amendment (Planning and Reporting) Act 2009 includes the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
Disability Discrimination Act 1994	The objects of this Act are: (a) to eliminate, as far as possible, discrimination against persons on the ground of disability in the areas of: (i) work, accommodation, education, clubs and sport; and (ii) the provision of goods, facilities, services and land; and (iii) existing laws; and (iv) the administration of Commonwealth laws and programs; and (b) to ensure, as far as practicable, that persons with disabilities have the same rights to equality before the law as the rest of the community; and (c) to promote recognition and acceptance within the community of the principle that persons with disabilities have the same fundamental rights as the rest of the community.

Table 3.3: Transport Asset Specific Legislative Requirements

Legislation	Requirement
Roads Act 1993	<p>The objects of this Act are:</p> <p>(a) to set out the rights of members of the public to pass along public roads, and</p> <p>(b) to set out the rights of persons who own land adjoining a public road to have access to the public road, and</p> <p>(c) to establish the procedures for the opening and closing of a public road, and</p> <p>(d) to provide for the classification of roads, and</p> <p>(e) to provide for the declaration of the RTA and other public authorities as roads authorities for both classified and unclassified roads, and</p> <p>(f) to confer certain functions (in particular, the function of carrying out road work) on the RTA and on other roads authorities, and</p> <p>(g) to provide for the distribution of the functions conferred by this Act between the RTA and other roads authorities, and</p> <p>(h) to regulate the carrying out of various activities on public roads.</p>

3.4 Current Levels of Service

We are committed to provide a comprehensive range of high quality community cultural facilities and passive and active recreation facilities which cater for the needs of the community.

We have defined service levels in two terms.

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

Community levels of service measures used in the asset management plan are:

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

At present, indications of current and target levels of service are guided by various sources including:

- Residents feedback to Council and staff.
- Operations staff feedback to management.
- Service requests and related correspondence entered in Council's Customer Request System.
- Physical measurements of quality standards.
- Legislative standards (minimum requirements)
- 2014 and 2016 Community Satisfaction Surveys.

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

Technical service measures are linked to annual budgets covering:

- Operations** – the regular activities to provide services such as opening hours, cleansing frequency, mowing frequency, etc.
- Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition (eg road patching, unsealed road grading, building and structure repairs),

- Renewal –** the activities that return the service capability of an asset up to that which it had originally (eg frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade –** the activities to provide an higher level of service (eg widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (eg a new car park).

3.5 Desired Levels of Service

Technical levels of service are driven by legislation (eg water quality standards), published standards, (eg Austroads guidelines) and engineering experience. Indications of desired community levels of service are obtained from various sources including the 2014 and 2016 Community Satisfaction Surveys, the Customer Request Management (CRM) system, records of asset maintenance / failures; feedback from Councillors and staff, and current asset management practices and technology.

Council has yet to explicitly quantify these levels of service. This will be investigated in future revisions of this Asset Management Plan. In the interim, Levels of Service and asset management expenditures for each asset class will be based on maintaining an average condition rating of 3 which represents Fair condition, meaning assets deliver acceptable levels of service but require ongoing maintenance.



Lakes Road prior to construction

4. future demand

4.1 Demand Drivers

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

4.2 Demand Forecast

Council is planning for future infrastructure based on future demand and demographics using a service-centric philosophy. In other words service needs drive asset creation and renewal strategies for an increasing population.

Population experts .ID Pty Ltd summarised the growth prospects of the Griffith LGA as follows⁴: In 2011, the total population of Griffith City was estimated to be 25,361 people. It is expected to increase by over 2,400 people to 27,796 by 2026, at an average annual growth rate of 0.61%. This is based on an increase of over 1,000 households during the period, with the average number of persons per household falling from 2.68 to 2.63 by 2026.:

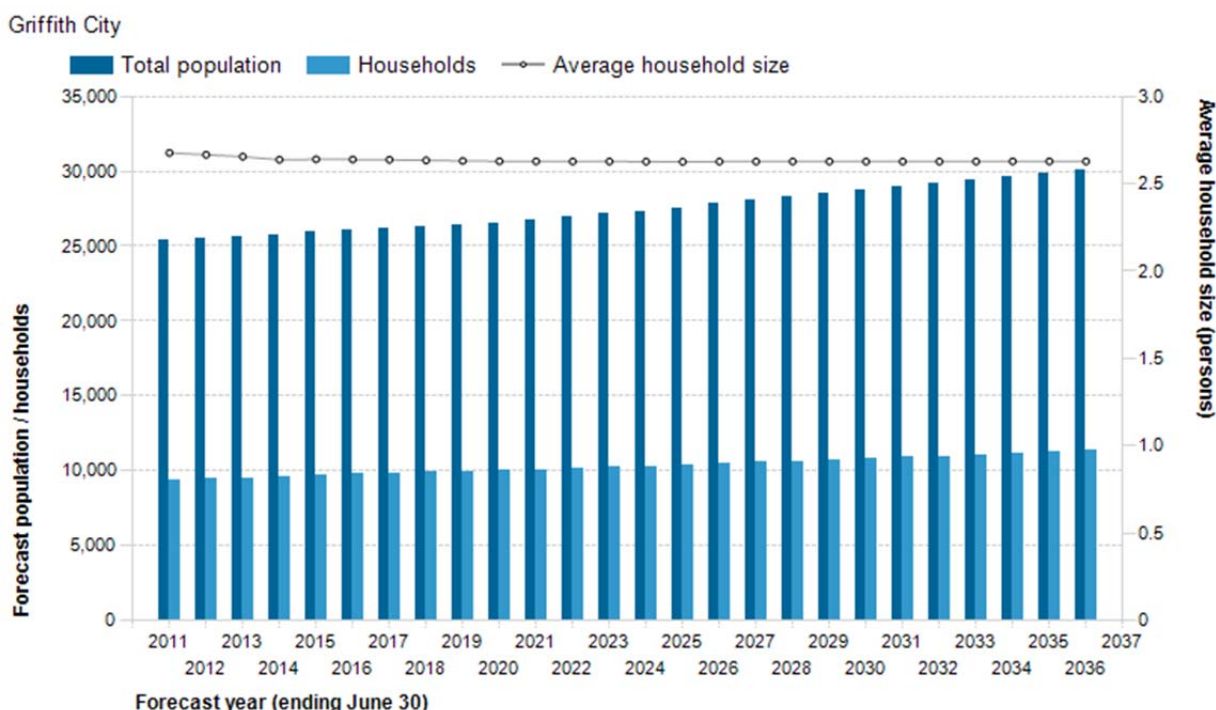


Figure 4.1: Forecasted population growth to 2036. (Forecast ID Pty Ltd)

4.3 Demand Impact on Assets

Although a number of factors including; technological advances, climate change, economic conditions and legislative changes are likely to impact the demand for Council services into the future, given Griffith's location and its current and predicted growth rate, population growth is likely to have far greater effect than any other factor on future demand. In the absence of any conflicting information it is reasonable to assume a linear relationship between total population and total demand, and the organisation plans for future demand on this basis.

⁴ Population and household forecasts, 2011 to 2036, prepared by .id the population experts, March 2017, sourced from <http://forecast.id.com.au/griffith/population-households-dwellings>

4.4 Demand Management

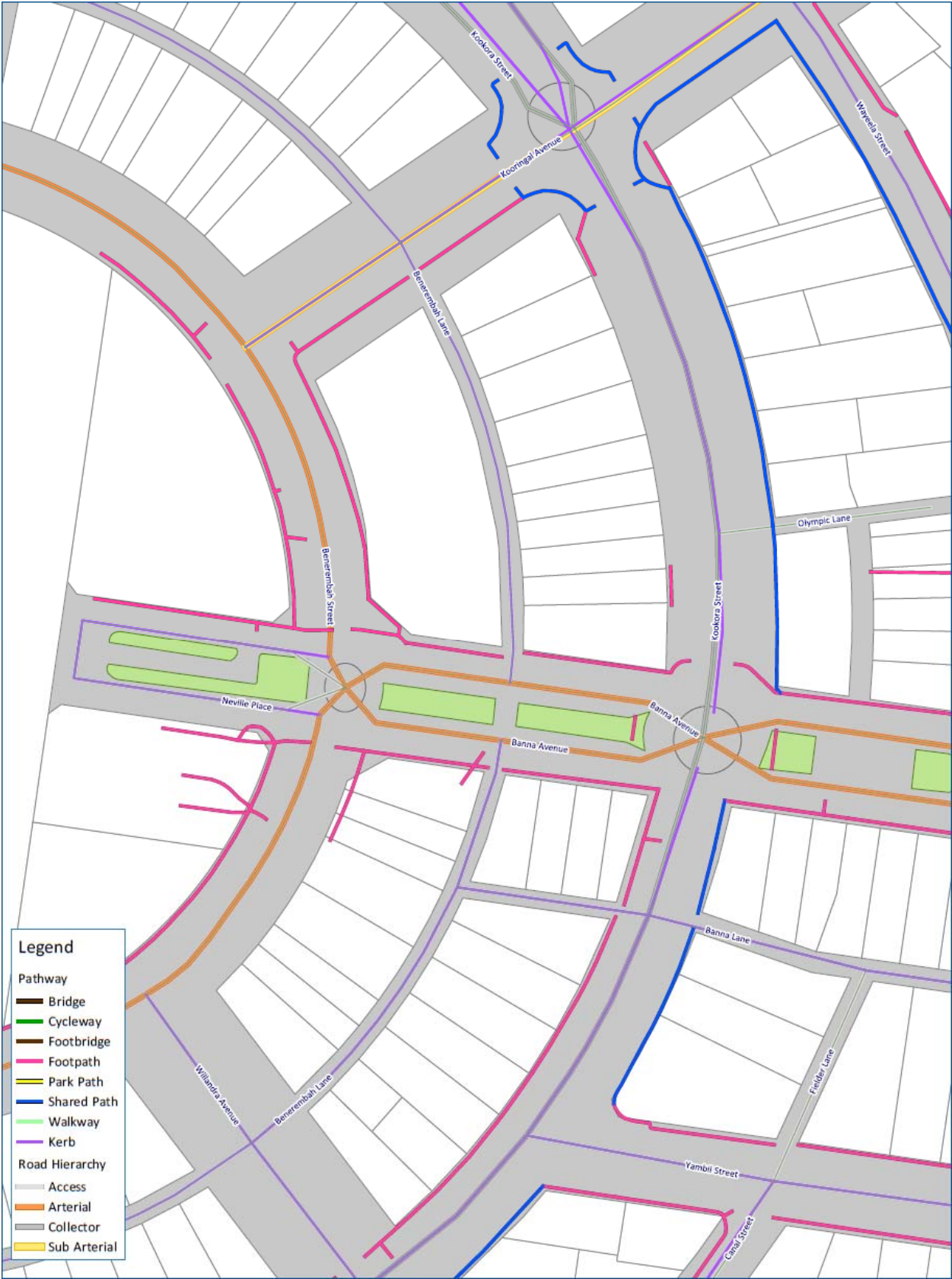
Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels). Examples of non-asset solutions include providing services from existing infrastructure such as public toilets provided in commercial premises.

4.5 Asset Programs to meet Demand

New assets required to meet growth will be constructed or acquired by the organisation as discussed in Section 5.5.

Acquiring these new assets will commit the organisation to fund ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs in Section 5.



Example of council transport asset mapping

5. lifecycle management plan

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

5.1 Background Data

5.1.1 Physical parameters

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

The location and mix of assets owned and maintained by Council adequately provides the transport services required by the community. Council has demonstrated a strong capability to maintain these assets.

The age profile of the transport assets included in this AM Plan is shown in Figure 2 below.

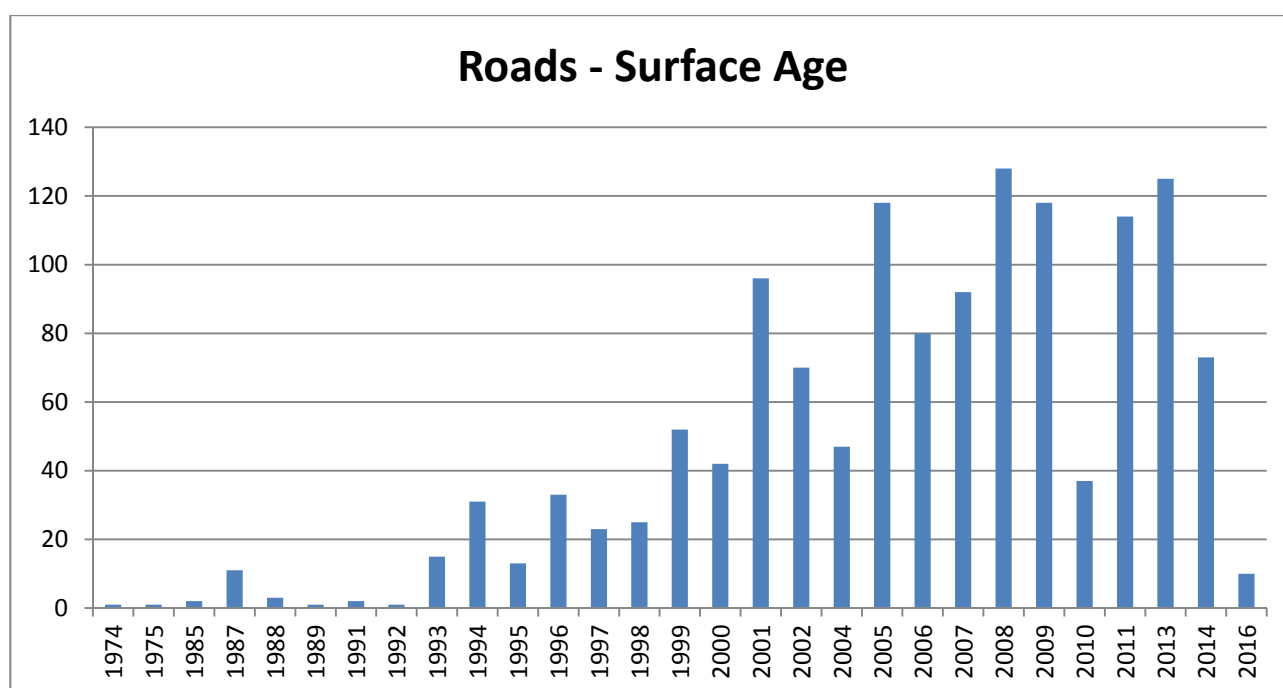


Figure 2a: Sealed Road Surface Asset Age Profile (age vs number of segments)

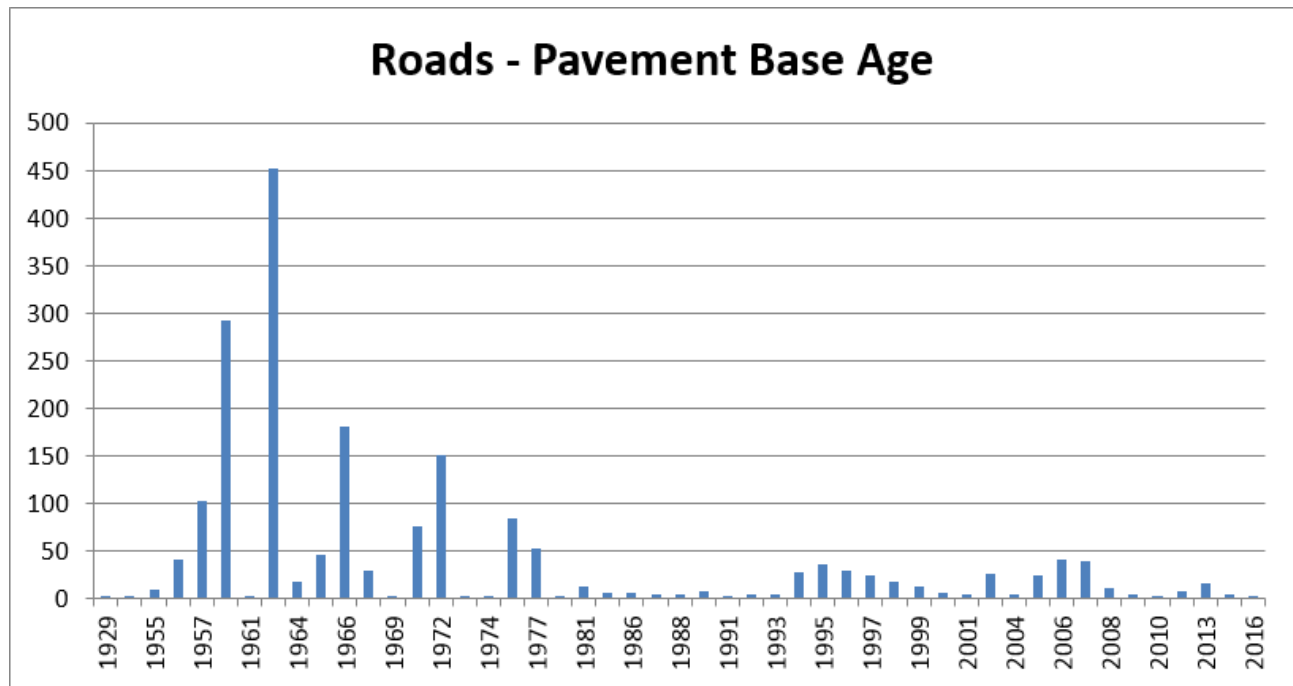


Figure 2b: Road Pavement Age Profile (age vs number of segments)

5.1.2 Asset capacity and performance

The organisation's services are generally provided to meet design standards where these are available. When deficiencies are identified, Council seeks to eliminate them via non-asset solutions such as providing alternate services or outsourcing. Where this is not possible new assets will be considered against other priorities in Council's Long Term Financial plan.

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

Table 5.1.2: Known Service Performance Deficiencies

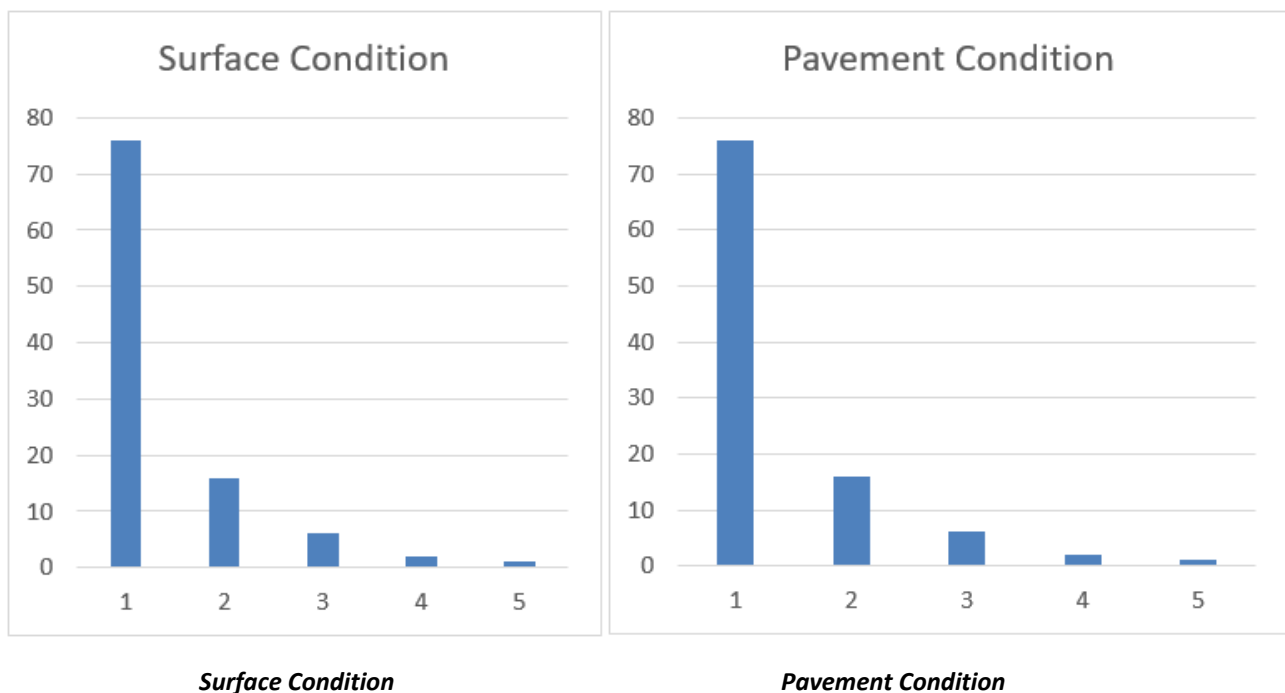
Location	Service Deficiency
Oakes Road	Poor condition, requires capital renewal
Yambil Street	Poor condition, requires capital renewal
Cooper Road	Surface type upgrade required

5.1.3 Asset condition

Condition is monitored via routine inspections and periodic condition audits. Routine road inspections are carried out in accordance with Council's Road Maintenance Management Procedure which specifies frequencies of inspections for the various classes of road. Periodic condition audits are undertaken every five years. The most recent road condition inspection was conducted by consultants in 2012. The condition profile was reported in terms of several condition parameters including line cracking, stripping, flushing, crocodile cracking, pavement defects and edge break. The condition data for the sealed road network is summarised in Figure 3 below.

A follow up inspection will be conducted in the 2016/17 financial year. It is expected that the average condition will be lower due to changes in the condition rating methodology.

Fig 3: Asset Condition Profile



Condition is measured using a 1 – 5 grading system⁵ as detailed in Table 5.1.3.

Table 5.1.3: Simple Condition Grading Model

Condition Grading	Meaning	Description of Condition
1	Very Good:	Only planned maintenance required
2	Good	Minor maintenance required plus planned maintenance
3	Fair	Significant maintenance required
4	Poor	Significant renewal/rehabilitation required
5	Very Poor	Physically unsound and/or beyond rehabilitation

⁵ IPWEA, 2015, IIMM, Sec 2.5.4, p 2 | 80.

5.1.4 Asset valuations

As of June 2016 the value of assets valued at Fair Value covered by this asset management plan are shown in Table 5.1.2:

Table 5.1.2.: Asset valuation

Asset category	Sealed roads	Unsealed roads	Bridges	Footpaths	Other Road Assets	Total
Gross replacement cost (GRC)	\$155,668,000	\$97,308,000	\$5,311,000	\$11,960,000	\$44,424,000	\$314,671,000
Accumulated Depreciation	\$11,502,000	\$27,301,000	\$2,302,000	\$5,319,000	\$10,945,000	\$57,369,000
Written Down Value	\$144,166,000	\$70,007,000	\$3,009,000	\$6,641,000	\$33,479,000	\$257,302,000

Useful lives were reviewed in 2013 by analysing Condition and maintenance / renewal data.

Key assumptions made in preparing the valuations were:

- Asset condition can be used to estimate age when age is unknown
- Asset age can be used to estimate condition when condition is unknown
- Service potential of assets degrades along predicted degradation curves
- Unit rates can be applied uniformly across all assets of like type

Major changes from previous valuations are due to

- Improvement in asset inventory records
- Review of unit rates to reflect current methodologies and pricing.

5.1.5 Historical Data

Historical data is available in previous financial statements

5.1.6 Standards and Specifications

Asset related works are carried out in accordance with the following Standards and Specifications.

- Council Safe Work Method Statements
- Relevant Industry Specifications and Codes of Practice

5.1.5 Historical Data

Historical data is available in previous financial statements

5.1.6 Standards and Specifications

Asset related works are carried out in accordance with the following Standards and Specifications.

- Road Maintenance Management Procedure
- Council Safe Work Method Statements
- Relevant Industry Specifications and Codes of Practice

5.2 Infrastructure Risk Management Plan

Due to financial constraints Council is unable to allocate sufficient funds to allow maintenance on its transport asset infrastructure without consideration of resource limits.

In order to minimise the potential hazards to road users, Council has developed a risk management approach to maintenance of Council's road assets. This will be extended to cover other transport assets (bridges, footpaths etc)

Details of the risk approach are documented in Council's Corporate Risk Plan and the road specific risk approach is covered in Council's Road Maintenance Management Procedure

5.3 Routine Operations and Maintenance Plan

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

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

5.3.1 Operations and Maintenance Plan

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

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

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

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

Actual past maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure

Asset class	2015/16 Required maintenance	2015/16 Actual maintenance
Sealed Roads	\$3,135,000	\$3,075,000
Unsealed Roads	\$1,532,000	\$1,525,000
Bridges	\$6,000	\$1,000
Footpaths	\$35,000	\$20,000
Other road assets	\$106,000	\$75,000
Total	\$4,814,000	\$4,696,000

Maintenance expenditure levels are considered to be adequate to meet projected service levels.

Assessment and prioritisation of reactive maintenance is undertaken by the organisation's staff using experience and judgment.

5.3.2 Operations and Maintenance Strategies

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

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

Asset hierarchy

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

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

Table 5.3.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Arterial	The prime function of these local roads is to provide for major regional and inter-regional traffic movement in a safe and operational efficient manner.
Sub Arterial	The prime function of these local roads is to connect local towns, villages or areas to the wider arterial road network.
Collector	The prime function of these local roads is to collect and distribute traffic and act as feeder service to arterial and sub arterial roads.
Access	The prime function of these local roads is to provide access to properties and industries in urban and rural areas.
Lanes	The prime function of lanes is to provide rear access to properties and industries in urban and rural areas.
Limited Access	These roads provide limited access to properties for carry out farming or other legitimate activities. These roads are generally dry weather access and may be formed or unformed and not servicing dwellings.

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. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities are detailed in Table 5.3.2.1.

No critical assets have been identified in the road network due to high level of redundancy in the road and footpath networks. It was considered that due to this redundancy there are no areas of the LGA that have a critical consequence of failure of any one asset.

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock.

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

Maintenance is funded from the operating budget where available.

5.4 Renewal/Replacement Plan

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

5.4.1 Renewal plan

Assets requiring renewal/replacement are identified by using the Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed as part of comprehensive revaluation of road assets in 2013.

Table 5.4.1: Useful Lives of Assets

Asset (Sub)Category	Useful life
Sealed road surface	15 to 20 years
Sealed road structure	20 to 120 years
Unsealed roads	20 to 120 years
Bridge – Concrete	100 to 120 years
Bridge - Other	100 to 120 years
Kerb, gutter, paths	14 to 66 years

5.4.2 Renewal and Replacement Strategies

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

- Planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner,
- Undertaking project scoping for all capital renewal and replacement projects to identify:
 - the service delivery 'deficiency', present risk and optimum time for renewal/replacement,
 - the project objectives to rectify the deficiency,
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency,

- and evaluate the options against evaluation criteria adopted by the organisation, and
- select the best option to be included in capital renewal programs,
- Using 'low cost' renewal methods (cost of renewal is less than replacement) wherever possible,
- Maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and the Council/Board,
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs,
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required ,
- Review management of capital renewal and replacement activities to ensure the organisation is obtaining best value for resources used.

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (eg replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (eg roughness of a road).⁶

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

- Have a high consequence of failure,
- Have a high utilisation and subsequent impact on users would be greatest,
- The total value represents the greatest net value to the organisation,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Where replacement with modern equivalent assets would yield material savings.⁷

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5.4.2.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

Criteria
Essential for service
Alignment with Strategic Plan
Affordability (both Capital and Maintenance)
Importance to Community

⁶ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

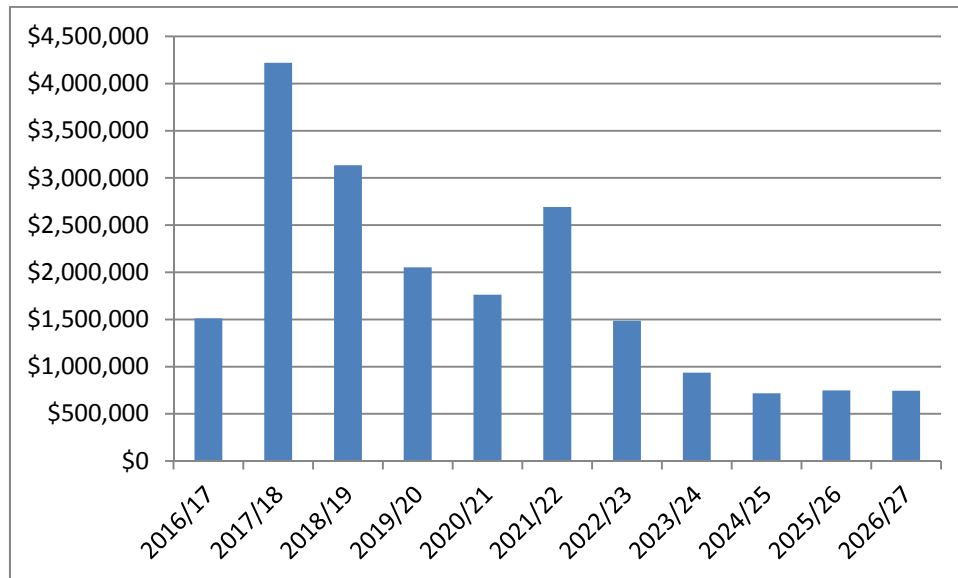
⁷ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

5.4.3 Summary of future renewal and replacement expenditure

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

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

Fig 5: Projected Capital Expenditure



Deferred renewal and replacement, ie those assets identified for renewal and/or replacement and not scheduled in capital works programs are to be included in the risk analysis process in the risk management plan.

Renewals and replacement expenditure in the organisation's capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the organisation from land development. These assets from growth are considered in Section 4.4.

5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in table 5.5.1 below.

Table 5.5.1: New Assets Priority Ranking Criteria

Criteria
Essential for service
Alignment with Strategic Plan
Affordability (both Capital and Maintenance)
Importance to Community

5.5.2 Capital Investment Strategies

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

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

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets disposal can incur decommissioning and disposal costs, but can also result in annual savings from not having to fund operations and maintenance of the assets. When assets are identified for potential disposal they will be investigated to determine the impact on levels of service and to see what options are available for alternate service delivery, if any. Any revenue gained from planned asset disposals will be accommodated in the organisation's long term financial plan. Cash flow projections from asset disposals are not currently available but will be reconsidered in future revisions of this asset management plan.

5.7 Service Consequences and Risks

The organisation has prioritised decisions made in adopting this AM Plan to obtain the optimum benefits from its available resources.

5.7.1 What we cannot do

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

Project	Comments	Cost
Cultural Precent Masterplan Implementation (Includes the Clock Restaurant)	Escalated level of service, possible funding from major projects fund	\$3,000,000
50/50 Sealing of Roads	Lower priority but necessary in medium / longer term, fund from general purpose revenue (50%) & private person/entity (50%)	\$50,000
Rural Sealed - Heavy Patching	Can only be funded from general purpose revenue if available	\$1,320,679

5.7.2 Service consequences

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

- CBD Cultural precinct project is delayed
- Reduced sealing and heavy pathing in first year of plan

5.7.3 Risk consequences

The projects that cannot be undertaken are not considered to pose a risk to staff or the community.

6. financial summary

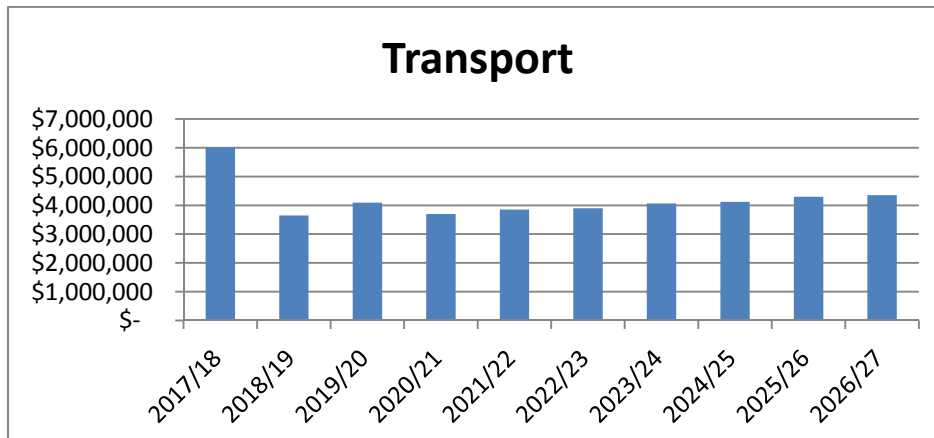
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

6.1 Financial statement and projections

This asset management plan covers capital costs such as new assets, renewals, rehabilitation. non-capital expenditure such as maintenance, operating costs and depreciation. All asset related expenditure identified in this Asset Management Plan has been incorporated into Council's Long Term Financial Plan.

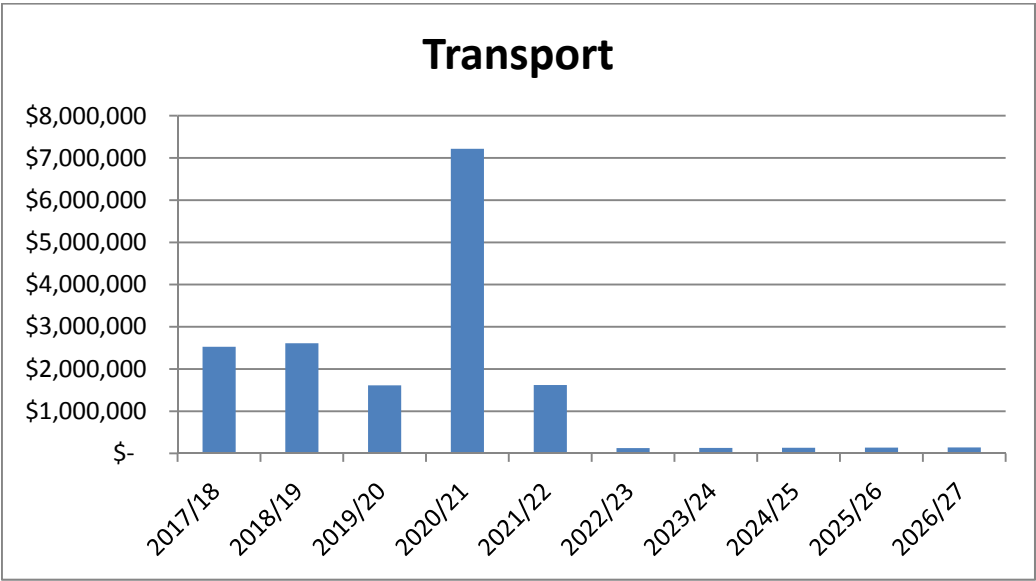
Capital Renewals based on Council's 10 Year Capital Works Program are shown in Figure 6.1 below. The projections include all planned capital expenditure (renewal and upgrade/expansion/new assets). The figures do not include operational maintenance costs.

Fig 6.1: Projected capital renewals expenditure



Capital Additions based on Council's 10 Year Capital Works Program are shown in Figure 6.2 below. The projections include all planned capital expenditure (renewal and upgrade/expansion/new assets). The figures do not include operational maintenance costs.

Fig 6.2: Projected capital additions expenditure



6.1.1 Sustainability of service delivery

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include maintenance and asset consumption (depreciation expense).

Several ratios used as indicators of financial sustainability are listed in the Table 6.1 below which is followed by comments regarding the results.

Table 6.1 Financial sustainability ratios

Ratio	Formula	Benchmark	Results
Asset Renewal Funding Ratio	$\frac{\text{Asset Renewals}}{\text{Depreciation and Impairment}}$	Minimum >= 100%	119%
Infrastructure backlog ratio	$\frac{\text{Estimated cost to bring assets to a satisfactory standard}}{\text{Carrying value of the asset}}$	Maximum < 2%	1.80%
Asset maintenance ratio	$\frac{\text{Actual asset maintenance}}{\text{Required asset maintenance}}$	Minimum > 1.00%	100%

Capital expenditure ratio	$\frac{\text{Annual capital expenditure}}{\text{Annual depreciation}}$	Minimum > 110%	165%
Lifecycle costs vs Lifecycle expense	$\frac{\text{Ops. + Maintenance. + Dep. Expense}}{\text{Renewals + Maintenance}}$	Minimum >= 100%	109%

Asset Renewal Funding Ratio

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 119% of the funding required for the optimal renewal and replacement of its road assets.

Infrastructure backlog ratio

The Infrastructure backlog ratio indicates the proportion of backlog against the total value of a Council's infrastructure. The very low backlog for these assets reflects the view that assets are meeting the currently accepted service levels

Asset maintenance ratio

This ratio compares actual vs. required annual asset maintenance. The result indicates council is has increased its maintenance spend on previous years. The figure for required asset maintenance is set based on previous years' actual maintenance figures. Future editions of this plan will include extensive analysis of maintenance requirements. In the interim the required annual asset maintenance figure will remain at \$ 4,814,000.

Capital expenditure ratio

This ratio indicates the extent to which Council is expanding its asset base through capital expenditure on both new assets and the replacement and renewal of existing assets. The moderately high rate in this case is reflective of the large number of capital projects scheduled over the next ten years.

Life Cycle Cost Vs Lifecycle expense

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is \$7,809,000 per year.

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. The life cycle expenditure over the 10 year planning period is presently \$8,488,000 per year.

For the assets covered by this plan there is therefore a funding surplus of \$678,000 per year. As a percentage life cycle expenditure is 109% of life cycle costs. The life cycle costs and life cycle expenditure comparison highlights any difference between present outlays and the average cost of providing the service over the long term.

6.1.2 Projected expenditures for long term financial plan

Projected expenditures are provided in Appendix A: Budgeted Expenditures Accommodated in LTFP

6.2 Funding Strategy

Infrastructure assets will be funded using the following sources. See council's long term financial plan for details of the mix of funding for each year of the plan.

- New Loans, Funded from Unspent Loans
- Funded from Grants/ Contributions
- Funded from Reserve
- Funded by Rates, Fees & Charges

6.3 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan and risks that these may change are shown in Table 6.4.

Table 6.4: Key Assumptions made in AM Plan and Risks of Change

Key Assumptions	Risks of Change to Assumptions
Current maintenance expenditure is an indication of future maintenance expenditure.	Maintenance costs could change at a rate higher than expected.
Current expenditure costs reflect future costs.	Capital expenditure could increase due to changes in external factors such as material and energy costs.
All costs are based on current 2017 dollar values and are not adjusted by the inflation rate for the particular year of works.	Real costs will be based on dollar values in the year the expenditure is made.
The expenditure and valuations projections in this AM Plan are based on best available data.	Currency and accuracy of data is critical to effective asset and financial management.
The current levels of service will remain constant over the life of this Asset Management Plan.	Levels of service may change and thus impact on the cost of providing the services.

7. plan improvement and monitoring

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Council's Finance system is Authority Financials.

Accountabilities for financial systems

The system is managed by Council's Business Cultural & Financial Services group.

Accounting standards and regulations

Financial reporting is prepared in accordance with the requirements of the Local Government Act 1993 and relevant Australian Accounting Standards including:

AASB 116 Property, Plant and Equipment

AAS 27 Financial Reporting by Local Government

AAS 136 Impairment of Assets

AAS 137 Provisions, Contingent Liabilities and Contingent Assets

IFRS 13 Fair Value Measurement

Capital/maintenance threshold

Council Buildings and land including open space and land under roads is 100% Capitalised. All other Items of infrastructure, property, plant and equipment are not capitalised unless their cost of acquisition exceeds \$1000.

7.1.2 Asset management system

Council's asset register is maintained in Assetic MyData. Long term modelling is done in Assetic MyPredictor. Spatial data is maintained in Council's Geospatial Information System (GIS) system using QGIS.

Accountabilities for asset management system and data maintenance

The asset management and GIS systems are managed by Council's Asset Management and GIS team within the Business Cultural & Financial Services group.

7.1.3 Information Flow Requirements and Processes

The key information that flows into this plan includes:

- The technical asset register data on size, age, value, condition, remaining life of the network;
- The unit rates for categories of work/material;
- The adopted service levels;
- Projections of various factors affecting future demand for services;
- Correlations between maintenance and renewal, including degradation models;
- Data on new assets acquired by council.

The key information flowing from this plan are:

- The assumed Works Program and trends;
- The resulting budget requirements for renewal;
- The useful life analysis.

These will impact Council's LTFP, Delivery Program, annual Operational Plan and budget.

7.2 Improvement Program

Asset management improvement strategies are discussed in Councils Asset Management Strategy. In summary the following actions are planned for all council assets:

- Capture actual expenditure on asset renewal against assets so that more accurate modelling can be implemented
- Strategic improvements to GIS to strengthen links with the asset management system
- Establish levels of service in line with community consultation
- Implement advanced asset assessment practices
- Enhanced long-term modelling
- Implement strategic maintenance within the asset system

7.3 Monitoring and Review Procedures

This asset management plan will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

The 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 plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within 1 year of each Council election.

7.4 Performance Measures

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

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into the organisation's long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan,
- The degree to which the existing and projected service levels and service consequences resulting from what we cannot do, risks and residual risks are incorporated into the organisation's Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

8. references

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

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

IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/AIFMG.

IPWEA, 2011, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/IIMM

Griffith City Council, Community Strategic Plan "guiding Griffith 2040"

Griffith City Council, Delivery Program and Operational Plan 2017/18

Walla Ave/Bromley Rd/Kidman Way Southern Bypass (Industrial Link)	8.2.1 8.2 Maintain and develop an effective transport network (public roads, pathways, pedestrian access and transport corridors) for Griffith and villages.	5,600	0	0	0	5,600	0	0	0	0	0	0
New Traffic Counters	8.2.3 8.2 Maintain and develop an effective transport network (public roads, pathways, pedestrian access and transport corridors) for Griffith and villages.	14	0	14	0	0	0	0	0	0	0	0
Kerb & Gutter Renewal (New Expenditure)	8.2.3 8.2 Maintain and develop an effective transport network (public roads, pathways, pedestrian access and transport corridors) for Griffith and villages.	548	95	0	102	0	109	0	117	0	125	0
Reseal Car Parks (New Expenditure)	8.2.3 8.2 Maintain and develop an effective transport network (public roads, pathways, pedestrian access and transport corridors) for Griffith and villages.	283	0	49	0	53	0	56	0	60	0	65
PAMP Implementation	2.3.2 2.3 Maximise opportunities to secure external funding for partnerships, projects and programs to improve the quality of life for residents and visitors.	275	24	25	25	26	27	28	29	30	30	30
Cycleways (Reseals & New Paths)	2.3.2 2.3 Maximise opportunities to secure external funding for partnerships, projects and programs to improve the quality of life for residents and visitors.	1,290	110	114	118	122	126	131	135	140	145	150
CBD Paving Replacement	8.2.3 8.2 Maintain and develop an effective transport network (public roads, pathways, pedestrian access and transport corridors) for Griffith and villages.	607	52	54	55	57	59	61	64	66	68	71
Total		58,290	8,533	6,257	5,706	10,915	5,473	4,026	4,196	4,253	4,435	4,495

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
WDCRD	Written down current replacement cost

appendix C 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 non-critical 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 arm's length transaction.

Financing gap

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

Heritage asset

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

Impairment Loss

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

Infrastructure assets

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

Investment property

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

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

Key performance indicator

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

Level of service

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

Life Cycle Cost *

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

Life Cycle Expenditure

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

Loans / borrowings

See borrowings.

Maintenance

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

- **Planned maintenance**

Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

- **Reactive maintenance**

Unplanned repair work that is carried out in response to service requests and management/supervisory directions.

- **Specific maintenance**

Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

- **Unplanned maintenance**

Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *

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

Materiality

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

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)

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

Non-revenue generating investments

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

Operations

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

Operating expenditure

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

Operating expense

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

Operating expenses

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

Operations, maintenance and renewal financing ratio

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

Operations, maintenance and renewal gap

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

Pavement management system (PMS)

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

PMS Score

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

Rate of annual asset consumption *

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

Rate of annual asset renewal *

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

Rate of annual asset upgrade/new *

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

Recoverable amount

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

Recurrent expenditure

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

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

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

Renewal

See capital renewal expenditure definition above.

Residual value

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

Revenue generating investments

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

Risk management

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

Section or segment

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

Service potential

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

Service potential remaining

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

Specific Maintenance

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

Strategic Longer-Term Plan

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

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

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

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

Value in Use

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

Source: IPWEA, 2009, AIFMG Glossary

Additional and modified glossary items shown *