

Asset Management Plan

# Transport Assets

2022 – 2026

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<b>Document Control</b>	<b>Asset Management Plan</b>
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The Institute of Public Works Engineering Australasia

# Contents

- 1.0 EXECUTIVE SUMMARY 5**
- 1.1 The Purpose of the Plan..... 5
- 1.2 Asset Description ..... 7
- 1.3 Levels of Service..... 7
- 1.4 Future Demand ..... 7
- 1.5 Lifecycle Management Plan ..... 8
- 1.6 Financial Summary ..... 8
- 1.7 Asset Management Planning Practices..... 9
- 1.8 Monitoring and Improvement Program ..... 10
  
- 2.0 INTRODUCTION 11**
- 2.1 Background ..... 11
- 2.2 Goals and Objectives of Asset Ownership ..... 12
  
- 3.0 LEVELS OF SERVICE 14**
- 3.1 Customer Research and Expectations ..... 14
- 3.2 Strategic Direction ..... 17
- 3.3 Legislative Requirements..... 18
- 3.4 Customer Values ..... 18
- 3.5 Customer Levels of Service ..... 19
- 3.6 Technical Levels of Service..... 22
  
- 4.0 FUTURE DEMAND 26**
- 4.1 Demand Drivers ..... 26
- 4.2 Demand Impact and Demand Management Plan ..... 26
- 4.3 Asset Programs to meet Demand ..... 26
- 4.4 Climate Change Adaptation ..... 26
  
- 5.0 LIFECYCLE MANAGEMENT PLAN 28**
- 5.1 Background Data ..... 28
- 5.2 Operations and Maintenance Plan ..... 35
- 5.3 Renewal Plan ..... 41
- 5.4 Summary of future renewal costs..... 43
- 5.5 Acquisition Plan ..... 45
- 5.6 Disposal Plan..... 48
- 5.7 Summary of asset forecast costs ..... 48
  
- 6.0 RISK MANAGEMENT PLANNING 51**

6.1	Critical Assets.....	51
6.2	Risk Assessment.....	51
6.3	Service and Risk Trade-Offs .....	53
<b>7.0</b>	<b>FINANCIAL SUMMARY</b>	<b>54</b>
7.1	Financial Sustainability and Projections .....	54
7.2	Funding Strategy.....	57
7.3	Valuation Forecasts .....	58
7.4	Key Assumptions Made in Financial Forecasts .....	58
7.5	Forecast Reliability and Confidence.....	58
<b>8.0</b>	<b>PLAN IMPROVEMENT AND MONITORING</b>	<b>60</b>
8.1	Status of Asset Management Practices .....	60
8.2	Improvement Plan .....	60
8.3	Monitoring and Review Procedures .....	61
8.4	Performance Measures .....	61
<b>9.0</b>	<b>REFERENCES</b>	<b>62</b>
<b>10.0</b>	<b>GLOSSARY</b>	<b>63</b>

## 1.0 EXECUTIVE SUMMARY

### 1.1 The Purpose of the Plan

The purpose of the Asset Management Plan (AM Plan) is to consider Council’s priorities and focus, associated strategic documents and the management of the transport network.

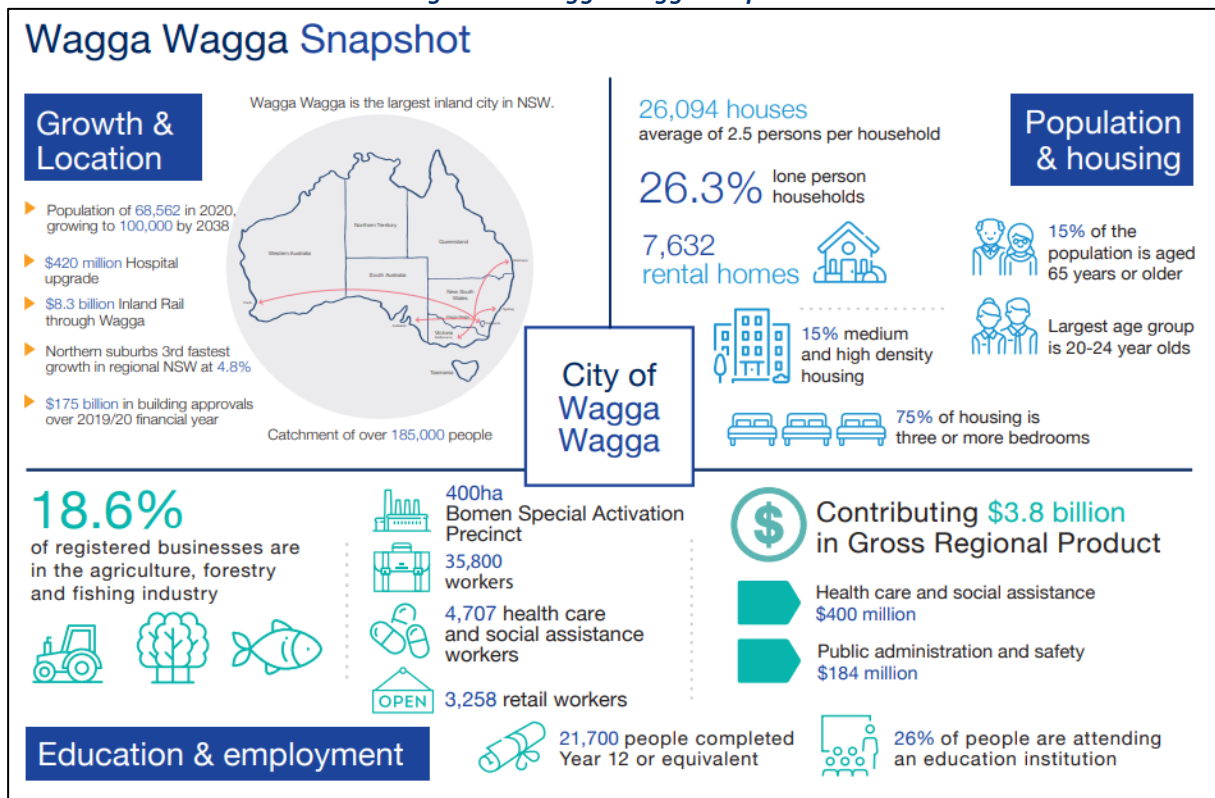
This AM Plan is to be read with the Council’s [Community Strategic Plan 2040 – Wagga View](#) and asset planning documents including the Asset Management Policy and Asset Management Strategy. Other key planning documents are listed below:

- Community Strategic Plan 2040 – Wagga View
- Long Term Financial Plan 2022-2023
- Local Strategic Planning Statement – Planning for the future: Wagga 2040
- Wagga Wagga Integrated Transport Strategy and Implementation Plan (WWITS) 2040
- Wagga Wagga Local Infrastructure Contribution (LICP) Plan 2019 – 2034

The [Wagga Wagga Local Strategic Planning Statement \(LSPS\) –Wagga 2040](#) and the associated [Wagga Wagga Integrated Transport Strategy and Implementation Plan \(WWITS\) 2040](#) define Council’s priorities and future demands.

The LSPS sets the long-term strategic framework for planning and development in the City of Wagga Wagga local government area over the next 20 years. It addresses issues of strategic significance to the Council, guiding development or introduction of new planning policies, strategies or actions related to land use and development. The below image, from the LSPS, provides a snapshot of the Wagga Wagga local government area.

**Figure 1 – Wagga Wagga Snapshot**

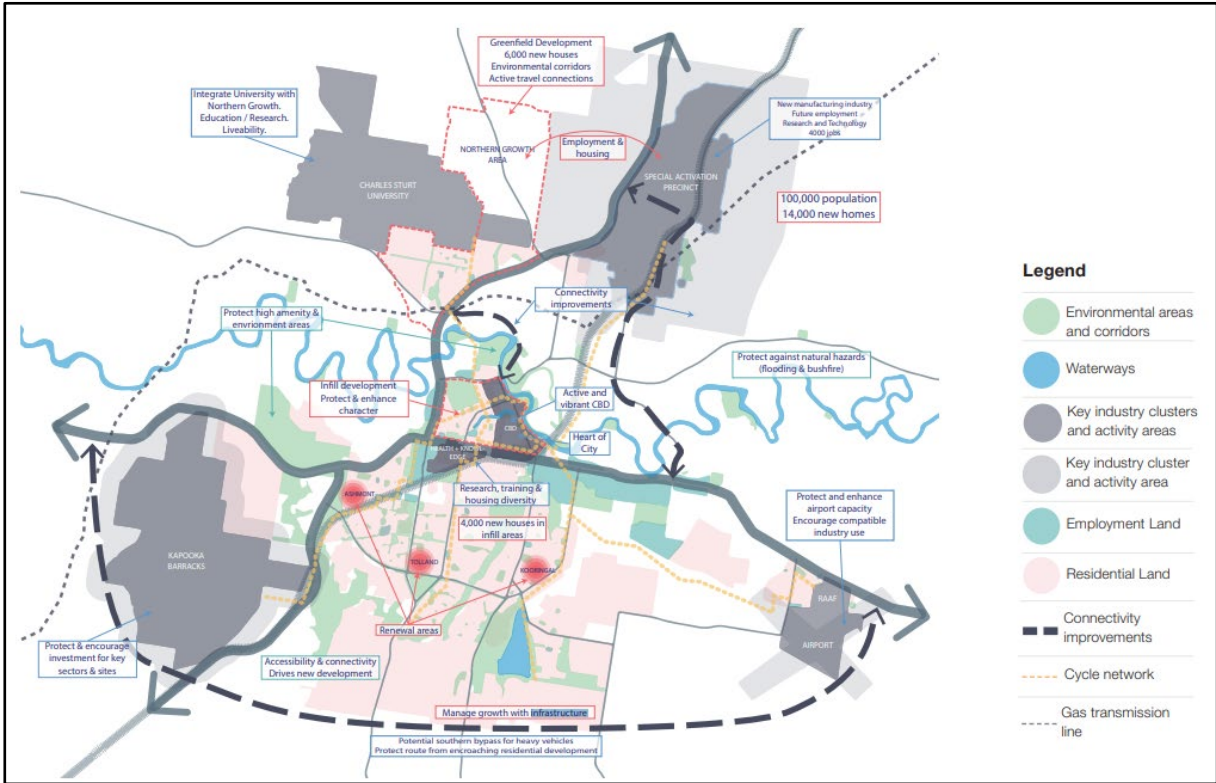


Source - [Wagga Wagga Local Strategic Planning Statement \(LSPS\) –Wagga 2040](#)

The LSPS sets out principles on which Council will make decisions into the future. They will be based on connectivity to the central core and accessibility to services and community facilities to ensure the growth of the city is financially and environmentally sustainable. The below image from the Wagga Wagga Integrated

Transport Strategy and Implementation Plan (WWITS) 2040 shows how the transport network provides this connection.

**Figure 2 – Wagga Wagga Transport Network**



Source - [Wagga Wagga Integrated Transport Strategy and Implementation Plan \(WWITS\) 2040](#)

The city’s existing road and transport network has developed over time to cater for increasingly expanding outer settlements. In the future the focus will be on implementing an integrated approach, if Council is to support our growing population, economy and position as a regional centre.

A thriving and efficient city is critical in supporting the growth of surrounding rural areas, local centres and smaller villages. Transport efficiency, safety and sustainability through reduced congestion and travel time will anchor Wagga Wagga as a facilitator for economic and employment growth.

The Inland Rail project will open up Melbourne and Brisbane ports, and the Bomen Industrial Park supported by the Riverina Intermodal Freight and Logistics (RiFL) Hub will be one of the most important freight and logistic destinations and hubs in Australia. Wagga Wagga City Council must ensure that freight and industrial activity can function efficiently to ensure that investment in the area will lead to continued economic development in the region.

The WWITS emphasises the following:

- Capitalising on investment - working with industry to make best use of government investment.
- Importance of corridor planning and freight movement - an arterial and sub-arterial road network that is strategic will reduce pressure on local roads.
- The liveability and health of our city is important - local streets should be safe for children and pedestrians to walk and play.
- Heavy vehicles and high traffic movements should be separated from our local streets.
- Active travel should be safe, efficient and comfortable - alternative modes of transit will only be utilised if suitable end of trip facilities are provided and parents are comfortable letting children ride to activities.
- The core of the city needs to be preserved and enhanced.
- The health precinct needs structure planning to ensure our vulnerable patients can obtain care efficiently and businesses can thrive and develop around the hospital.

- Emerging smart technologies need to be incorporated with end of trip facilities to link people across the commercial core to allow new and smaller businesses to share facilities.
- Partner with Transport for NSW and local transport operators to investigate and trial a more flexible public transport system to better serve the entire community.

The second purpose of this Asset Management Plan is to provide information about infrastructure assets together with actions required to deliver an agreed level of service in the most cost-effective manner, while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to be provided over the 10 year planning period. The AM Plan will link to Council's Long Term Financial Plan (LTFP) which considers a 10 year planning period.

## 1.2 Asset Description

This plan covers the infrastructure assets that provide transport services to the community.

**Table 1 – Transport Network Size and Value**

Asset Category	Number/Length	Replacement Value
Bridges (includes foot, vehicle and rail bridges)	91	\$85,913,045
Bus and Taxi Shelters	63	\$720,189
Carparks	83	\$7,226,393
Culverts	4,532	\$44,421,104
Footpaths	248 km	\$47,131,454
Shared Paths and Cycleways	58 km	\$11,011,293
Kerb and Gutter	756 km	\$46,014,533
Sealed Roads – seal, pavement and formation	1,212 km	\$580,229,905
Unsealed Roads – pavement and formation	1,097 km	\$59,906,515
<b>TOTAL</b>		<b>\$882,574,431</b>

## 1.3 Levels of Service

The allocation in the planned budget is sufficient to continue providing existing services at current levels only for the planning period as shown in the Technical Levels of Service.

The main service consequences of the planned budget are:

- The community expectations around transport assets and their levels of service may not be satisfied,
- The technical levels of service to best achieve the desired community outcomes may be restricted due to budget constraints.

## 1.4 Future Demand

The factors influencing future demand are consistent with the LSPS and the impacts they have on service delivery are created by:

- population change,
- changes in demographics,
- seasonal factors,
- economic factors,
- community expectations,
- technological changes,
- climate change,
- land subdivision and urban infill and consolidation.

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of 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.

The WWITS 2040, includes future demand themes as an outcome of public consultation from 2015 to 2017 and developed an Implementation Plan – specifically for Freight & Logistics and Road Network Themes.

**1.5 Lifecycle Management Plan**

**1.5.1 What does it Cost?**

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for Transport assets is estimated as \$357,760,817 or \$35,776,082 on average per year.

**1.6 Financial Summary**

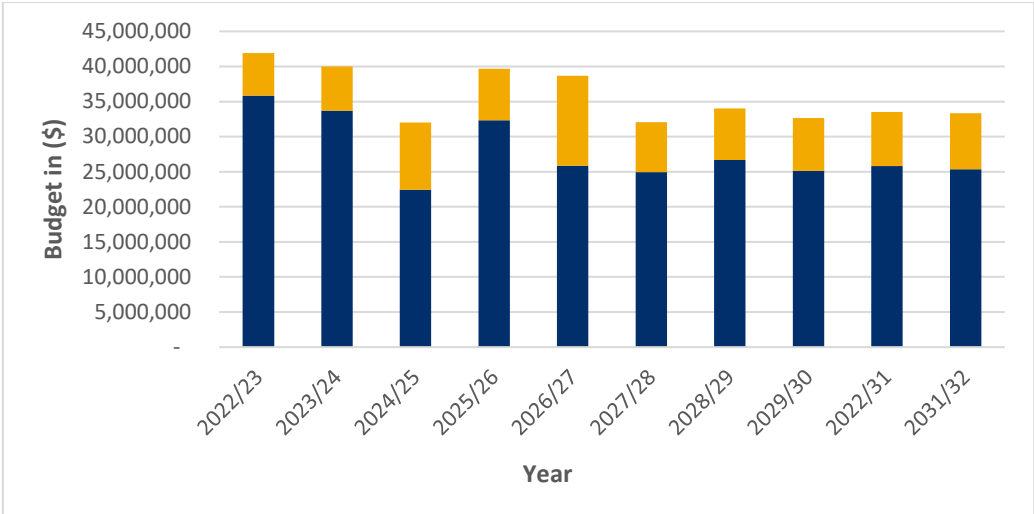
**1.6.1 What we will do**

The estimated available funding for the 10 year period is \$278,027,727 or \$27,802,773 on average per year as per the Long Term Financial plan. This is 78% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long term financial plan can be provided. Informed decision making depends on the AM Plan emphasising the consequences of planned budgets on the service levels provided and risks.

The anticipated planned budget for transport assets leaves a shortfall of \$7,973,309 on average per year of the forecast lifecycle costs required to provide services in the AM Plan, compared with the planned budget currently included in the Long Term Financial Plan. This is shown in the figure below.

**Figure 3 - Forecast Lifecycle Costs and Planned Budgets**





We plan to provide the following:

- Operational activities to provide reactive maintenance as required and continue to improve our understanding of the condition (at the present day and as a trend) for all transport assets,
- Provide scheduled maintenance to high priority transport assets,
- Renew transport assets in condition 4 and 5 on a priority basis,
- Provide upgrades of identified assets, as required, to support the growth of the city, and
- Increase the transport network to support new development areas.

#### **1.6.2 What we cannot do**

We currently do **not** allocate enough budget to sustain these services at the proposed standard. Works and services that cannot be provided under present funding levels are:

- Maintain all of the transport assets at all times,
- Conduct Level 3 bridge assessments on the entire bridge network,
- Renew any bridges, carparks and footpaths in condition 4 and 5,
- Renew all transport assets in condition 4 and 5, and
- Increase the footpath and shared path network as planned without grant funding.

#### **1.6.3 Managing the Risks**

Our present budget levels are sufficient to continue to manage risks in the short to medium term.

The main risk consequences are:

- Potentially dissatisfied members of the Community
- Periodic increased maintenance requirements on affected assets
- Lower travelling speeds on roads and/or greater risk of road accidents through driver inattention on road sections with identified functional deficiencies
- Increased insurance claims

We will endeavor to manage these risks within the available funding by:

- Continuation of current infrastructure maintenance practices
- Ongoing review of infrastructure maintenance practices
- Ongoing review of acceptable service levels
- Continuing to monitor known service deficiencies/risks

### **1.7 Asset Management Planning Practices**

Wagga Wagga City Council systems to manage assets include:

- MyData – Asset Management System - Assetic
- ArcInfo – Geographic information system - ESRI
- FinanceOne – Accounting System - TechnologyOne
- Property & Rating – Request Management - TechnologyOne

Key assumptions made in this AM Plan are:

- The timing of capital renewals within the asset register is determined by adding the useful life to the year of acquisition or year of last renewal,
- An estimate of renewal lifecycle costs is projected from external based on condition assessment, modelling systems and supplemented with, or based on, expert knowledge.

This AM Plan is based on a reliable level of confidence information.

## **1.8 Monitoring and Improvement Program**

The next steps resulting from this AM Plan to improve asset management practices are documented in Section 8 of this document. Council will monitor and improve its;

- Overall Asset Management Framework practices and processes; and
- Specific items relevant to each Asset Management Plan:
  - Continuously improve asset data and its management
  - Develop a framework to measure transport asset function and capacity
  - Model for longer term renewals and upgrades
  - Develop an Infrastructure Risk Management Plan
  - Improve capital works planning and increase the planning horizon to 20 years
  - Estimate new assets from growth factor
  - Develop resilience measures

## 2.0 INTRODUCTION

### 2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of transport services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read in conjunction with Council's planning documents:

- Community Strategic Plan 2040 – Wagga View
- Long Term Financial Plan 2022-2023
- Local Strategic Planning Statement – Planning for the future: Wagga 2040
- Wagga Wagga Integrated Transport Strategy and Implementation Plan (WWITS) 2040
- Wagga Wagga Local Infrastructure Contribution (LICP) Plan 2019 – 2034

The infrastructure assets included in this plan have a total replacement value of **\$882,574,431** as at 30 June 2021.

Key stakeholders in the preparation and implementation of this AM Plan are shown below.

**Table 2 - Key Stakeholders**

Key Stakeholder	Role in Asset Management Plan
Wagga Wagga Councillors	- Represent the needs of the community - Allocate resources to meet planning objectives in providing services while managing risks - Ensure service sustainability
Federal Member	Represent Community interest within the federal government division of Riverina.
State Member	Represent Community interest within the state government division of Wagga Wagga.
General Manager and the Executive	Direct Council Staff in the balancing of agreed service levels and the fiscal ability to provide services.
Council Staff	To maintain a proactive approach to customer requests, and to utilise a holistic asset management system and procedures which can better inform decisions by Council
Wagga Wagga Community (including residents and businesses)	Report perceived shortcomings, damage, safety concerns, etc. with the current infrastructure in relation to their needs
Emergency Services	Report perceived shortcomings, damage, safety concerns, etc. with the current infrastructure in relation to their needs
Federal & State Government Authorities and Agencies	Providing input with regard to overall infrastructure performance in conjunction with infrastructure under their jurisdiction.
Utility Companies	Providing input with regard to access to their assets
Developers	Providing input with regard to their interests in future investment in the infrastructure
Neighbouring Councils	Maintaining a dialogue with other municipal authorities with regard to asset management practices, construction standards, resource sharing, etc
National Heavy Vehicle Regulator	Driving sustainable improvement to safety, productivity and efficiency outcomes across the heavy vehicle transport sector
Transport for NSW	Traffic and funding interactions between State, Regional and Local roads
Wagga Wagga Traffic Committee	Provide advice on transport network operations and requirements

## 2.2 Goals and Objectives of Asset Ownership

Our goal for 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
- Linking to a Long Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

- Levels of service – specifies the services and levels of service to be provided,
- Risk Management,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 <sup>1</sup>
- ISO 55000<sup>2</sup>

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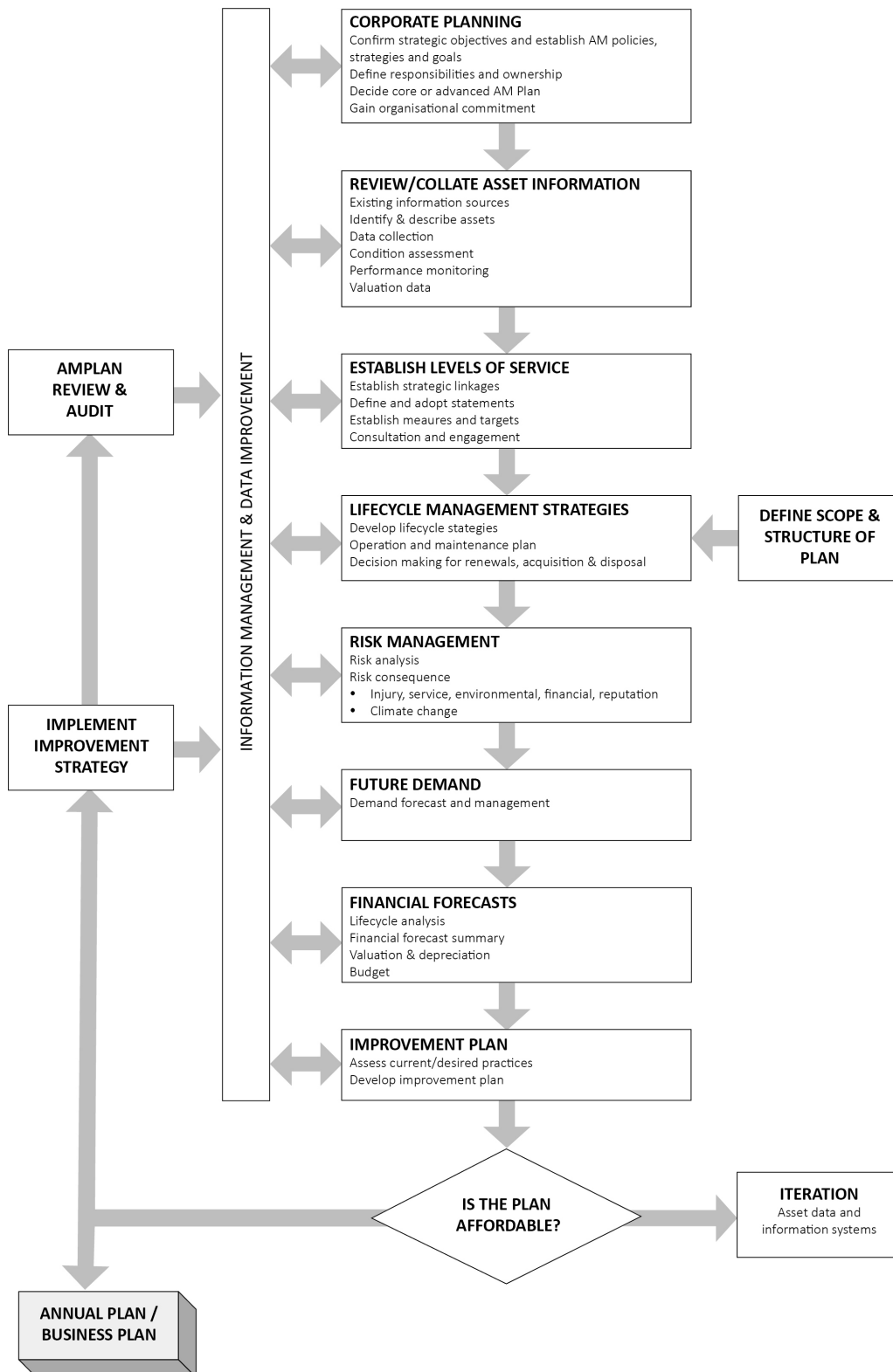
<sup>1</sup> Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

<sup>2</sup> ISO 55000 Overview, principles and terminology

A road map for preparing an AM Plan is shown below.

**Figure 4 - Road Map for preparing an Asset Management Plan**

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



### 3.0 LEVELS OF SERVICE

#### 3.1 Customer Research and Expectations

The WWITS was informed by detailed public consultation from November 2015 to June 2017. This included a visioning workshop with industry and government stakeholders and community members, drop-in community sessions, a transport survey (which received 156 responses), interactive review of maps and suggestions from the community engagement, a technical review of documentation and industry stakeholder workshops.

As a result, Council received 90 written submissions and a public petition with 1,300 signatures. The common topics addressed include:

- City bypass - 59% (28\* against & 2 support southern bypass, 17 for northern bypass, 2 support any bypass)
- Active travel - 11% (6 support cycle ways, 3 support footpaths)
- CBD parking - 7 % (6 suggestions for CBD parking options)
- Report and process - 4% (3 general complaints)
- Northern Growth Area - 4% (3 suggestions for inclusion)
- Additional single submission topics: health precinct, general support, Sturt Highway upgrades, Kincaid Street parking, public transport, bus stops, caravan parking, Olympic Highway upgrades, Glenfield Road, Gobbagombalin Bridge, lack of connection to Forest Hill.

*\*The majority of submissions against the southern bypass were directly related to the bypass passing through their property.*

As detailed in the WWITS, below are some of the key points detailed within the external reports from key community stakeholder groups – Committee 4 Wagga and the Housing Industry Association.

<b>Committee 4 Wagga Housing Industry Association</b>		<b>Beneficial Outcomes</b>
	Prioritise to the most popular mode of transport	Value for money, traffic flows
	Zoning needs to allow development in CBD	Traffic flows, accessibility to CBD, economic development
Gobbagombalin Bridge duplication	Limiting the growth to the north is not supported	Traffic flows, accessibility to CBD
Glenfield Road duplication	Prioritise the north south corridors to the CBD.	Traffic flows, accessibility to CBD, economic development
No support for restricting greenfield subdivision, key point of difference for cities economic development	Support all proposals associated with Pedestrian Access Mobility Plan, Active Travel Plan and Spatial Plan in relation to improvement for bicycle networks and facilities	Shared usage, traffic flows, safety, accessibility, condition, design.
	An express or direct route for public transport is supported	Traffic flows, accessibility
Supported elements of MR Cagney Report references.	Support an increase of taxi providers and services	Traffic flows, accessibility
Southern corridor bypass	Supports the development of a freight route and supports the southern proposed route suggested by the Committee 4 Wagga	Traffic flows
	Provisions for a multi-storey car park in CBD and medical precinct should be explored	Traffic flows, accessibility
	Supports the general WWITS response from the technical reports.	

Source: WWITS

Based on this community engagement the following top 10 topics were developed.

**Table 4 - Top 10 Transport Topics and Beneficial Outcomes from WWITS**

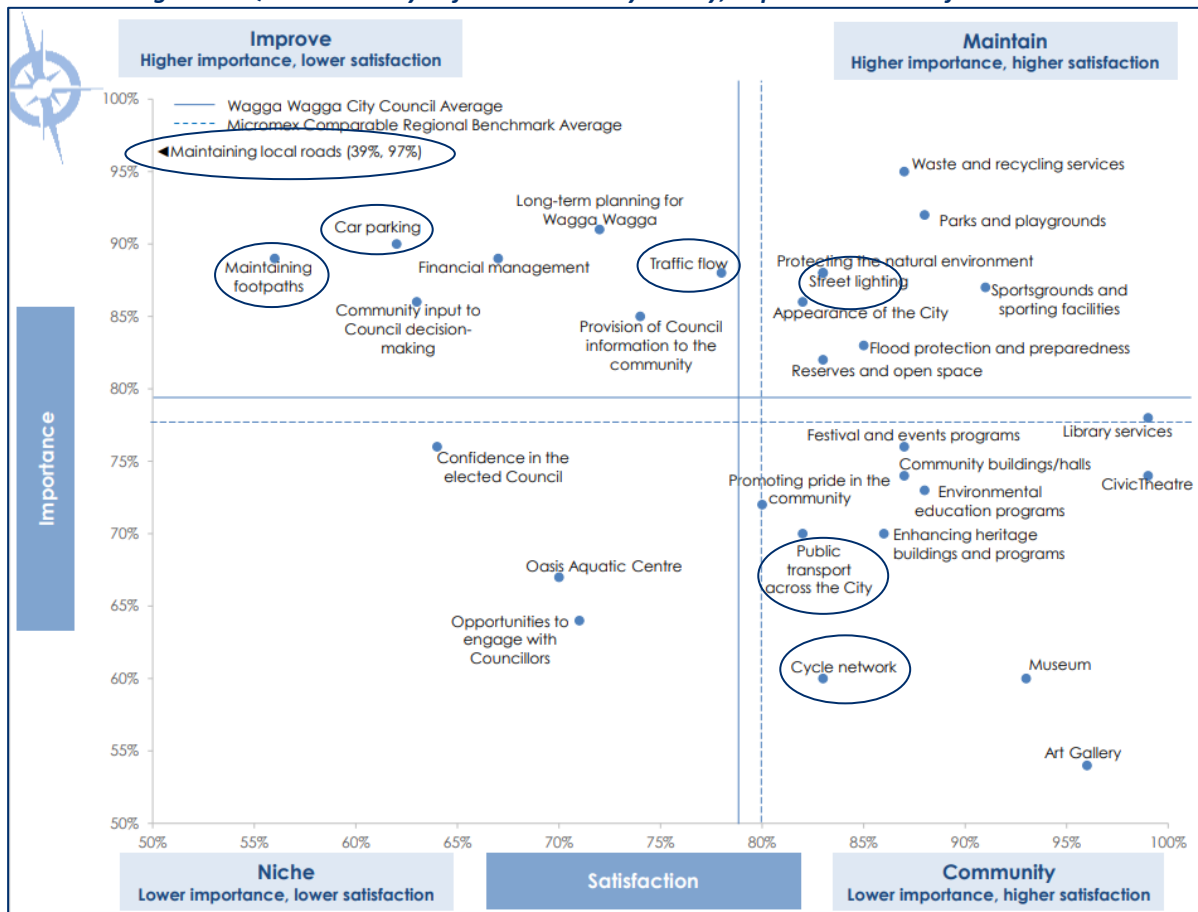
Topic	Beneficial Outcomes
Future duplication of the Gobbagombalin Bridge (NSW Government Asset)	Traffic flows, accessibility
Cycling infrastructure, corridors and networks	Traffic flows, accessibility, connectivity
Public transport initiatives	Traffic flows, accessibility, shared usage
Development to the north with suitable infrastructure and structure planning	Traffic flows, accessibility
Better managed CBD parking	Accessibility
Multi-storey parking in CBD and health precincts	Accessibility
Truck rest areas and efficient freight routes	Traffic flows, safety
Inclusive, safe and pedestrian friendly CBD infrastructure	Shared usage, traffic flows, safety, accessibility, condition, design.
Improved intersection of the Old Narrandera Road and Olympic Highway (NSW Government Asset)	Traffic flows, accessibility
Improved Glenfield Road corridor	Traffic flows, accessibility

Source: WWITS

To understand community expectations and satisfaction, 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 in 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 5 below is from the 2021 Community Satisfaction Survey. It highlights that road and footpath maintenance, provision of carparking and traffic flow issues are rated in the higher importance/lower satisfaction quadrant.

Figure 5 - Quadrant Analysis from Community Survey, importance vs satisfaction 2021



Source: Wagga Wagga Community Survey Results 2021 \*Slide 1 (nsw.gov.au)

Points worth noting for transport assets from previous surveys are:

- 2017
- Maintaining local roads was important to the Community
  - Carparking was important to the Community
  - Maintaining footpaths was important to the Community
  - Traffic flow was important to the Community

- 2015
- Maintenance of local roads was a priority for the Community
  - Availability of carparking was important to the Community
  - Maintenance of footpaths was important to the Community
  - Traffic flow was important to the Community

- 2012
- 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
- 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
- Urban road maintenance was important to the Community
  - The Community had a low satisfaction with the management of footpaths and rural roads

- 2006
- Urban roads were important to the Community
  - The Community rated their satisfaction level as low for rural roads



The outcomes of the community engagement conducted by Council to inform the WWITS and over Community Survey’s conducted over the past 15 years have informed this AM Plan and revisions of the LTFP. This assists Council and stakeholders in matching the level of service required, service risks and consequences with the customer’s ability and willingness to pay for the service.

**3.2 Strategic Direction**

The vision for the future from the Community Strategic Plan 2040 (CSP) 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 agreed upon a number of priorities which are really important. These have been categorised into 5 strategic directions for the city. These are Community Leadership and Collaboration, Safety and Health, Growing Economy, Our Identity and Sense of Place and Our Environment. 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.

The strategies from the Community Strategic Plan addressed in this AM Plan are:

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

This AM 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 LSPS and WWITS 2040 further define Council’s strategic priorities and future demands included in the AM Plan. the relevant WWITS strategic directions to be addressed within this AM Plan are summarised below.

**Table 5 - Wagga Wagga Integrated Transport Strategic Direction**

CSP Strategic Direction	WWITS Strategic Direction	Beneficial Outcomes
Community leadership and collaboration	Capitalising on investment, working with industry to make best use of government investment.	Value for money, economic development.
Our environment	Importance of corridor planning and freight movement. An arterial and sub-arterial road network that is strategic will reduce pressure on local roads.	Traffic flow, safety, connectivity
Our identity and sense of place	The liveability and health of our city is important. Local streets should be safe for children and pedestrians to walk and play.	Traffic flow, safety
Safety and health	Heavy vehicles and high traffic movements should be separated from our local streets.	Traffic flow, safety, connectivity
Safety and health	Active travel should be safe, efficient and comfortable. Alternative modes of transit will only be utilised if suitable end of trip facilities are provided and parents are comfortable letting children ride to activities.	Shared usage, traffic flows, safety, accessibility, connectivity, condition, design.
Our identity and sense of place	The core of the city needs to be preserved and enhanced.	Shared usage, traffic flows, safety, accessibility, condition, design.

CSP Strategic Direction	WWITS Strategic Direction	Beneficial Outcomes
Safety and health	The health precinct needs structure planning to ensure our vulnerable patients can obtain care efficiently and businesses can thrive and develop around the hospital.	Traffic flows, accessibility.
Community leadership and collaboration	Emerging smart technologies need to be incorporated with end of trip facilities to link people across the commercial core to allow new and smaller businesses to share facilities.	Traffic flows, accessibility, economic development.
Community leadership and collaboration	Partner with Transport for NSW and local transport operators to investigate and trial a more flexible public transport system to better serve the entire community	Traffic flows, accessibility.

### 3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the service delivery of transport assets are outlined in the table below.

**Table 6 - Legislative Requirements**

Legislation	Requirement
Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a Long Term financial plan supported by asset management plans for sustainable service delivery.
Local Government (General) Regulation 2021	Sets out roles, purposes, responsibilities and powers of local government, in addition to those set out in the Local Government Act 1993, including integrated planning and reporting guidelines.
Environmental Planning & Assessment Act 1979	Requirement for Local Environmental Plans and Development Control Plans. Provides for Council control of development of towns and approval of infrastructure expansion.
Australian Accounting Standards	Provides the conceptual framework and standards for accounting and financial reporting.
Roads Act 1993 No 33	Provides authority to Council for administration and development of roads and streets.
Work Health and Safety Act 2011	Impacts all operations in relation to safety of workers and the public. Council's responsibility to ensure health, safety and welfare of employees and others at places of work.

### 3.4 Customer Values

Service levels are defined in three ways - customer values, customer levels of service and technical levels of service. Transport Assets contribute more than 22% to the overall satisfaction with Council.

**Customer Values** indicate:

- what aspects of the service is important to the customer,
- whether they see value in what is currently provided; and
- the likely trend over time based on the current budget provision.

**Table 7: Customer Values**

Customer Values	Target Customer Satisfaction Measures	Current Feedback	Other Initiatives	Expected Trend Based on Planned Budget
Local Road (Sealed/Unsealed) and Bridges Maintenance	>85% Linked to connectivity and condition	Most valued council product (97%). 2021 satisfaction = 39%		Improvement expected based on continued levels of State and Federal Grant funding assistance (eg. Local Road and Community Infrastructure Funding).
Carparks	>85% Linked to availability.	Highly valued (90%). 2021 satisfaction = 62%	Development of renewal plan and future investment plan	Maintained
Local Footpath Maintenance	>85% Linked to connectivity, accessibility and condition	Highly valued (89%). 2021 satisfaction = 56%	Updated WWCC Engineering Guidelines 2017 requires wider paths Active Travel Plan project has increased the connectivity and quality of the shared paths.	Improvement expected due to Grant funding, as seen in the Customer Satisfaction Surveys
Street Lighting	>85%	Highly valued (88%). 2021 satisfaction = 83%	Essential Energy Lighting Upgrade to LED	Maintained
Traffic Flow	>85% Linked to perceived travel times, queuing and congestion.	Highly valued (88%). 2021 satisfaction = 78%	Decisions based on traffic modelling and scenario analysis	Improvement expected based on increased Capital Investment from Local Infrastructure Contributions Plans with State and Federal Grant funding assistance.
Public Transport	>85% Linked to availability	Moderately valued (70%). 2021 satisfaction = 82%	TFNSW have rescheduled bus routes, increase bus movements to reduce waiting and travel times	Improvement expected based on increased Capital Investment into connectivity and furniture with State and Federal Grant funding assistance (CPTIGs, PAMPs).
Cycle Network (shared paths)	>85% Linked to connectivity	Low valued (60%). 2021 satisfaction = 83%	Active Travel Plan project has increased the connectivity and quality of the shared paths	Improvement expected due to Grant funding, as seen in the Customer Satisfaction Surveys

Sources: [Wagga Wagga City Council Delivery Program and Operational Plan 2021-2022](#), [Wagga Wagga Community Survey Results 2021](#)

### 3.5 Customer Levels of Service

The Customer Levels of Service should be considered in terms of:

- Condition**      How good is the service ... what is the condition or quality of the service?
- Function**      Is it suitable for its intended purpose .... Is it the right service?
- Capacity/Use**    Is the service over or under used ... do we need more or less of these assets?

At this point Council is focusing on condition to indicate customer service levels.

**Table 8 - Customer Levels of Service**

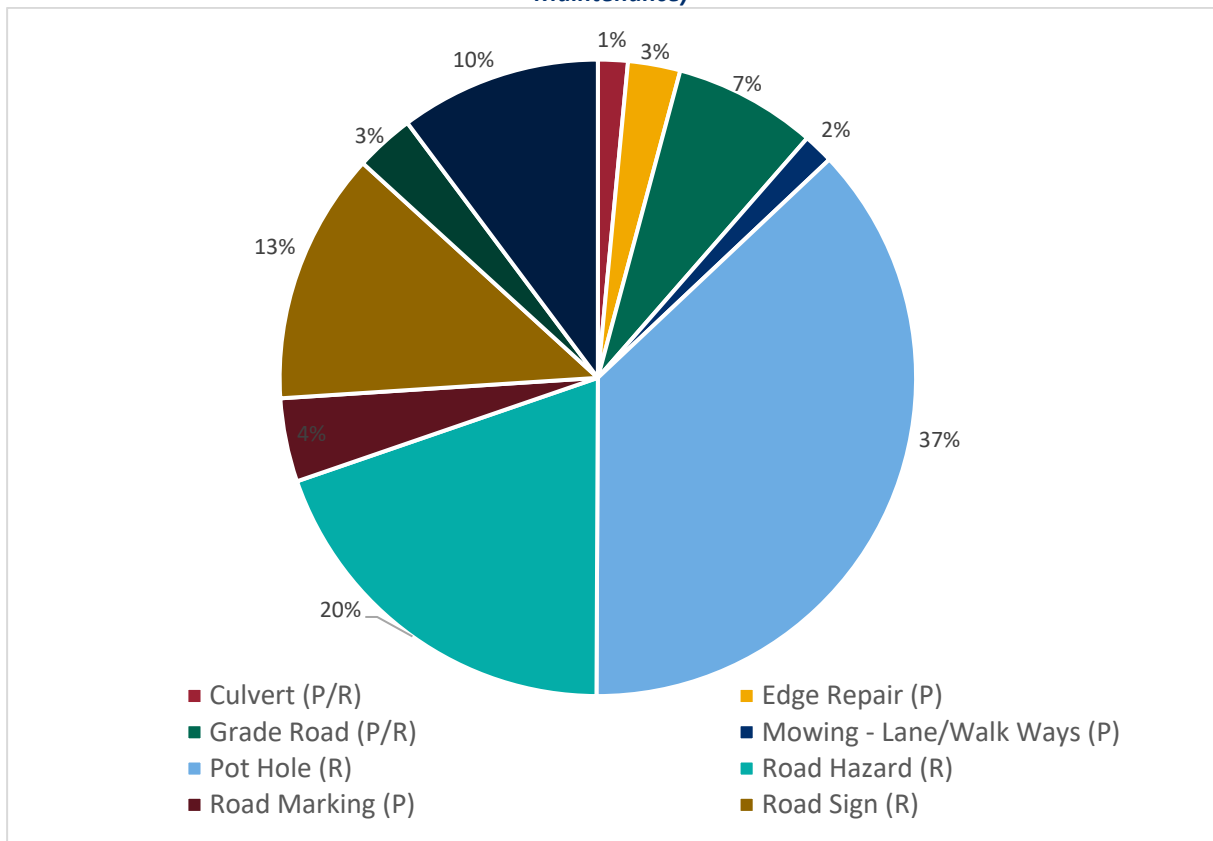
Type of Measure	Level of Service	Performance Measure	Current Performance
Condition	Bridges in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 21.11% Condition 2 = 41.66% Condition 3 = 20.05% Condition 4 = 16.40% Condition 5 = 0.78%
Condition	Bus and Taxi Shelters in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 52.91% Condition 2 = 20.60% Condition 3 = 14.01% Condition 4 = 1.47% Condition 5 = 11.02%
Condition	Carparks in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 21.33% Condition 2 = 31.17% Condition 3 = 18.85% Condition 4 = 15.92% Condition 5 = 12.73%
Function	Carparks - Potholes, and shoving/rutting are addressed	Customer request data	Customer request data
Condition	Culverts in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 14.71% Condition 2 = 46.68% Condition 3 = 27.95% Condition 4 = 8.43% Condition 5 = 2.24%
Condition	Footpaths in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 31.83% Condition 2 = 16.79% Condition 3 = 38.19% Condition 4 = 11.38% Condition 5 = 1.81%
Condition	Shared Paths and Cycleways in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 80.22% Condition 2 = 11.47% Condition 3 = 5.53% Condition 4 = 2.78% Condition 5 = 0%
Condition	Kerb and Gutter in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 33.29% Condition 2 = 50.86% Condition 3 = 15.11% Condition 4 = 0.74% Condition 5 = 0%
Condition	Sealed Roads – Seal (or wearing surface) in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 39.90% Condition 2 = 21.08% Condition 3 = 18.00% Condition 4 = 19.65% Condition 5 = 1.37%
Function	Potholes, shoving/rutting, edge break are addressed	Customer request data	Customer request data
Condition	Sealed Roads – Pavement in condition 4 or 5 are replaced as planned	Condition assessment 2018	Condition 1 = 23.54% Condition 2 = 29.03% Condition 3 = 28.54% Condition 4 = 18.08% Condition 5 = 0.81%

Type of Measure	Level of Service	Performance Measure	Current Performance
Condition	Unsealed Roads in condition 4 or 5 are replaced as planned	Condition assessment 2020	Condition 1 = 11.11% Condition 2 = 34.19% Condition 3 = 37.48% Condition 4 = 17.15% Condition 5 = 0.07%
Function	Potholes, shoving/rutting, edge break and roughness are addressed	Customer request data	Customer request data

**Performance Indicators**

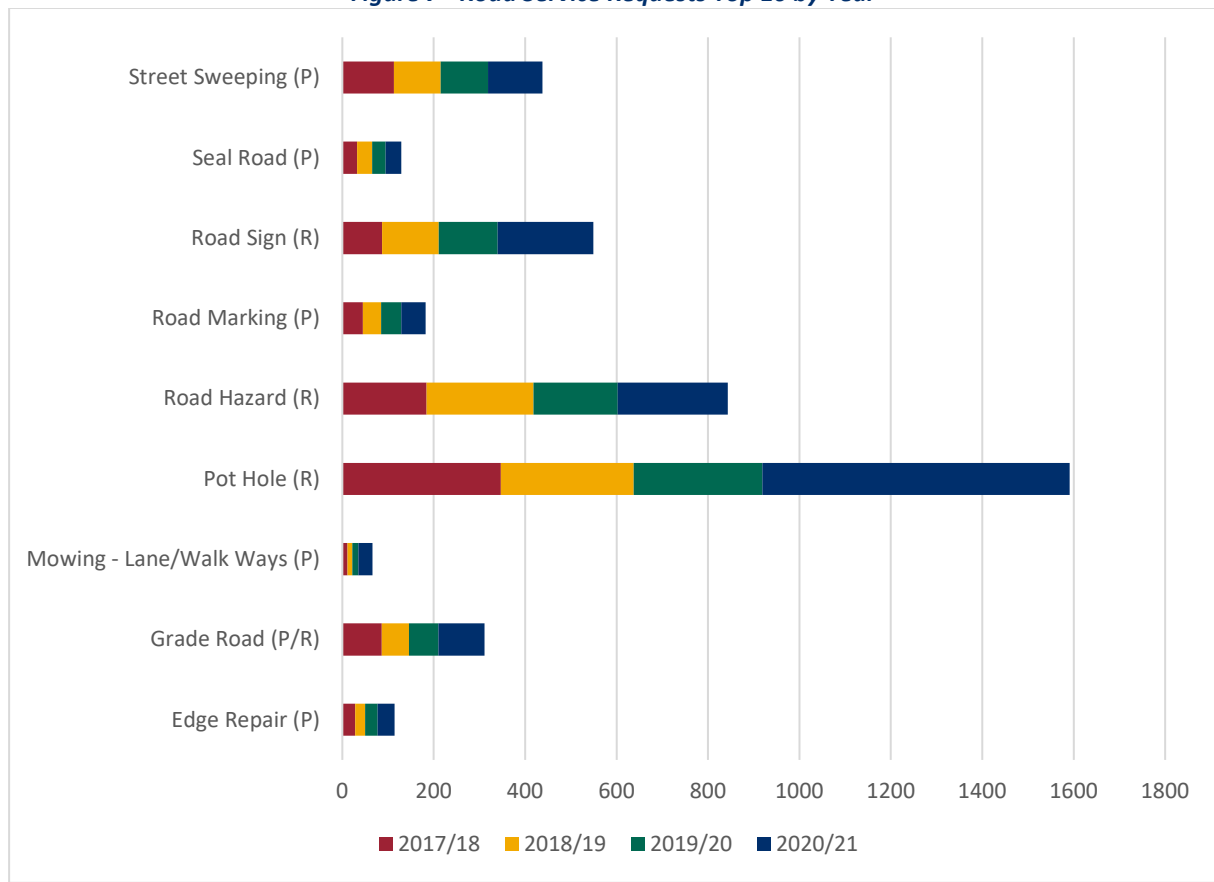
Customer requests regarding infrastructure across the local government area are managed in the Property and Rating - Request Management System. The most common customer requests for action (84% of the total) are shown below.

**Figure 6 - Road Service Requests July 2017-July 2021 (Top 10 or 84% of all Requests - Proactive or Reactive Maintenance)**



Council is receiving more customer requests in 2021 than in 2017. This trend is shown below.

**Figure 7 - Road Service Requests Top 10 by Year**



This increase in customer requests may relate to the increase rainfall (125 to 150% of the mean) after an intensely dry period of weather across NSW. Rainfall on a previously dry catchment can create initial drainage and stormwater management issues impacting on the road condition and performance. Increased moisture on, and around roads exacerbates any minor issues within a sealed road and the recent dry period may mask road condition and create cracking within the seals or road formation which enables moisture to penetrate more readily when significant rainfalls return.

### 3.6 Technical Levels of Service

To deliver the customer values, and impact the achieved Customer Levels of Service, are technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road) or a new service that did not exist previously (e.g. a new footpath or cycleway)
- **Operation** – the regular activities to provide services (e.g. roadside slashing, line marking)
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, path grinding, culvert cleaning)
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road reseals pavement reconstruction, gravel resheeting)

The table below the activities expected to be provided under the 10 year planned budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

**Table 9 - Technical Levels of Service**

Service Attribute	Service Objective	Activity Measure Process	Estimated Required Budget	Budget as per Long Term Financial Plan	Funding Ratio (Budget/ Required Budget)
<b>Maintenance - Bridges</b>	Maintain bridges across the network	Conduct maintenance, vegetation control, painting, delineation, guardrail maintenance and sign replacement as scheduled	\$6,885,234 over 10 years	\$2,930,073 over 10 years	43%
<b>Maintenance – Carparks</b>	Maintain all carparks managed by Council	Replace line marking every 5 years Replace 50 carpark signs per year Conduct grading, fettling, pothole patching and sweeping of each carpark once per year	\$1,643,768 over 10 years	\$551,765 over 10 years	34%
<b>Maintenance – Culverts</b>	Maintain culverts across the local government area	Conduct minor repairs as identified for 5% of culverts per year Clean major culverts every year, and a third of minor culverts every year. Vegetation maintained major culverts every year, and a third of minor culverts every year	\$16,385,587 over 10 years	\$3,700,533 over 10 years	23%
<b>Maintenance – Footpaths and Shared Paths</b>	Maintain footpaths and shared paths to provide pedestrian linkages	Conduct minor maintenance, vegetation control, tubular fence maintenance and sign replacement.	\$5,100,031 over 10 years	\$5,296,751 over 10 years	104%
<b>Maintenance – Sealed Roads</b>	Maintain sealed roads	Conduct regular scheduled maintenance	\$68,526,874 over 10 years	\$48,627,326 over 10 years	71%
<b>Maintenance – Unsealed Roads</b>	Maintain unsealed roads	Conduct regular scheduled maintenance	\$31,104,051 over 10 years	\$19,100,412 over 10 years	61%
		<b>Total Maintenance</b>	<b>\$129,645,545</b>	<b>\$80,206,863</b>	<b>62%</b>
<b>Renewal – Bridges</b>	Renew bridges across the network to ensure safe service provided	Condition 4 and 5 bridges are scheduled to be renewed	\$14,756,237 over 10 years	\$0	0%
<b>Renewal – Carparks</b>	Renew carparks across the network to ensure safe service is provided	Condition 4 and 5 carparks are scheduled to be renewed	\$1,931,804 over 10 years	\$0	0%
<b>Renewal – Culverts</b>	Renew culverts across the network to ensure adequate drainage and structural service is provided	Condition 4 and 5 culverts are scheduled to be renewed	\$7,874,117 over 10 years	\$7,874,117 over 10 years	100%
<b>Renewal – Footpaths and Shared paths</b>	Renew Footpaths, Shared Paths and Cycleways across the	Condition 4 and 5 footpaths and shared paths are scheduled to be renewed	\$6,524,677 over 10 years	\$420,000 over 10 years	6%

Service Attribute	Service Objective	Activity Measure Process	Estimated Required Budget	Budget as per Long Term Financial Plan	Funding Ratio (Budget/ Required Budget)
	network to ensure adequate service safely.				
<b>Renewal – Kerb and Gutter</b>	Renew kerb and gutter across the network to ensure adequate drainage service, protect the road pavement and pedestrian safety.	Condition 4 and 5 kerb and gutter are scheduled to be renewed	\$6,441,613 over 10 years	\$6,441,613 over 10 years	100%
<b>Renewal – Sealed Roads – Pavement</b>	Renew road pavement when structural integrity is compromised and affects driver safety.	Condition 4 and 5 pavements are scheduled to be renewed	\$75,253,595 over 10 years	\$75,253,595 over 10 years	100%
<b>Renewal Sealed Roads - Seal</b>	Renew road seal when structural integrity is compromised, affects the road pavement and driver safety.	Condition 4 and 5 seals are scheduled to be renewed	\$31,046,974 over 10 years	\$31,046,974 over 10 years	100%
<b>Renewal – Unsealed Roads</b>	Resheet unsealed when pavement material has been consumed and driving becomes unsafe.	Condition 4 and 5 unsealed roads are scheduled to be renewed	\$22,061,191 over 10 years	\$22,061,191 over 10 years	100%
		<b>Total Renewal</b>	<b>\$165,890,208</b>	<b>\$143,097,488</b>	<b>86%</b>
<b>Acquisition – Bridges</b>	Provide connection of roads in Estella	Construct Amundsen Street bridge (LICP TT6)	\$1,116,027	\$1,116,027	100%
<b>Acquisition – Footpaths</b>	Provide an active travel network for the community	Construct footpaths identified in the LICP (TT17, TT18, TT19, TT21, TT22 and TT24)	\$8,069,096	\$1,521,546	19% 100% with grant funding
<b>Acquisition – Shared paths</b>	Provide an active travel network for the community	Construct shared paths identified in the LICP (TT9, TT10, TT12 and TT13)	\$3,704,623	\$619,973	17% (100% with grant funding)
<b>Acquisition – Boorooma Street Slip Lane</b>	Provide access to new development	Construct a channelized right turn intersection into new subdivision	\$297,000	\$297,000	100%
<b>Acquisition – LMC - New circulating road (partial)</b>			\$2,086,693	\$2,086,693	100%
		<b>Total Acquisitions</b>	<b>\$15,273,439</b>	<b>\$5,641,239</b>	<b>37%</b>
<b>Upgrade Glenfield Road</b>	Provide assets to ensure adequate traffic flow from the south of the city	Upgrade Glenfield Road as identified in TT1 of the LICP	\$19,088,168	\$19,088,168	100%



Service Attribute	Service Objective	Activity Measure Process	Estimated Required Budget	Budget as per Long Term Financial Plan	Funding Ratio (Budget/ Required Budget)
<b>Upgrade Dunns Road</b>	Improve safety along Dunns Road	Upgrade of Dunns Road, provision of intersection treatments and provision of safety	\$3,942,279	\$3,942,279	100%
<b>Upgrade Lord Baden Powell Drive</b>	Provide assets to ensure adequate traffic flow and mitigate safety issues	Upgrade of Lord Baden Powell Drive to mitigate recent safety issues identified	\$2,480,557	\$2,480,557	100%
<b>Upgrade Pine Gully Road</b>	Provide assets to ensure adequate traffic flow from the south of the city	Upgrade Pine Gully Road as identified in TT2 of the LICP	\$6,663,545	\$6,663,545	100%
<b>Upgrade Sections of Red Hill Road</b>	Improve traffic flow at Red Hill Road between Plumpton and Glenfield Road and Koorngal Road between Lake Albert Road and Plumpton Road	Upgrade Red Hill Road as identified in TT3 of the LICP	\$4,539,227	\$4,539,227	100%
<b>Upgrade Bakers Lane adjacent to intersection with Sturt Highway</b>	Improve access to the Sturt Highway from the south of the city	Upgrade Bakers Lane as identified in TT4 of the LICP	\$412,500	\$412,500	100%
<b>Upgrade Gregadoo Road</b>	Improve traffic flow along Gregadoo Road	Upgrade Gregadoo Road as identified in TT5 of the LICP	\$4,243,956	\$4,243,956	100%
<b>Upgrade Red Hill Road/ Dalman Parkway intersection</b>	Provide assets to ensure adequate traffic flow from the south of the city	Upgrade intersection as identified in TT27 of the LICP	\$1,900,443	\$1,900,443	100%
<b>Upgrade Old Narrandera Road</b>	Seal an unsealed section of Old Narrandera Rd	Upgrade of 5.4km of unsealed road to sealed road	\$1,068,750	\$1,068,750	100%
<b>Upgrade Boorooma Street</b>	Provide assets to ensure adequate traffic flow	Upgrade Boorooma Street as identified in TT28 of the LICP	\$2,812,200	\$2,812,200	100%
		<b>Total Upgrades</b>	<b>\$47,151,625</b>	<b>\$47,151,625</b>	<b>100%</b>

## 4.0 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 Impact and Demand Management Plan

Demand for new services will be managed through a combination of managing and maintaining existing assets, upgrading 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 of 0.8% per year (as per LSPS) 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.

For example, with the development of the Special Activation Precinct (SAP) and the completion of the Inland Rail Project and the Riverina Intermodal Freight and Logistics Hub (RiFL), Council is anticipating more industrial and other businesses within the Local Government Area. These areas will offer employment and people will travel there daily.

The [Wagga Wagga Local Infrastructure Contributions Plan 2019-2034 \(LICP\)](#) identifies new and upgrades required to transport network to support the residential and industrial growth of the city. The funding for this new and upgraded assets comes from developers in the form of infrastructure contributions paid by developers across the local government area.

### 4.3 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated, dedicated or constructed.

Acquiring new assets will commit Council to ongoing operations, maintenance and renewal costs for the period that these assets provide a service. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long term financial plan.

### 4.4 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets managed by Council and the services they provide. In the context of the Asset Management Planning process, climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we consider how to manage our existing assets given potential climate change impacts for our region. Risk and opportunities identified to date are shown below.

**Table 10 - Managing the Impact of Climate Change on Assets and Services**

Climate Impacts	Risk Statement (Cause and Effect)	Adaptation Actions
Increase in hot days and average temperatures	Increase in hot days and increase in average temperature leads to urban heat island effect causing public health issues and decreased use of facilities like shared paths and footpaths, bus stops and carparks	Increase urban canopy along shared pathways Increase shading at bus stops and car parks Implement relevant actions from the Active Travel Plan and Street Tree Strategy
	Increase in hot days and increase in average temperature leads to fatigue and degradation of materials and surfaces resulting in increased cost of maintenance and renewals	Utilise materials and designs for pavements and surfaces that are highly resistant to high temperatures
Increased intensity of storm events and increased flooding	Increased intensity of storm events and increased flooding leads to decreased access, degradation of materials and surfaces resulting in increased cost of maintenance and renewals	Implement actions from the Floodplain Risk Management Plan and the Transport Asset Management Plan Utilise materials and designs for pavements that are highly resistant to inundation Retain flood paths in new developments

Source - [Building Resilience to Climate Change. Climate Change Risk Assessment and Adaptation options for Council Assets – Report for City of Wagga Wagga 2018.](#)

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following benefits:

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint.

The table below summarises some asset climate change resilience opportunities.

**Table 11- Building Asset Resilience to Climate Change**

New Asset Description	Climate Change Impact	Build Resilience in New Works
Roads	Rainfall intensity increases	Current and future design must use the latest Australian Rainfall and Runoff design events which have been updated with improved real event data
Roads - sealed	Increased duration of dry periods and drought	Longer periods of dry pavements may extend the asset useful life particularly in low lying areas
Roads - unsealed	Increased duration of dry periods and drought	- Unsealed roads need moisture to bind the materials together. Drier weather conditions accelerate the rate at which material comes loose and corrugations and dust form. Grading can also make road condition worse when done in dry conditions - Synthetic binding polymers can be applied

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

## 5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate its transport assets at the agreed levels of service while managing lifecycle costs.

### 5.1 Background Data

#### 5.1.1 Physical parameters

The assets covered by this AM Plan are shown below.

**Table 12 - Assets covered by this Plan**

Asset Category	Number/Length	Replacement Value
Bridges (includes foot, vehicle and rail bridges)	91	\$ 85,913,045
Bus and Taxi Shelters	63	\$ 720,189
Carparks	83	\$ 7,226,393
Culverts	4,532	\$ 44,421,104
Footpaths	248 km	\$ 47,131,454
Shared Paths and Cycleways	58 km	\$ 11,011,293
Kerb and Gutter	756 km	\$ 46,014,533
Sealed Roads – seal, pavement and formation	1,212 km	\$ 580,229,905
Unsealed Roads – pavement and formation	1,097 km	\$ 59,906,515
<b>TOTAL</b>		<b>\$882,574,431</b>

#### 5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed below.

**Table 13 - Known Service Performance Deficiencies**

Location	Service Deficiency
Glenfield Road / Pearson Street	<ul style="list-style-type: none"> <li>- High volume of traffic connecting the University, the Northern Growth Area, Lloyd, Springvale and CBD</li> <li>- Intersection (Glenfield/Fernleigh, Glenfield/Bruce St, Dobney/Pearson) have high wait times</li> <li>- Major drainage issues increasing the risk of flooding</li> </ul>
Gobbagombalin Bridge (NSW Government)	High volume of traffic to/from the University, CBD, Bomen Industrial Estate and to the new estate development
Bourke Street	Pedestrian crossing safety
Edward Street underpass (NSW Government)	<ul style="list-style-type: none"> <li>- Height limitations</li> <li>- Hindrance for heavy trucks trying to pull away under heavy load</li> </ul>
Roundabouts across the City	Contemporary safety standards for pedestrians and bike riders require geometric modification of the roundabout including entries/exits, median widths.
Wagga Wagga Base Hospital	Hospital accessibility, traffic flows, pedestrian safety and precinct parking availability.
Pine Gully Road	Road width and safety concerns for pedestrians and bike riders.

Location	Service Deficiency
Old Narrandera Road / Olympic Highway (NSW Government)	Traffic flows are congested as local traffic from the Northern Growth Area enters the Olympic Highway from the Old Narrandera Road.
Plumpton Road/Plunkett Drive/Gregadoo Road	Traffic flows are congested for local traffic and access to the Mater Dei School, the Mater Dei Catholic College and The Grange Lifestyle Village.
Red Hill Road	Traffic flows from Koorringal Road to Glenfield Road are reportedly restricted and the duplication of Red Hill Road will improve the efficiency.

The above service deficiencies were identified from community consultation undertaken for the Wagga Wagga Integrated Transport Study (WWITS) in 2016 and by an internal stakeholder group.

A measure of network performance is the Levels of Service and is defined by service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience. The practical application of levels of service to different road environment accounts for factors such as volume/capacity ratios, terrain types, proportion of heavy vehicles and road gradients. For a comprehensive account of capacity and Levels of Service refer to the *Guide to Traffic Management Part 3* (Austroads 2013b). The table below details each level of service used to measure the capacity of assets in the transport network.

**Table 14 - Transport Network Capacity and Level of Service**

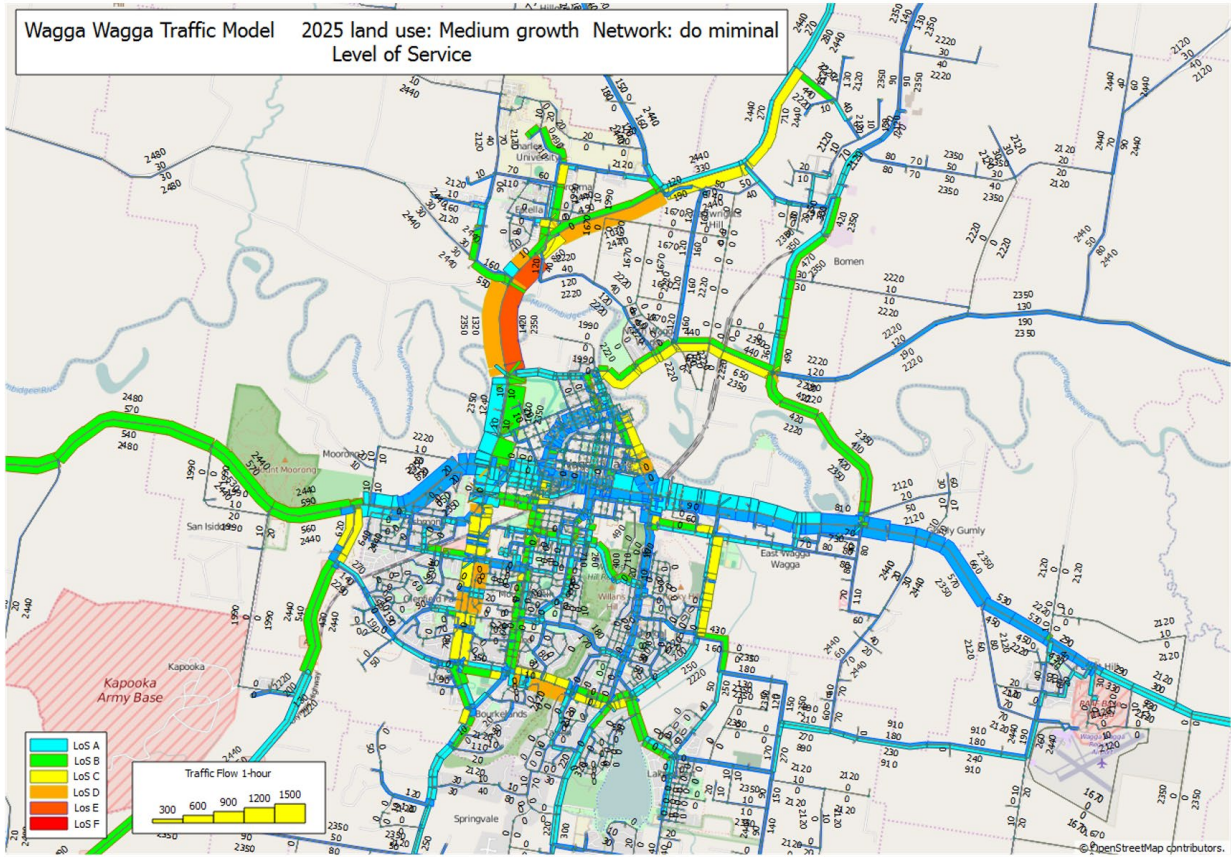
Level of Service	Operating Conditions and Associated Driver's Perceptions
LOS A	Free traffic flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent
LOS B	Stable flow and drivers still have reasonable freedom to select their desired speed and to maneuver within the traffic stream, although the general level of comfort and convenience is a little less than with level of service A
LOS C	Stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to maneuver within the traffic stream. The general level of comfort and convenience declines noticeably at this level.
LOS D	Close to the limit of stable flow and is approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to maneuver within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.
LOS E	Traffic volumes are at or close to capacity, and there is virtually no freedom to select their desired speeds and to maneuver within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause flow breakdown.
LOS F	Traffic condition is forced flow. With it, the amount of traffic approaching the point of interest exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.

Source: [Austroads Guide to Traffic Management Part 12](#) – Traffic Impacts of Developments

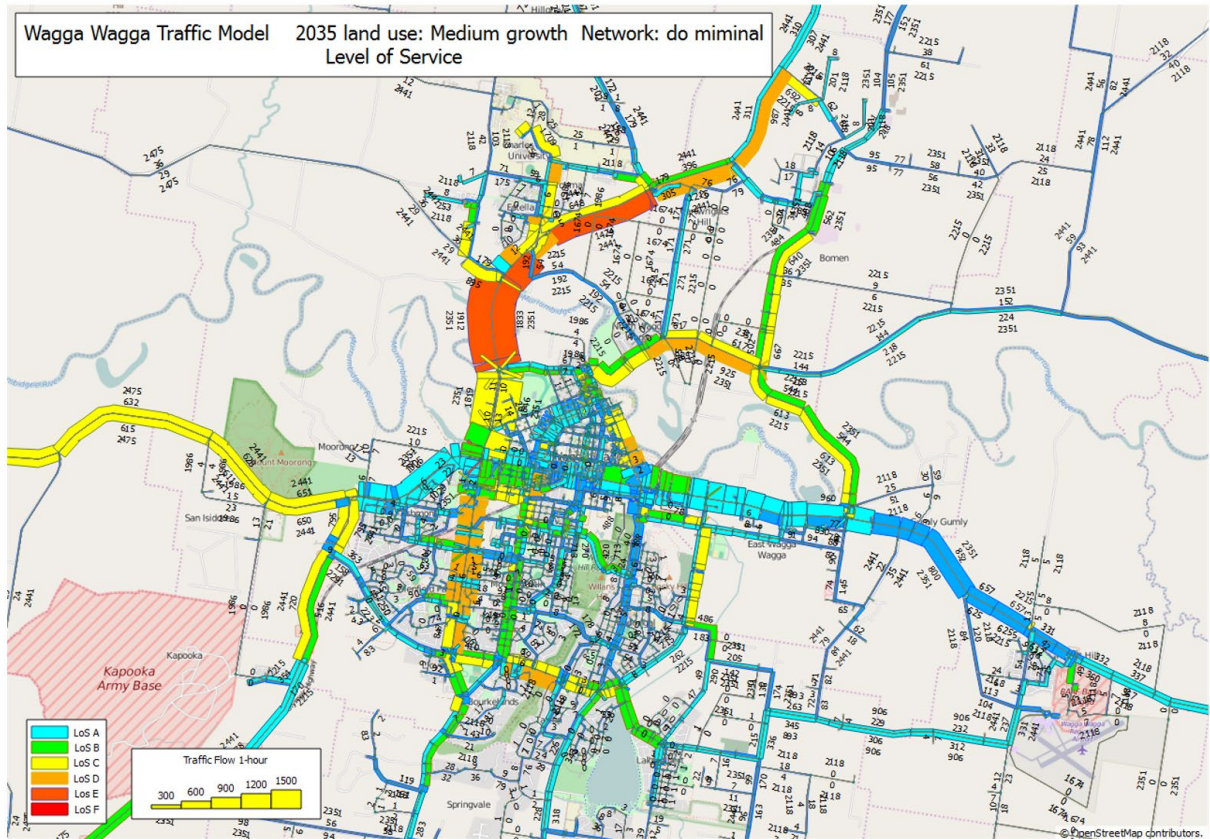
Council aims for at least LOS D. Development and increased freight can trigger the need for asset acquisition to upgrade the network and maintain or improve the level of service. Council can model the impact of growth on the transport network.

Figure 8 below shows the major concerns in 2025 are expected to be the Glenfield Road corridor, especially the Gobbagombalin bridge and a section of Red Hill Road.

**Figure 8 - Traffic Model Projection for the Wagga Wagga Transport Network 2025**



**Figure 9 - Traffic Model Projection for the Wagga Wagga Transport Network 2035**



This indicative scenario supports the current list of constraints listed above.

### 5.1.3 Asset condition

Table 11 below details the condition inspection regime for the assets included in this plan.

**Table 15 - Target Condition Assessment Regime for Transport Assets**

Asset Category	Inspection Frequency	Methodology	Last Inspection
Bridges - vehicle	Level 1 - every year, Level 2 - every 5 <sup>th</sup> year Level 3 - recommended from a Level 2 inspection Level 4 - as recommended from Level 2 and 3.	Level 1 and 2 visual assessment conducted internally Level 3 and 4 by a specialist bridge engineer as identified in Level 1 and 2 assessment. Level 4 assessment with specialised truck. Level 3 cost = \$25,000 per bridge Level 4 cost = \$60,000 per bridge (As per the modern guidelines RTA Bridge Inspection Manual 2007, AS1500, QLD TMR)	Level 1: All 2021 Level 2: All 2018 Level 3: 9 bridges in 2016 Level 4: 5 bridges in 2016
Bridges - footbridges	every 2 years	visual assessment	2021
Carparks	every 3 years	visual assessment	2021
Culverts - Major	every 3 years	Network divided into 3 area based zones. 1 zone per year - 1,200 visual assessments annually.	2021 – west zone
Culverts - Minor	every 3 years	visual assessment	2018
Footpaths and shared paths	every 3 years	Scheduled visual assessment with planned regime. There are 54 zones. Risk assessment in addition to planned regime in response to customer requests and incidents.	2018
Kerb and gutter	every 3 years	visual assessment	2018
Sealed Roads – pavements	every 3 years	Laser scanning	2018
Sealed Roads – seals	every 3 years	Laser scanning	2018
Unsealed Roads	Annually	visual assessment	2021
All traffic assets are assessed after each flood and storm event in addition to the planned regime.			

Condition is currently monitored and as assets age, deteriorate and otherwise fail to meet service requirements, additional investment in maintenance and/or renewal is required to ensure the asset maintains an appropriate level of service.

Council measures and models asset condition using asset deterioration curves to assist with forecasting future investment requirements.

Condition is measured using a 1 – 5 grading system<sup>3</sup> as detailed in Table 16 for reporting in the AM Plan results for ease of communication. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level.

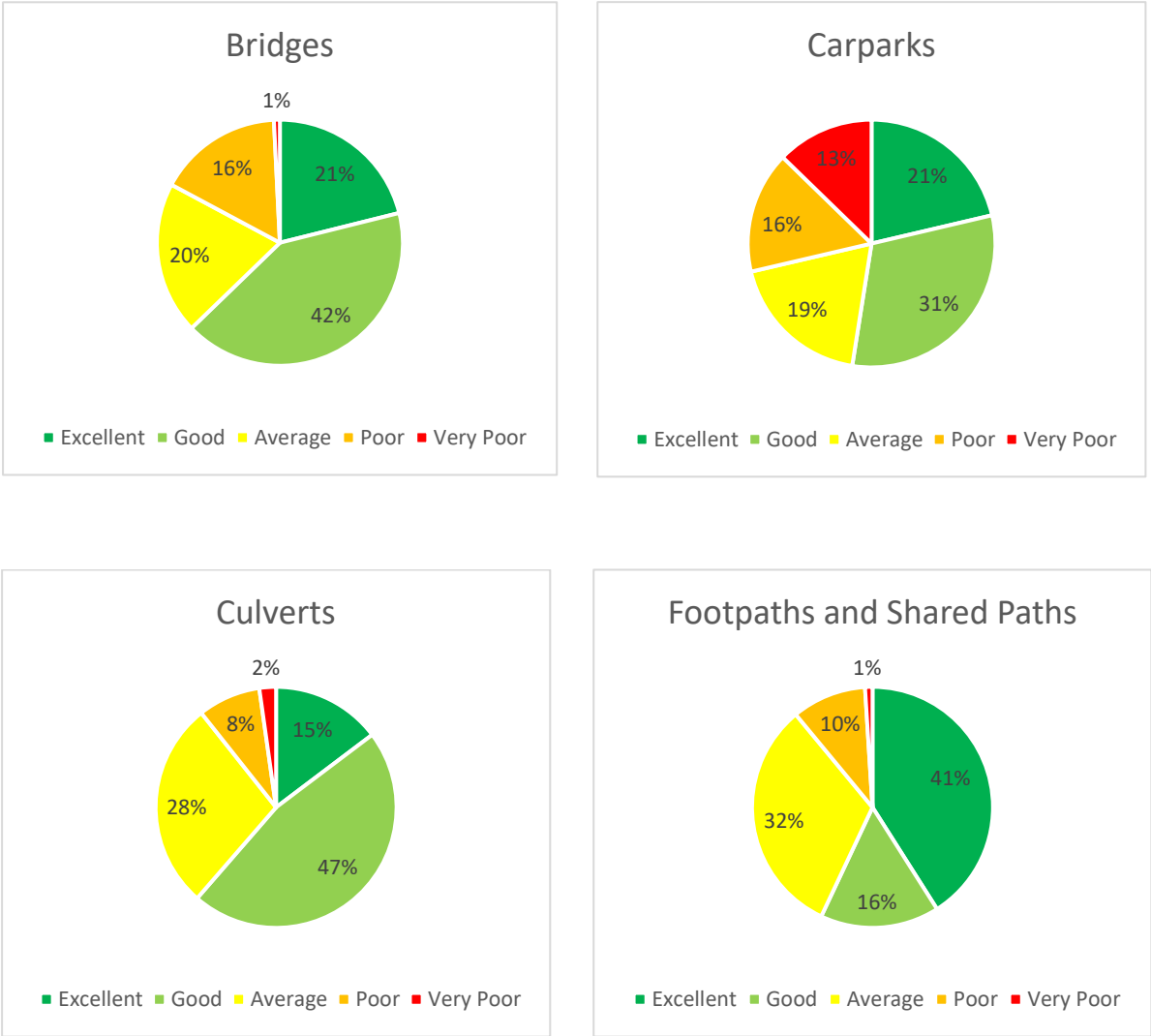
**Table 16 - Condition Grading System**

Condition Grading	Description of Condition
1	<b>Excellent:</b> free of defects, only planned and/or routine maintenance required
2	<b>Good:</b> minor defects, increasing maintenance required plus planned maintenance
3	<b>Average:</b> defects requiring regular and/or significant maintenance to reinstate service
4	<b>Poor:</b> significant defects, higher order cost intervention likely
5	<b>Very Poor:</b> physically unsound and/or beyond rehabilitation, immediate action required

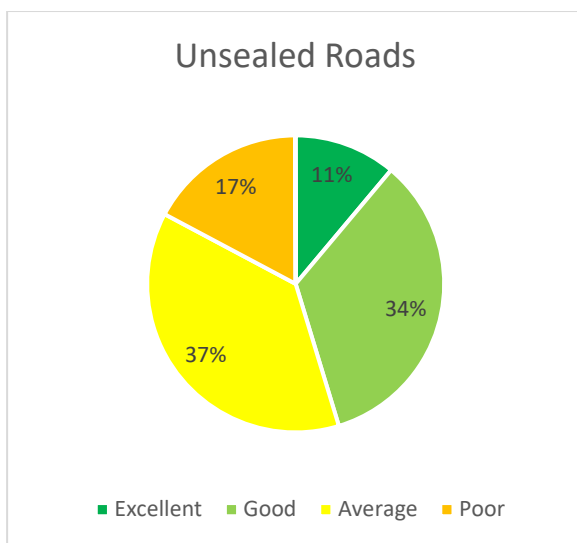
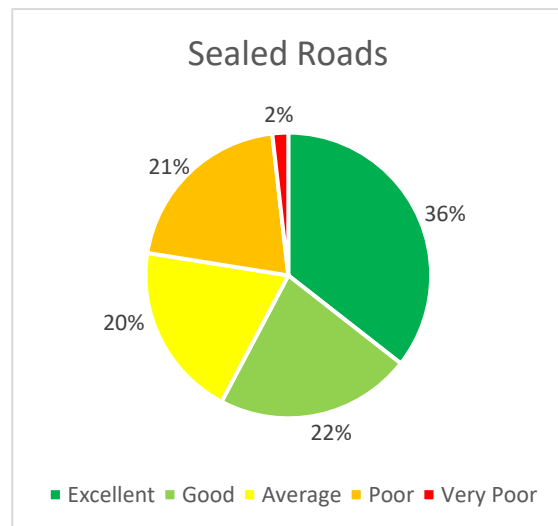
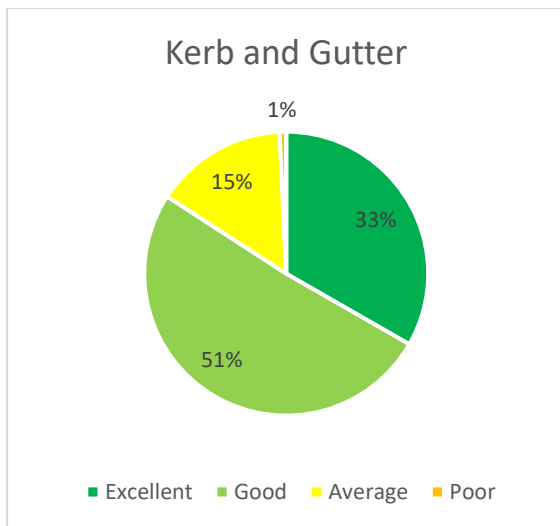
<sup>3</sup> IPWEA, 2015, International Infrastructure Management Manual (IIMM), Sec 2.5.4, p 2|80.

The condition profile of our assets is shown below.

Figure 10 - Asset Condition Profile







#### 5.1.4 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 asset data hierarchy is shown below.

**Table 17 - Asset Data Hierarchy**

Asset Hierarchy	Service Level Objective
Bridges	Vehicle load limits and modern design standards <ul style="list-style-type: none"> <li>- Single or dual lane</li> <li>- Local traffic load limits</li> <li>- GML: Maximum mass per axle group eg. triaxle group 20 tonnes*</li> <li>- HML: Maximum mass per axle group eg. triaxle group 22.5 tonnes*</li> <li>- Bridge sized culverts – culverts greater than or equal 6m road length</li> </ul>
Bus and Taxi Shelters	<ul style="list-style-type: none"> <li>- No Shelter</li> <li>- Shelter</li> </ul>
Carparks	<ul style="list-style-type: none"> <li>- Sealed Carparks - componentised by seal, pavement and formation.</li> <li>- Unsealed Carparks - componentised by pavement and formation.</li> </ul>

Asset Hierarchy	Service Level Objective
Culverts	Determined by road centreline length (m) - Minor (remaining culverts)
Footpaths, Shared Paths and Cycleways	Determined by relevant standards/directives including Austroads, TfNSW, other guidelines and Council design guidelines
Kerb and Gutter	Determined by relevant standards/directives including Austroads, TfNSW, other guidelines and Council design guidelines - Profiles based on usage and Council design guidelines
Sealed Roads & Unsealed Roads	Determined by relevant standards/directives including Austroads, TfNSW and other guidelines and Council design guidelines. More detail below.
Unsealed Roads	Determined by relevant standards/directives including Austroads, TfNSW and other guidelines and Council design guidelines. More detail below.

Source: \*[National Heavy Vehicle Regulator Website](#)

### Road Hierarchy

Council's road network is vital for the economic and social development of the region. Our roads connect key hubs such as Adelaide, Melbourne, Brisbane and Sydney; economic magnets such as the health precinct, Bomen and the CBD; and allow us to travel to work and school, connect with family and friends, and access community services

The road hierarchy provides an efficient network that correlates with major traffic movements, links sub-arterial networks and prioritises people above road traffic in key locations and outlines the expected levels of service.

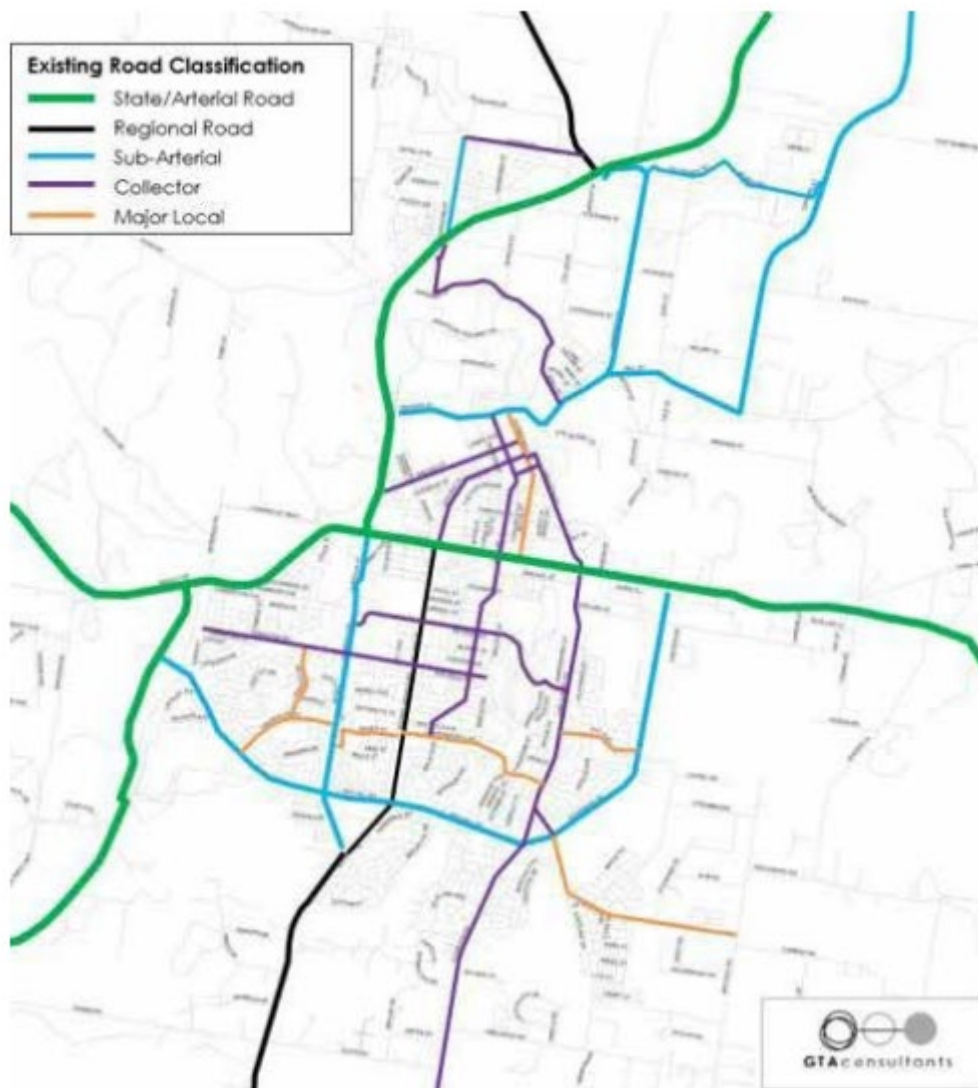
**Table 18 - Road Asset Service Hierarchy**

Asset Hierarchy	Service Level Objective
Arterial road (A)	Arterial roads carry longer distance traffic to, from and across the urban area. They have connections with the state or national road network running between urban areas and operate as truck routes and carry heavy goods vehicles. These roads generally carry more than 15,000 vehicles each day. The level of service for traffic flow should encourage rather than discourage traffic from using these roads. The Sturt Highway and Olympic Highway are arterial roads. These roads are the responsibility of RMS and, as such, any proposed changes or modification are funded and coordinated by them.
Regional road (R)	Regional roads perform an intermediate function between the main arterial network of State Roads and council controlled local roads. Due to their network significance Transport for NSW (TfNSW) provides financial assistance to councils for the management of their regional roads.
Sub-arterial road (SA)	Sub-arterial roads carry traffic between industrial, commercial and residential areas. These roads generally form a grid with roads spaced around 1.5 kilometres apart and link specific land use areas or "cells". These roads carry between 6,000 and 20,000 vehicles each day including heavy goods vehicles.
Collector road (C)	Collector roads link local roads to the arterial and sub-arterial roads. The route of collector roads discourages through traffic so that the cell formed by the grid only carries traffic belonging to or serving the cell. These roads carry between 5,000 and 10,000 vehicles each day and a 50 km/h speed limit will normally apply. While heavy vehicles are discouraged, bus services are permitted on these roads.
Local road	Local or access roads provide access to individual properties. An upper speed limit of 50 km/h will normally apply. These roads usually carry less than 1,500 to 2,000 vehicles each day. Majority of Council customers experience the urban road network.
Local major (L1)	The link between collector through the suburb or locality and the local minor roads.
Local minor (L2)	Remaining local roads.

Asset Hierarchy	Service Level Objective
Laneway	Provide properties with secondary access laneways within urban areas
Access	Unmaintained roads which provide access to a property in rural area. Roads to Council facilities.
Main Street (M)	The Main Street (Baylis & Fitzmaurice Streets) is a standalone street category. It is the focal point for the city, supporting activity throughout the day and into the night. It will continue to accommodate a mix of retail, employment, education and leisure uses and as such will require specific and different considerations than other road categories.

The figure below shows the current road hierarchy of Wagga Wagga City Council.

**Figure 11 – Road Hierarchy**



Source: Wagga Wagga Integrated Transport Strategy and Implementation Plan (WWITS) 2040

## 5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include culvert cleaning, street sweeping and asset inspection costs.

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. Examples of typical maintenance activities include asphalt patching, pothole repairs and footpath grinding.

The target maintenance activities associated with the transport assets included in this asset management plan are included in the table below. The table also includes the annual projected maintenance cost and compares it to the maintenance budgets identified in the Long Term Financial Plan 2022-2023.

**Table 19 - Target Annual Maintenance Events, Estimated Projected Costs and Current Budget**

Asset Category	Target Maintenance Event	Target Frequency	Projected Required Maintenance Budget	Actual Maintenance Budget	Funding Level
Bridges	Visual Inspection – Level 1	Network annually	\$688,523	\$293,007	43%
	Visual Inspection – Level 2	Every 5 years			
	Structural integrity testing - Level 3, Level 4 (if required)	As required by level 1 and 2 inspections			
	Minor Maintenance	Annually			
	Vegetation control	4 times per year			
	Delineation	400 units per year			
	Signs replacement	40 units per year			
Carparks	Guardrail maintenance	8 per year	\$164,377	\$55,177	34%
	Protective Coat Painting	917m <sup>2</sup> per year			
	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			
Culverts	Grading unsealed carparks	Network annually	\$1,638,559	\$370,053	23%
	Fettling unsealed carparks	Network annually			
	Cleaning	176 major per year 700 minor per year			
Footpaths and Shared Paths	Minor repairs (prioritised by road hierarchy and peak flow)	282 per year	\$510,003	\$554,831	109%
	Vegetation control	176 major per year 700 minor per year			
	Vegetation control	Network annually			
	Concrete - grinding	4.4km per year			
	Concrete – Hot mix correction	2.5km per year			
	Pothole patching – asphalt	8m <sup>2</sup> per year			
	Pothole patching – sealed shared paths (excluding asphalt)	8m <sup>2</sup> per year			
	Unsealed shared/foot paths-reshaping	8km per year			
Sealed Roads	Unsealed shared/foot paths-fettling	15km per year	\$6,852,687	\$4,862,733	71%
	Pavers – pressure clean	23,706m <sup>2</sup> per year			
	Mini stabilising (<150m <sup>2</sup> patched)	7,800m <sup>2</sup> per year			
	Pothole patching	1,989m <sup>3</sup> per year			
	Crack sealing	20km annually			
	Tree pruning	Annual inspection			
	Guardrail maintenance	8 per year			
Sweeping roads with kerb and gutter	380km annually				
Weed spraying roads without kerb and gutter	832km biannually				

Asset Category	Target Maintenance Event	Target Frequency	Projected Required Maintenance Budget	Actual Maintenance Budget	Funding Level
	Slashing roads without kerb and gutter	832km biannually			
	Sapling control roads without kerb and gutter	832km annually			
	Guide post replacement	1,750 per year			
	Shoulder grading (arterial regional and urban areas without kerb and gutter)	348km per 2 years			
	Drainage reshaping (arterial regional and urban areas without kerb and gutter)	348km per 2 years			
	Shoulder grading (sub arterial and collector roads outside urban area)	288km per 3 years			
	Drainage reshaping (sub arterial and collector roads outside urban area)	288km per 3 years			
	Shoulder grading (all other sealed roads outside the urban area)	196km per 4 years			
	Drainage reshaping (all other sealed roads outside the urban area)	196km per 4 years			
	Sign replacement on urban roads	1,310 per year			
	Sign replacement on rural roads	185 per year			
Unsealed Roads	Weed spraying	network biannually	\$3,110,405	\$1,910,041	61%
	Slashing	network biannually			
	Sapling control	network annually			
	Fettling	network annually			
	Guide post replacement	2,250 per year			
	Guardrail maintenance	8 per year			
	Annual Grading – collector, local major	272km per year			
	Drainage reshaping - collector, local major and urban	272km per year			
	Grading - Local minor, multi access, village	462km per year			
	Drainage reshaping - local minor, multi access, village	462km per year			
	Grading - access or lower hierarchy level	499km per year			
	Drainage reshaping- access or lower	499km per year			
	Sign replacement on urban roads	95 per year			
	Sign replacement on rural roads	280 per year			

Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan.

Reactive maintenance is carried out in accordance with response levels of service as detailed below.

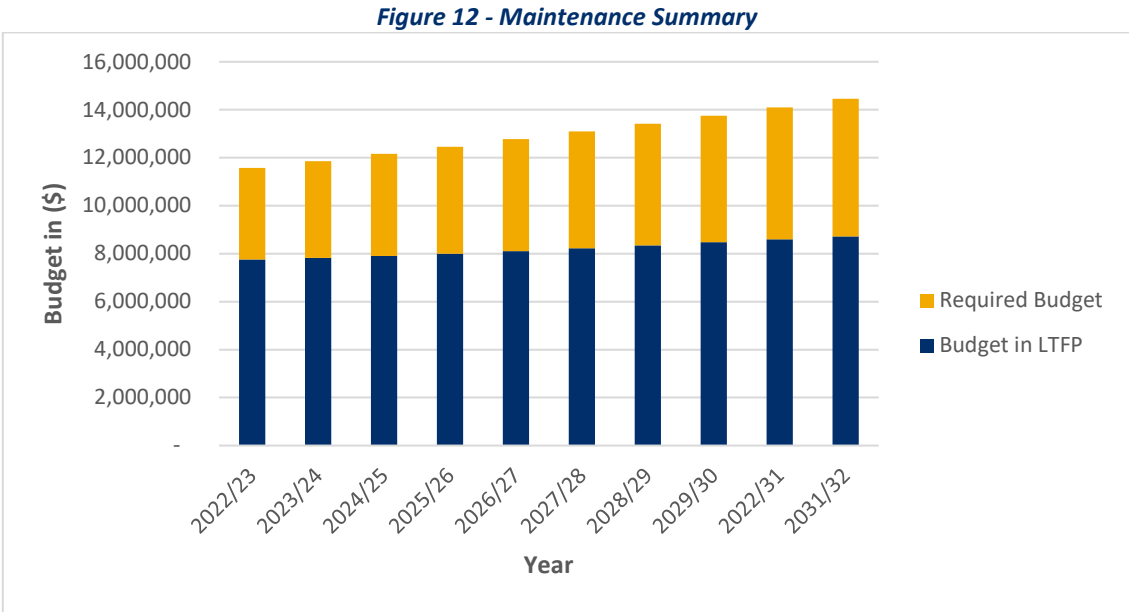
**Table 20 - Rural and Urban Reactive Maintenance Response Times**

Event	Response Times by Road Category					
	Regional Road	Arterial/Sub-Arterial and Collector	Local Major	Local Minor	Laneway	Urban
Edge Drop Offs/Breaks Minor<100mm Major>200mm	TBD after inspection 5days	TBD after inspection 5days	TBD after inspection 5days	N/A	N/A	N/A
Shoves (from top to bottom) Minor<250mm Major>250mm	1mth 14days	2mths 1mth	6mths 2mths	N/A	N/A	1mth 14days
Crocodile Cracking Minor<20m <sup>2</sup> /100 lin.m Major>20m <sup>2</sup> /100 lin.m	8mths 6mth			As required	N/A	1mth 14days
Potholes <75mm deep, OR <300mm dia. >75mm deep, OR >300mm dia.	10days 3days	10days 3days	1mth 10days	6mths 3mths	As required	14days 3days
Seal Bleeding Seal Stripping > 10m <sup>2</sup> /lin.m	5days6mths	5days 6mths	5days 6mths	N/A	N/A	5days 6mths
Cracking (longitudinal) 0-5m width 5m-10m width	6mths 12mths	6mths 12mths	6mths 12mths	N/A	N/A	6mths 12mths
Debris on carriageway	1day	1day	2days	5days	5days	1days
Visible Obstruction - Vegetation	1mth	1mth	3mths	3mths	3mths	1mth
Signs Regulatory/Warning missing	5days	5days	1mth	2mths	2mths	5days
Line Marking	6mth	6mths	6mths	N/A	N/A	6mth as needed
Guideposts	1mth	3mths	6mths	12mths	12mths	N/A
Guard Rail (make safe response)	5days	2wks	1mth	2mths	2mths	N/A
Drainage (minor system)	2mths	3mths	6mths	12mths	12mths	1mth
Kerb and gutter	N/A	N/A	N/A	N/A	N/A	Part of planned K&G works
Bus Shelters	N/A	1mth	N/A	N/A	N/A	1 mth
Street Lighting	N/A	Reported to appropriate Authority within 10days				
Corrugations	N/A	Assessment at 80km/hr travel speed and added to the grading program of works, or sooner when necessary based on criticality.				
Signs missing Poor condition	1mth					

**Summary of forecast maintenance costs**

Forecast maintenance costs are expected to vary in relation to the total value of the asset stock and the asset lifecycle stage. When additional assets are acquired, the future maintenance costs will increase.

Figure 12 below shows the forecast maintenance costs relative to the proposed maintenance planned budget.



The below tables provide the forecast maintenance costs and proposed maintenance budget for each asset class.

**Table 21 – Maintenance Forecast Summary**

BRIDGES		
Year	Maintenance Forecast	Total Maintenance Budget
2022/23	\$614,567	\$284,962
2023/24	\$629,932	\$286,610
2024/25	\$645,680	\$288,309
2025/26	\$661,822	\$290,058
2026/27	\$678,367	\$291,860
2027/28	\$695,327	\$293,716
2028/29	\$712,710	\$295,627
2029/30	\$730,528	\$297,596
2022/31	\$748,791	\$299,624
2031/32	\$767,511	\$301,712
<b>Totals</b>	<b>\$6,885,235</b>	<b>\$2,930,074</b>

<b>CARPARKS</b>		
<b>Year</b>	<b>Maintenance Forecast</b>	<b>Total Maintenance Budget</b>
2022/23	\$146,721	\$43,873
2023/24	\$150,389	\$46,019
2024/25	\$154,148	\$48,288
2025/26	\$158,002	\$50,687
2026/27	\$161,952	\$53,224
2027/28	\$166,001	\$55,909
2028/29	\$170,151	\$58,750
2029/30	\$174,405	\$61,758
2022/31	\$178,765	\$64,943
2031/32	\$183,234	\$68,316
<b>Totals</b>	<b>\$1,643,768</b>	<b>\$551,767</b>

<b>CULVERTS</b>		
<b>Year</b>	<b>Maintenance Forecast</b>	<b>Total Maintenance Budget</b>
2022/23	\$1,462,557	\$359,454
2023/24	\$1,499,121	\$361,637
2024/25	\$1,536,599	\$363,906
2025/26	\$1,575,014	\$366,208
2026/27	\$1,614,390	\$368,591
2027/28	\$1,654,749	\$370,973
2028/29	\$1,696,118	\$373,356
2029/30	\$1,738,521	\$376,043
2022/31	\$1,781,984	\$378,784
2031/32	\$1,826,534	\$381,580
<b>Totals</b>	<b>\$16,385,587</b>	<b>\$3,700,532</b>

<b>FOOTPATHS AND SHARED PATHS</b>		
<b>Year</b>	<b>Maintenance Forecast</b>	<b>Total Maintenance Budget</b>
2022/23	\$455,223	\$480,629
2023/24	\$466,603	\$490,517
2024/25	\$478,268	\$500,761
2025/26	\$490,225	\$511,356
2026/27	\$502,480	\$521,503
2027/28	\$515,042	\$531,850
2028/29	\$527,919	\$542,328
2029/30	\$541,117	\$557,166
2022/31	\$554,644	\$572,450
2031/32	\$568,511	\$588,191
<b>Totals</b>	<b>\$5,100,032</b>	<b>\$5,296,751</b>



SEALED ROADS		
Year	Maintenance Forecast	Total Maintenance Budget
2022/23	\$6,116,624	\$4,607,185
2023/24	\$6,269,540	\$4,659,847
2024/25	\$6,426,278	\$4,714,429
2025/26	\$6,586,935	\$4,770,369
2026/27	\$6,751,608	\$4,828,294
2027/28	\$6,920,399	\$4,887,530
2028/29	\$7,093,409	\$4,948,061
2029/30	\$7,270,744	\$5,013,644
2022/31	\$7,452,512	\$5,070,016
2031/32	\$7,638,825	\$5,127,952
<b>Totals</b>	<b>\$68,526,874</b>	<b>\$48,627,327</b>

UNSEALED ROADS		
Year	Maintenance Forecast	Total Maintenance Budget
2022/23	\$2,776,309	\$1,817,363
2023/24	\$2,845,717	\$1,811,430
2024/25	\$2,916,860	\$1,826,025
2025/26	\$2,989,781	\$1,840,929
2026/27	\$3,064,526	\$1,871,345
2027/28	\$3,141,139	\$1,908,771
2028/29	\$3,219,667	\$1,946,946
2029/30	\$3,300,159	\$1,985,885
2022/31	\$3,382,663	\$2,025,603
2031/32	\$3,467,230	\$2,066,115
<b>Totals</b>	<b>\$31,104,051</b>	<b>\$19,100,412</b>

### 5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown below.

**Table 22 - Useful Lives of Assets and Renewal**

Asset Category	Description	Useful life (Years)	
Bridges	Concrete bridges	50 to 100	
	Brick and Steel	40	
	Timber and Concrete	20	
	Timber	20	
Bus and Taxi Shelters	All	20 to 50	
Carparks - Sealed	Seal – aggregate seal	15	
	Seal – hotmix overlay	25	
	Pavement	20 to 80	
	Formation	100	
Carparks - Unsealed	Pavement	25	
	Formation/subgrade	100	
Culverts	All	50	
Footpaths, Shared Paths and Cycleways	Pavers	40	
	Gravel/granite	25	
	Aggregate seal	15	
	Concrete	50	
Kerb and Gutter	All Concrete	50	
Sealed Roads Applied across the road hierarchy. Formation, carriageway, seal widths and layer depth will vary.	Seal – aggregate seal	15	
	Seal – hotmix overlay	25	
	Pavement rehabilitation	20 to 80	
	(Re)formation of the subgrade layer	100	
Unsealed Roads	Resheeting and reshaping	5 to 40	
	(Re)formation of the base layer	100 years	
	Collector 13km	3km	5yr Full Length Resheet Cycle
	Local – Major 122km	12km	10yr Full Length Resheet Cycle
	Local – Minor 332km	22km	15yr Full Length Resheet Cycle
	Multi Access 131km	n/a	Nil *
	Access 380km	n/a	Nil *
Other 119km	n/a	Nil *	
* This Hierarchy of Roads will not be graded or gravel resheeted unless the road is in critical need and / or creates a risk to road users.			

### 5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate, or
- To ensure the infrastructure is of sufficient quality to meet the service requirements.<sup>4</sup>

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.<sup>5</sup>

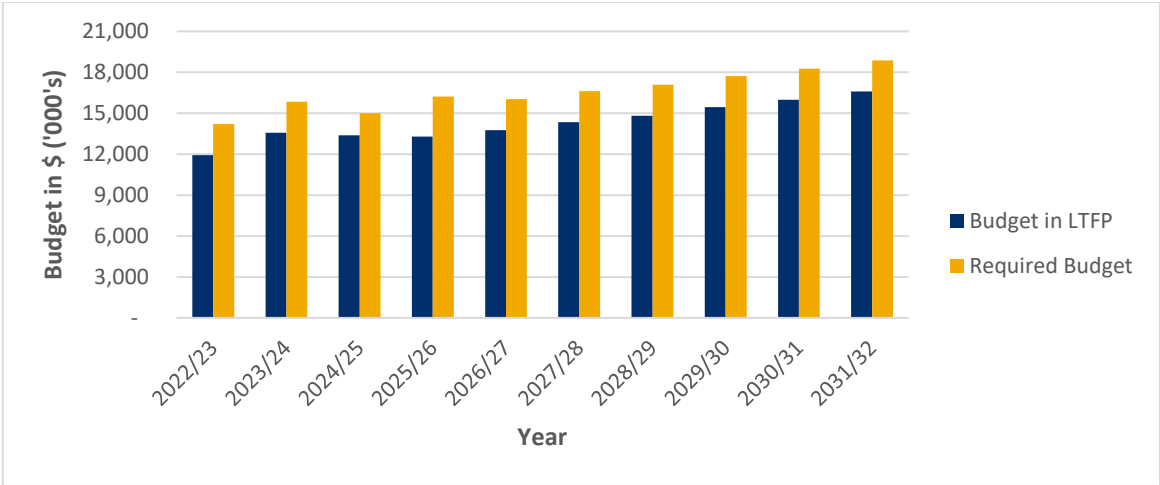
<sup>4</sup> IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

<sup>5</sup> Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

**5.4 Summary of future renewal costs**

Forecast renewal costs are projected to increase over time as the asset base increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 13. A detailed summary of the forecast renewal costs for each asset class is shown in the tables below.

**Figure 13 - Forecast Renewal Costs**



**Table 23 - Renewal Forecast Summary**

BRIDGES		
Year	Renewal Forecast	Renewal Budget
2022/23	\$1,475,624	\$0
2023/24	\$1,475,624	\$0
2024/25	\$1,475,624	\$0
2025/26	\$1,475,624	\$0
2026/27	\$1,475,624	\$0
2027/28	\$1,475,624	\$0
2028/29	\$1,475,624	\$0
2029/30	\$1,475,624	\$0
2030/31	\$1,475,624	\$0
2031/32	\$1,475,624	\$0
<b>TOTALS</b>	<b>\$14,756,237</b>	<b>\$0</b>

CARPARKS		
Year	Renewal Forecast	Renewal Budget
2022/23	\$193,180	\$0
2023/24	\$193,180	\$0
2024/25	\$193,180	\$0
2025/26	\$193,180	\$0
2026/27	\$193,180	\$0
2027/28	\$193,180	\$0
2028/29	\$193,180	\$0
2029/30	\$193,180	\$0
2030/31	\$193,180	\$0
2031/32	\$193,180	\$0
<b>TOTALS</b>	<b>\$1,931,804</b>	<b>\$0</b>

<b>CULVERTS</b>		
<b>Year</b>	<b>Renewal Forecast</b>	<b>Renewal Budget</b>
2022/23	\$651,911	\$651,911
2023/24	\$679,531	\$679,531
2024/25	\$708,256	\$708,256
2025/26	\$738,094	\$738,094
2026/27	\$769,119	\$769,119
2027/28	\$799,884	\$799,884
2028/29	\$830,649	\$830,649
2029/30	\$863,875	\$863,875
2030/31	\$898,430	\$898,430
2031/32	\$934,367	\$934,367
<b>TOTALS</b>	<b>\$7,874,116</b>	<b>\$7,874,116</b>

<b>FOOTPATHS AND SHARED PATHS</b>		
<b>Year</b>	<b>Renewal Forecast</b>	<b>Renewal Budget</b>
2022/23	\$652,468	\$42,000
2023/24	\$652,468	\$42,000
2024/25	\$652,468	\$42,000
2025/26	\$652,468	\$42,000
2026/27	\$652,468	\$42,000
2027/28	\$652,468	\$42,000
2028/29	\$652,468	\$42,000
2029/30	\$652,468	\$42,000
2030/31	\$652,468	\$42,000
2031/32	\$652,468	\$42,000
<b>TOTALS</b>	<b>\$6,524,677</b>	<b>\$420,000</b>

<b>KERB AND GUTTER</b>		
<b>Year</b>	<b>Renewal Forecast</b>	<b>Renewal Budget</b>
2022/23	\$535,147	\$535,147
2023/24	\$557,167	\$557,167
2024/25	\$580,067	\$580,067
2025/26	\$603,870	\$603,870
2026/27	\$628,622	\$628,622
2027/28	\$653,767	\$653,767
2028/29	\$678,912	\$678,912
2029/30	\$706,068	\$706,068
2030/31	\$734,310	\$734,310
2031/32	\$763,682	\$763,682
<b>TOTALS</b>	<b>\$6,441,612</b>	<b>\$6,441,612</b>

SEALED ROADS		
Year	Renewal Forecast	Renewal Budget
2022/23	\$8,863,938	\$8,863,938
2023/24	\$10,392,188	\$10,392,188
2024/25	\$9,414,085	\$9,414,085
2025/26	\$10,484,786	\$10,484,786
2026/27	\$10,170,842	\$10,170,842
2027/28	\$10,607,934	\$10,607,934
2028/29	\$10,938,839	\$10,938,839
2029/30	\$11,410,812	\$11,410,812
2030/31	\$11,784,856	\$11,784,856
2031/32	\$12,232,290	\$12,232,290
<b>TOTALS</b>	<b>\$106,300,570</b>	<b>\$106,300,570</b>

UNSEALED ROADS		
Year	Renewal Forecast	Renewal Budget
2022/23	\$1,827,738	\$1,827,738
2023/24	\$1,904,728	\$1,904,728
2024/25	\$1,984,797	\$1,984,797
2025/26	\$2,067,981	\$2,067,981
2026/27	\$2,154,476	\$2,154,476
2027/28	\$2,240,655	\$2,240,655
2028/29	\$2,326,834	\$2,326,834
2029/30	\$2,419,907	\$2,419,907
2030/31	\$2,516,703	\$2,516,703
2031/32	\$2,617,371	\$2,617,371
<b>TOTALS</b>	<b>\$22,061,190</b>	<b>\$22,061,190</b>

As can be seen in the above tables and graph, Council does not currently allocate enough funding to cover predicted renewal activities for transport assets, in particular bridges, carparks and footpaths.

## 5.5 Acquisition Plan

Acquisition reflects new assets or works which will upgrade or improve an existing asset beyond its current service capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated or dedicated to Council.

The [Wagga Wagga Local Infrastructure Contributions Plan 2019-2034 \(LICP\)](#) identifies where development will take place, the expected population growth of these areas and identifies additional local infrastructure required to support the development and determines how it will be funded. Assets include roads and shared paths, parks and recreation facilities, and community facilities. This plan applies to all land in the Wagga Wagga local government area. A significant percentage of the new and upgraded transport assets required to support the growth of the city are fully funded by infrastructure contributions under the LICP.

Local Infrastructure Contribution Plans need to prove a nexus between development paying infrastructure contributions and assets identified in the Plan. To develop a LICP, Council should undertake significant community engagement and traffic modelling to test the nexus for each asset proposed. The outcomes of both processes are carefully considered and balanced with ensuring affordability of the Section 7.11 contribution rates charged to developers.

As the city is continuing to grow, Council is dedicated a significant amount of traffic infrastructure each year in the new urban release areas. These assets to be added to existing networks are approved by Council via the development application and master planning process. The following tables detail the design requirements of new transport assets.

**Table 24 – Design Standards – Urban Roads**

Road type	Target design speed	Maximum number of lots serviced	Minimum width carriage way	Other requirements
Industrial	60km	-	19m	Cycle ways to be marked. Kerb and gutter required, 40mm asphaltic concrete (AC), flexible pavement design life of 30 years, min grade subsoil drainage 1m:250m
Arterial	80km	500 - 750	19m	2.5m shared path on one side of the road, kerb and gutter required, 40mm asphaltic concrete (AC), flexible pavement design life of 30 years, min grade subsoil drainage 1m:250m
Collector	60km	300	13m	Footpaths 1.5m on one side, marked shared paths, kerb and gutter required, 40mm asphaltic concrete (AC), flexible pavement design life of 30 years, min grade subsoil drainage 1m:250m
Local access	50km	100	9m	Footpaths 1.5m on one side, marked shared paths, kerb and gutter required, 40mm asphaltic concrete (AC), flexible pavement design life of 30 years, min grade subsoil drainage 1m:250m
Access street	25km	10	7.5m	Kerb and gutter required, 40mm asphaltic concrete (AC), flexible pavement design life of 30 years, min grade subsoil drainage 1m:250m

**Table 25 – Design Standards – Rural Roads**

Vehicles per day	Road reserve	Carriageway	Shoulder	Seal	Formation
500	23m	6m	1m	7m	8m
500-1000	23m	6.5m	1m	7.5m	8.5m
1000-2000	23m	6.5m	2m	8.5m	10.5m
>2000 and all B double routes	30m	7m	2m	9m	11m

**Table 26 – Design Standards – Footpaths and Shared paths**

Element	Requirement
Width	1.2m in existing areas, 1.5m in new developments, 2.5m for shared paths
Thickness	Reinforced concrete with a minimum 75mm and 100mm at driveways for footpaths 30mm asphalt over 150mm gravel pavement for shared paths
Materials	Concrete footpaths Asphalt shared paths
Crossfall	Minimum 1%, Maximum 3%
Longitudinal Grade	Maximum 7%
Location	600mm from property boundary
Construction	At developers cost after 80% of buildings are completed or thickness of 100mm at time of subdivision

Source: For full context and details please refer to the [Engineering Guidelines for Subdivisions and Development Standards – Adopted April 2017](#).

**Summary of future asset acquisition costs**

Forecast acquisition asset costs are shown relative to the proposed acquisition budgets in the tables below.

**Table 27 - Acquisition Forecast Summary**

<b>BRIDGES</b>		
<b>Year</b>	<b>Required Budget</b>	<b>Budget in LTFP</b>
2022/23	\$0	\$0
2023/24	\$1,116,027*	\$1,116,027*
2024/25	\$0	\$0
2025/26	\$0	\$0
2026/27	\$0	\$0
2027/28	\$0	\$0
2028/29	\$0	\$0
2029/30	\$0	\$0
2030/31	\$0	\$0
2031/32	\$0	\$0
<b>TOTALS</b>	<b>\$1,116,027</b>	<b>\$1,116,027</b>

\*Amundsen Bridge connecting Bradman Drive across a natural watercourse

<b>FOOTPATHS AND SHARED PATHS</b>		
<b>Year</b>	<b>Required Budget</b>	<b>Budget in LTFP</b>
2022/23	\$0	\$20,000
2023/24	\$0	\$20,000
2024/25	\$3,731,500	\$20,000
2025/26	\$325,013	\$345,013
2026/27	\$7,517,206	\$1,636,506
2027/28	\$0	420,000
2028/29	\$0	420,000
2029/30	\$0	\$20,000
2030/31	\$0	\$20,000
2031/32	\$0	\$20,000
<b>TOTALS</b>	<b>\$11,573,719</b>	<b>\$2,141,519</b>

<b>SEALED ROADS</b>		
<b>Year</b>	<b>Required Budget</b>	<b>Budget in LTFP</b>
2022/23	\$16,123,435	\$16,123,435
2023/24	\$9,061,805	\$9,061,805
2024/25	\$1,101,369	\$1,101,369
2025/26	\$10,668,857	\$10,668,857
2026/27	\$2,319,051	\$2,319,051
2027/28	\$2,353,129	\$2,353,129
2028/29	\$3,494,675	\$3,494,675
2029/30	\$1,151,636	\$1,151,636
2030/31	\$1,174,668	\$1,174,668
2031/32	\$0	\$0
<b>TOTALS</b>	<b>\$47,448,625</b>	<b>\$47,448,625</b>

When Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by Council. The following table shows how much the maintenance budgets should increase as the transport network increases.

**Table 28 – Additional Maintenance Budget for Additional Assets in the Transport Network**

Asset Category	Type	Unit	Maintenance Budget Increase per Additional Unit
Bridges		m <sup>2</sup>	\$11.67
Carparks		Not provided	
Culverts		Culvert cell	\$221.58
Footpaths and Shared Paths	Concrete – sealed	m <sup>2</sup>	\$1.11
	Concrete asphalt – sealed		\$8.18
	Sealed		\$1.84
	Pavers		\$0.38
	Unsealed		\$1.87
Kerb and gutter		Lineal metre	\$0.52
Sealed Roads	high priority urban sealed roads	m <sup>2</sup>	\$6.47
	high priority rural sealed roads		\$5.98
	medium priority rural sealed roads		\$5.31
	low priority rural sealed roads		\$4.96
Unsealed Roads	high priority urban unsealed road	m <sup>2</sup>	\$6.47
	high priority rural unsealed road		\$5.88
	medium priority rural unsealed road		\$3.71
	low priority rural unsealed road		\$3.71

Expenditure on new assets and services in the capital works program will be accommodated in the long term financial plan, but only to the extent that there is available funding.

Most new assets are linked to development and are therefore paid by developers, under the LICP.

**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.

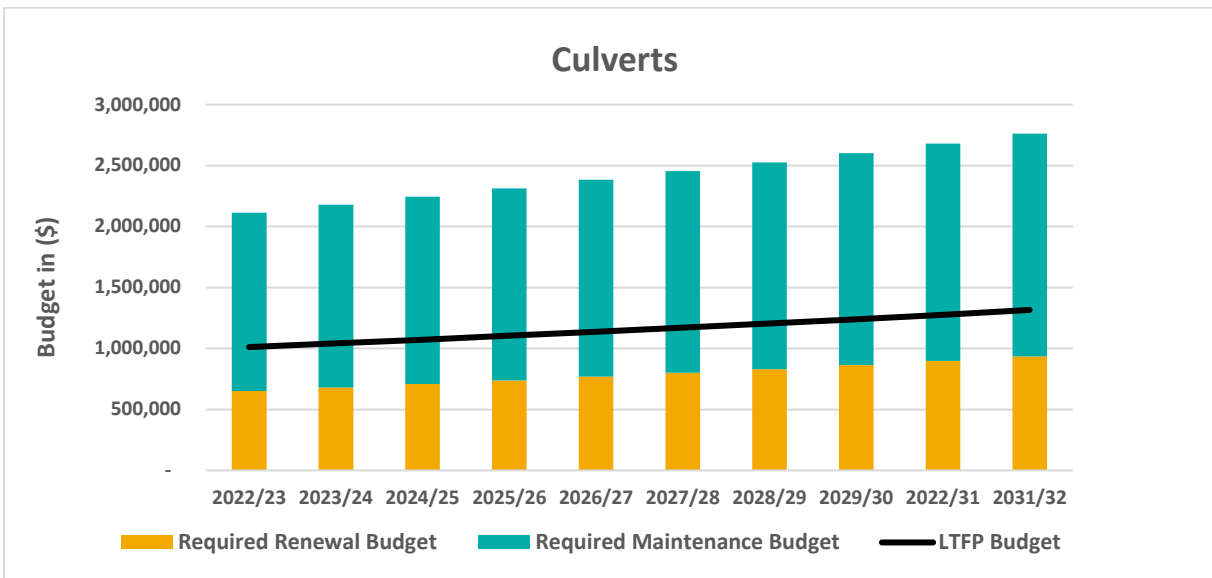
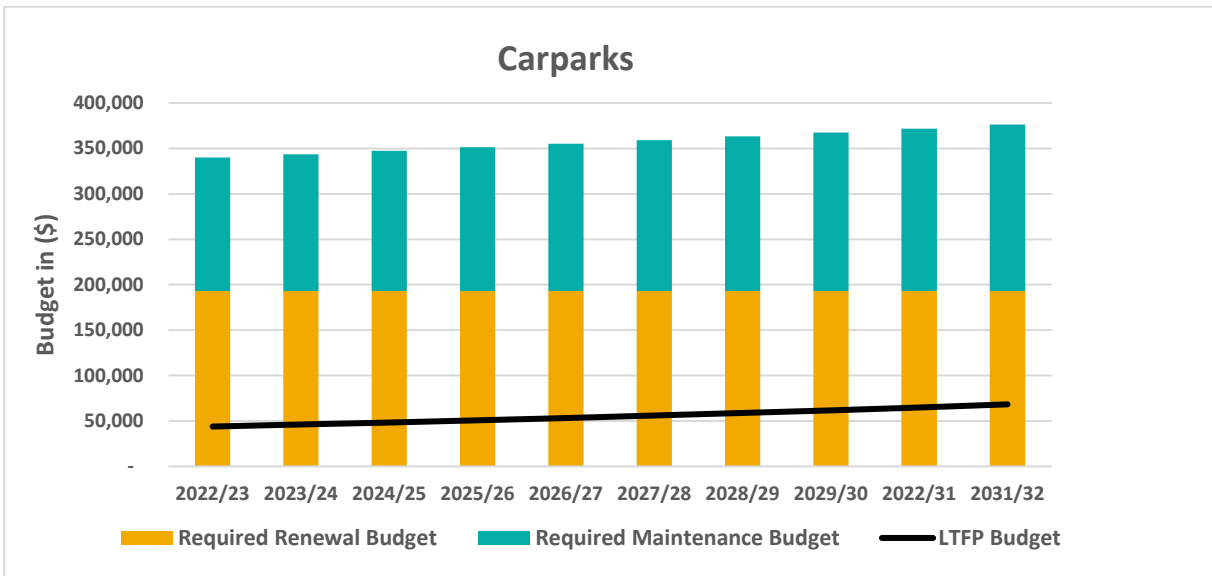
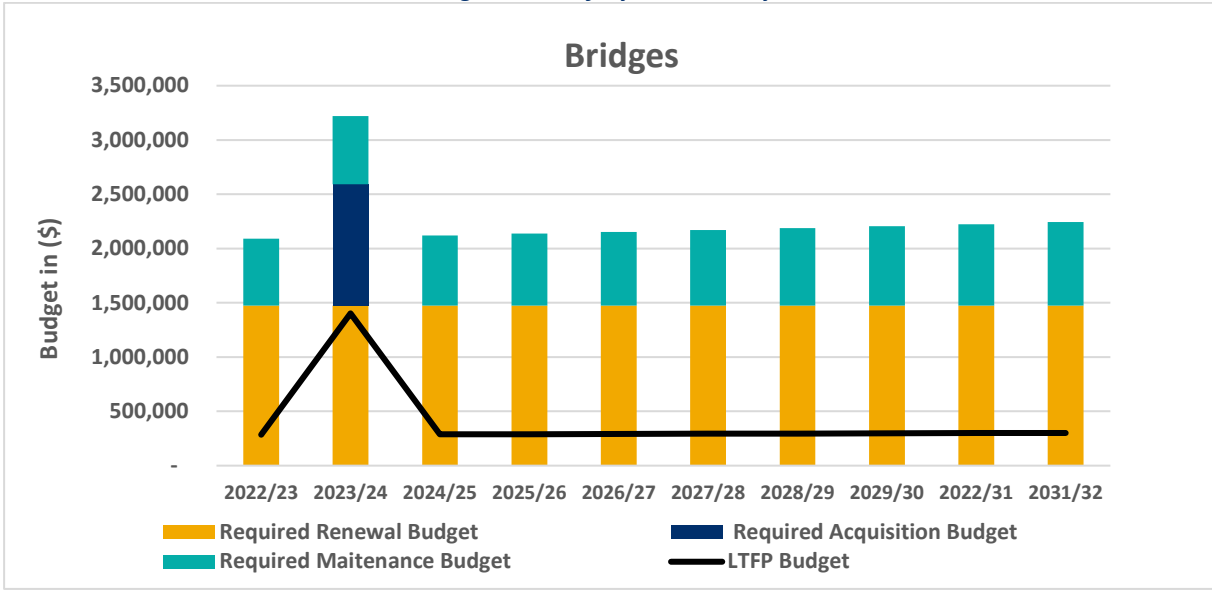
**5.7 Summary of asset forecast costs**

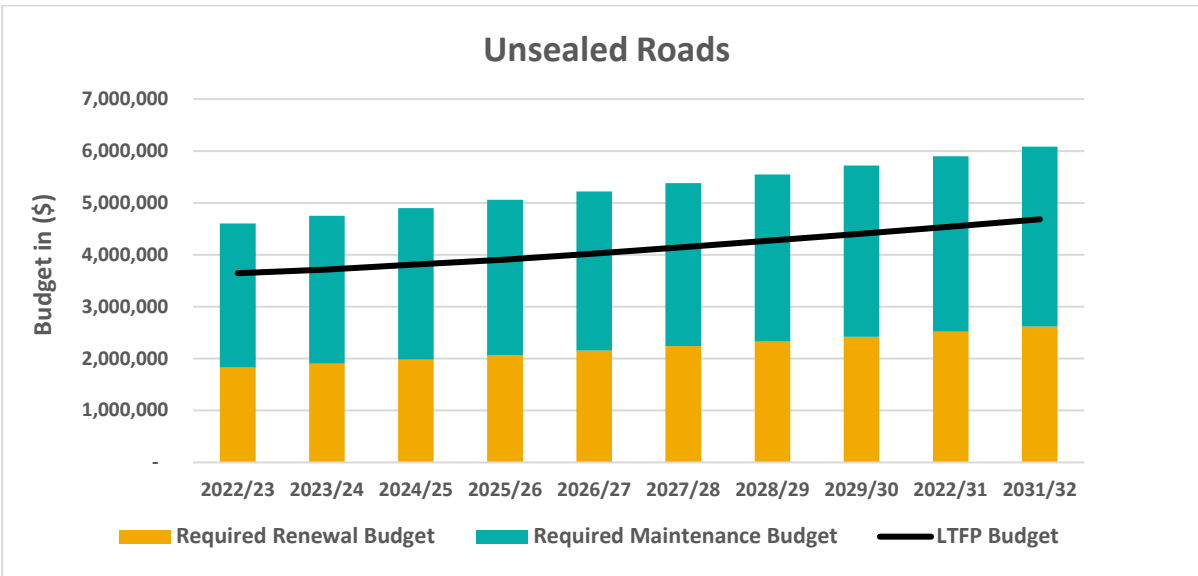
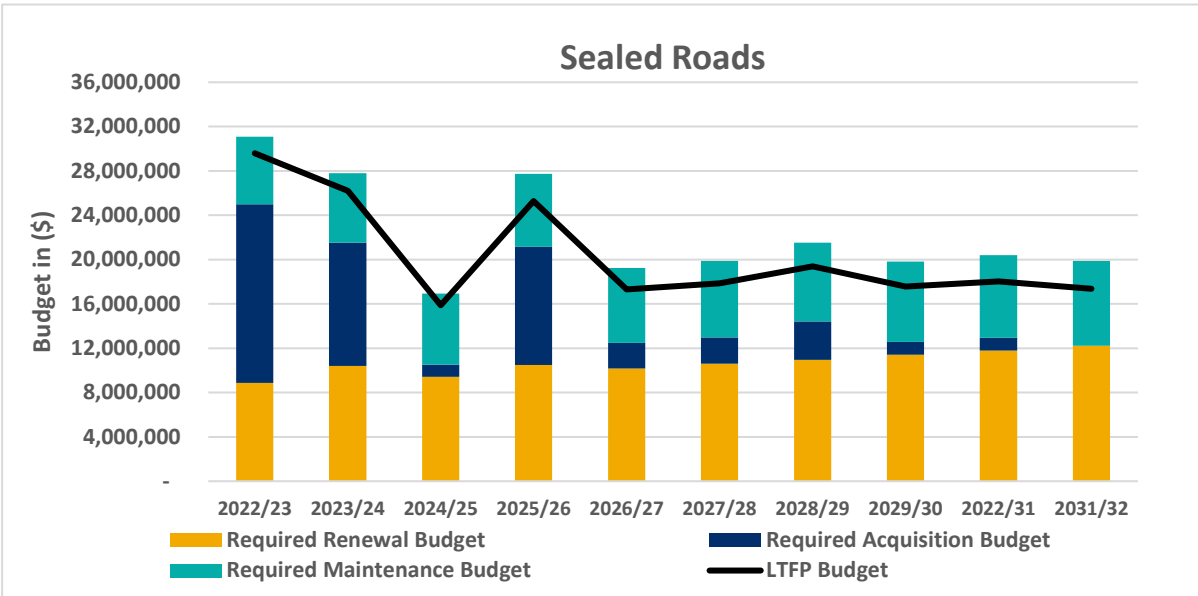
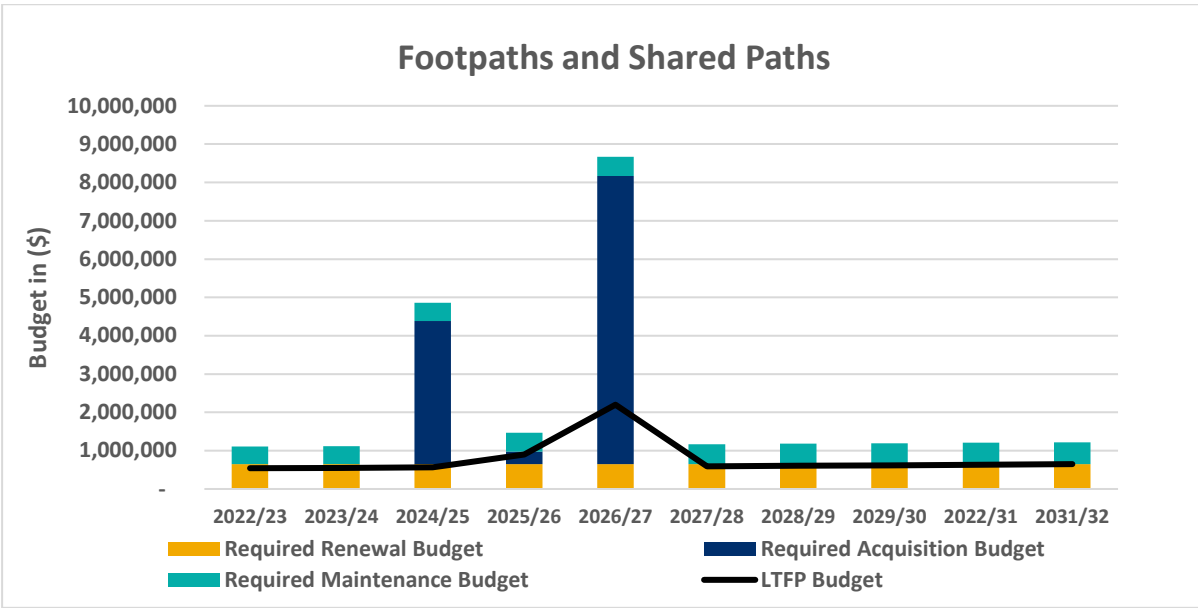
The financial projections from this asset plan are shown in Figure 14. These projections include forecast costs for acquisition, maintenance and renewal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the provision of transport assets. The proposed budget line indicates the available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.



Figure 14 - Lifecycle Summary





## 6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’<sup>6</sup>.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

### 6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. If critical transport assets fail, there is no other asset to provide access into the area. The critical transport asset identified and along with their typical failure mode, and the impact on service delivery, are summarised below. Failure modes may include physical failure, collapse or essential service interruption.

**Table 29 - Critical Assets**

Critical Assets	Failure Mode	Impact	Action
Gobgombalin Bridge	Flooding	If Gobgombalin Bridge was to flood there would be no access into the city from the north (as the roads from North Wagga will be cut also)	Residents to be provided with services and supplies from other centres
Road Access into North Wagga	Flooding	North Wagga residence cannot enter or exist their homes. Access to the city from the south is not possible	Evacuate the North Wagga Area as per the Flood Management Plan Manual

By identifying critical assets and failure modes, an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted towards critical assets.

### 6.2 Risk Assessment

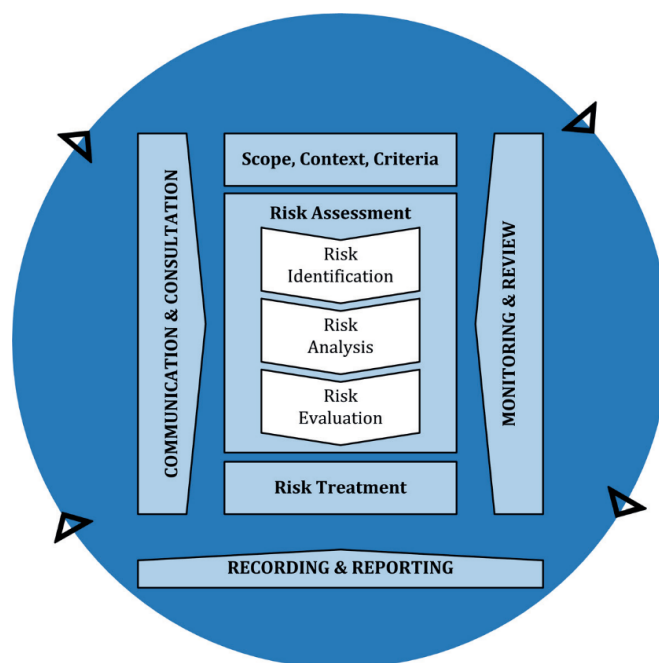
The risk management process used is shown in Figure 15 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

<sup>6</sup> ISO 31000:2009, p 2

**Figure 15 - Risk Management Process**



Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences.

**Table 30 – Risk Types**

Risk Types	Description
Financial Risks	Risks the organisation is exposed to that may prevent the achievement of its long term financial sustainability (as outlined in Council’s Long Term Financial Plan).
Governance & Compliance Risks	Risks the organisation is exposed to that may not be considered in the best interest of stakeholders, or that the organisation does not behave as a good corporate citizen should, or may leave Council legally exposed.
Reputational Risks	Risks the organisation is exposed to that may lead to widespread and/or sustained damage to Council’s reputation.
Environmental Risks	Risks the organisation is exposed to that may prevent it maintaining its commitment to the principles of ecologically sustainable development.
Service Delivery Risks	Risks the organisation is exposed to that may prevent achievement of its core service delivery objectives, including people, knowledge, technology and/or tools and equipment.
Health and Safety	Risks the organisation is exposed to that may compromise the health and safety staff, contractors, volunteers and/or members of the public.

### **6.3 Service and Risk Trade-Offs**

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

#### **6.3.1 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:

- Maintain bridges, carparks, culverts, sealed roads and unsealed roads to the level detailed in the Plan,
- Conducting Level 3 bridge assessments on the entire bridge network,
- Renew any bridges, carparks, footpaths, shared paths and cycleways in condition 4 and 5,
- Renew all other traffic assets in condition 4 and 5, and
- Construct required footpaths and shared paths identified in the LICP.

#### **6.3.2 Service trade-off**

If there is forecast work (operations, maintenance, renewal and acquisition) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- Bridges, carparks, 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, carparks, footpaths, shared paths and cycleways in condition 4 and 5 will not be replaced and in extreme circumstances they may be required to be taken out of service, and
- Sealed road pavement will not be renewed and therefore the cracking, rutting and roughness of these sealed roads is expected to worsen.

#### **6.3.3 Risk trade-off**

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

- Potentially dissatisfied members of the community
- Periodic increased maintenance requirements on affected assets
- Lower travelling speeds on roads and/or greater risk of road accidents through driver inattention on road sections with identified functional deficiencies
- Increased Insurance claims

## 7.0 FINANCIAL SUMMARY

This section contains the financial requirements resulting from the information presented in the previous sections of this AM Plan. The financial projections will continue be improved as the discussion on desired levels of service and asset performance matures.

### 7.1 Financial Sustainability and Projections

#### 7.1.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AM Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

#### Asset Renewal Funding Ratio

Asset Renewal Funding Ratio<sup>7</sup> is 86%.

**Table 31 – Asset Renewal Ratio per Asset Category**

Asset Category	Asset Renewal Ratio
Bridges	0%
Carparks	0%
Culverts	100%
Footpaths, Shared Paths and Cycleways	6%
Kerb and Gutter	100%
Sealed Roads – pavement	100%
Sealed Roads – seal	100%
Unsealed Roads	100%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 86% of the funds required for the optimal renewal of assets.

#### Medium term – 10 year financial planning period

This AM Plan identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the proposed budget over the 10 year planning period to identify any funding shortfall.

The forecast operations, maintenance, acquisition and renewal costs over the 10 year planning period is \$35,776,082 on average per year.

The proposed (budget) operations, maintenance acquisition and renewal funding is \$27,802,773 on average per year giving a 10 year funding shortfall of \$7,973,309 per year. This indicates that 78% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget.

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<sup>7</sup> AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first years of the AM Plan and ideally over the 10 year life of the Long-Term Financial Plan.

### 7.1.2 Forecast Costs for the long-term financial plan

Table 33 shows the forecast costs required for consideration in the 10 year long term financial plan.

Providing services in a financially sustainable manner requires a balance between the forecast costs required to deliver the agreed service levels with the planned budget allocations in the long-term financial plan.

A gap between the forecast costs and the amounts allocated in the long-term financial plan indicates further work is required to either review the service levels included in the AM Plan or review the funding allocations in the long-term financial plan.

We will manage the 'gap' by developing this AM Plan to provide guidance on future service levels and resources required to provide these services in consultation with the community.

**Table 32 - Forecast Costs for the Long Term Financial Plan**

<b>BRIDGES</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$0	\$614,567	\$1,475,624
2023/24	\$1,116,027*	\$629,932	\$1,475,624
2024/25	\$0	\$645,680	\$1,475,624
2025/26	\$0	\$661,822	\$1,475,624
2026/27	\$0	\$678,367	\$1,475,624
2027/28	\$0	\$695,327	\$1,475,624
2028/29	\$0	\$712,710	\$1,475,624
2029/30	\$0	\$730,528	\$1,475,624
2030/31	\$0	\$748,791	\$1,475,624
2031/32	\$0	\$767,511	\$1,475,624
<b>TOTALS</b>	<b>\$1,116,027</b>	<b>\$6,885,235</b>	<b>\$14,756,237</b>

\*Amundsen Bridge connecting Bradman Drive across a natural watercourse

<b>CARPARKS</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$0	\$146,721	\$193,180
2023/24	\$0	\$150,389	\$193,180
2024/25	\$0	\$154,148	\$193,180
2025/26	\$0	\$158,002	\$193,180
2026/27	\$0	\$161,952	\$193,180
2027/28	\$0	\$166,001	\$193,180
2028/29	\$0	\$170,151	\$193,180
2029/30	\$0	\$174,405	\$193,180
2030/31	\$0	\$178,765	\$193,180
2031/32	\$0	\$183,234	\$193,180
<b>TOTALS</b>	<b>\$0</b>	<b>\$1,643,768</b>	<b>\$1,931,804</b>

<b>CULVERTS</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$0	\$1,462,557	\$651,911
2023/24	\$0	\$1,499,121	\$679,531
2024/25	\$0	\$1,536,599	\$708,256
2025/26	\$0	\$1,575,014	\$738,094
2026/27	\$0	\$1,614,390	\$769,119
2027/28	\$0	\$1,654,749	\$799,884
2028/29	\$0	\$1,696,118	\$830,649
2029/30	\$0	\$1,738,521	\$863,875
2030/31	\$0	\$1,781,984	\$898,430
2031/32	\$0	\$1,826,534	\$934,367
<b>TOTALS</b>	<b>\$0</b>	<b>\$16,385,587</b>	<b>\$7,874,116</b>

<b>FOOTPATHS AND SHARED PATHS</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$0	\$455,223	\$652,468
2023/24	\$0	\$466,603	\$652,468
2024/25	\$3,731,500	\$478,268	\$652,468
2025/26	\$325,013	\$490,225	\$652,468
2026/27	\$7,517,206	\$502,480	\$652,468
2027/28	\$0	\$515,042	\$652,468
2028/29	\$0	\$527,919	\$652,468
2029/30	\$0	\$541,117	\$652,468
2030/31	\$0	\$554,644	\$652,468
2031/32	\$0	\$568,511	\$652,468
<b>TOTALS</b>	<b>\$11,573,719</b>	<b>\$5,100,032</b>	<b>\$6,524,677</b>

<b>KERB AND GUTTER</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$0	\$0	\$535,147
2023/24	\$0	\$0	\$557,167
2024/25	\$0	\$0	\$580,067
2025/26	\$0	\$0	\$603,870
2026/27	\$0	\$0	\$628,622
2027/28	\$0	\$0	\$653,767
2028/29	\$0	\$0	\$678,912
2029/30	\$0	\$0	\$706,068
2030/31	\$0	\$0	\$734,310
2031/32	\$0	\$0	\$763,682
<b>TOTALS</b>	<b>\$0</b>	<b>\$0</b>	<b>\$6,441,612</b>



<b>SEALED ROADS</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$16,123,435	\$6,116,624	\$8,863,938
2023/24	\$11,148,498	\$6,269,540	\$10,392,188
2024/25	\$1,101,369	\$6,426,278	\$9,414,085
2025/26	\$10,668,857	\$6,586,935	\$10,484,786
2026/27	\$2,319,051	\$6,751,608	\$10,170,842
2027/28	\$2,353,129	\$6,920,399	\$10,607,934
2028/29	\$3,494,675	\$7,093,409	\$10,938,839
2029/30	\$1,151,636	\$7,270,744	\$11,410,812
2030/31	\$1,174,668	\$7,452,512	\$11,784,856
2031/32	\$0	\$7,638,825	\$12,232,290
<b>TOTALS</b>	<b>\$49,535,318</b>	<b>\$68,526,874</b>	<b>\$106,300,570</b>

<b>UNSEALED ROADS</b>			
<b>Year</b>	<b>Acquisition</b>	<b>Maintenance</b>	<b>Renewal</b>
2022/23	\$0	\$2,776,309	\$1,827,738
2023/24	\$0	\$2,845,717	\$1,904,728
2024/25	\$0	\$2,916,860	\$1,984,797
2025/26	\$0	\$2,989,781	\$2,067,981
2026/27	\$0	\$3,064,526	\$2,154,476
2027/28	\$0	\$3,141,139	\$2,240,655
2028/29	\$0	\$3,219,667	\$2,326,834
2029/30	\$0	\$3,330,159	\$2,419,907
2030/31	\$0	\$3,382,663	\$2,516,703
2031/32	\$0	\$3,467,230	\$2,617,371
<b>TOTALS</b>	<b>\$0</b>	<b>\$31,104,051</b>	<b>\$22,061,190</b>

## 7.2 Funding Strategy

The proposed funding for assets is outlined in Councils 2022-2023 Long Term Financial Plan.

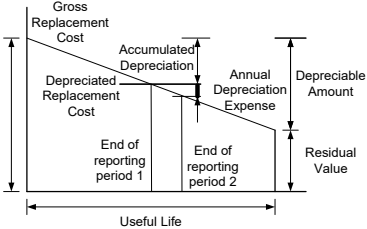
The financial strategies of Council determine how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

**7.3 Valuation Forecasts**

**7.3.1 Asset valuations**

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at fair value.

Replacement Cost (Current/Gross)	\$ 882,574,431
Depreciable Amount	\$ 728,811,355
Depreciated Replacement Cost <sup>8</sup>	\$ 546,971,330
Annual Depreciation	\$ 15,662,694



**7.3.2 Valuation forecast**

Asset values are forecast to increase as additional assets are added to Council’s asset base.

Additional assets will generally add to the operations and maintenance needs of Council in the longer term. This will also result in additional lifecycle costs due to future renewals works that will be required. Any additional assets will also add to future depreciation forecasts.

**7.4 Key Assumptions Made in Financial Forecasts**

In compiling this AM Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AM Plan are:

- The services provided by assets are consumed at a constant rate over the pre-defined standard useful lives recorded in council’s asset management system for each of the asset sub-categories.
- Present service levels will remain constant for the life of the plan.
- Present levels of expenditure (and the relative distribution of planned & reactive maintenance, and capital renewals & new/upgrades) will remain constant for the life of the plan.

**7.5 Forecast Reliability and Confidence**

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale<sup>9</sup> in accordance with the table below.

<sup>8</sup> Also reported as Written Down Value, Carrying or Net Book Value.

<sup>9</sup> IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

**Table 33 - Data Confidence Grading System**

<b>Confidence Grade</b>	<b>Description</b>
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy $\pm 40\%$
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be medium confidence level.

## 8.0 PLAN IMPROVEMENT AND MONITORING

### 8.1 Status of Asset Management Practices

#### 8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data taken from the Assetic asset management system - myData and Technology One – FinanceOne.

#### 8.1.2 Asset management data sources

The source of the asset data is the Assetic asset management system, particularly the myData platform. Outputs from myData on opening and closing balances, depreciation and capitalisation/disposal are used in the development of financial statements.

### 8.2 Improvement Plan

This section shows the overall strategic improvement plan for the Asset Management Framework and specific improvements associated with this Plan.

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan are shown below.

**Table 34 – Strategic Asset Management Improvement Plan**

Themes	Purpose	Current Status March 2022
Establish Program Governance and Management	Establish a program governance/ management structure and project implementation team so that roles and responsibilities for the improvement program are clearly understood by stakeholders.	Council has created two newly separate Directorates to support the implementation of this Improvement Program.
Carryover Tasks – from Dec 2019 review	Continuation of incomplete tasks from the 2019 review scope of works, to set the foundation for remaining improvements.	The Projects & Strategy Directorate is accountable for the Strategic Management Systems of Assets.
Asset Management System	Review / update / development of an asset management Strategy, Plans, Processes, Procedures and associated decision logic to support the asset management objectives and strategic intent in the WWCC Asset Management Policy.	Clear documentation of accountabilities strategic, long term and daily asset activities.
Asset Management Technology	Implementation of short-term and long-term information system solutions to support improved asset management.	Review and improve the integration between FinanceOne, Assetic MyData, ESRI ArcInfo and supporting reports from disparate sources across Council including Request Management System, daily cleaner and security reports and so on.
Asset Management Capability	Upskilling the organisation so that WWCC staff have the capability to plan implement and monitor whole of life asset management.	Regional and Rural Councils are challenged to recruit ongoing adequately skilled Engineers and Project Managers to implement this Improvement Program. Innovative means to attract suitably skilled resources and/or other models to deliver this ongoing program must be considered.

**Table 35 - Asset Specific Improvement Plan**

Task	Task	Responsibility*	Resources Required
1	Capture function and utilisation data for transport assets.	Manager Technical and Strategy	Staff time
2	Model for longer term renewals.	Manager Technical and Strategy	Staff time and modelling software
3	Develop a planned maintenance program for the road network and identified resources required.	Manager Technical and Strategy	Staff time
4	Develop solutions to remediate pavement segments identified.	Manager Technical and Strategy	Staff time
5	Develop a risk treatment plan for transport assets including costs.	Manager Technical and Strategy	Staff time
6	Examine demand drivers and identify the impact on transport assets.	Manager City Strategy	Planning documents
7	Develop 20 year plans for transport assets.	Manager Operations	Staff time
8	Document the renewal ranking criteria for transport assets.	Manager Operations	Staff time
9	Document the ranking criteria for new transport assets.	Manager Technical and Strategy	Staff time
10	Review risk assessments and identify individual assets criticality.	Manager Technical and Strategy	Staff time
11	Develop delivery program for condition rating, including costs.	Manager Technical and Strategy	Staff time
12	Develop a renewal plan for sealed road pavement based on segment data rather than modelling outcomes.	Manager Technical and Strategy	Staff time

*\*Positions and accountabilities may change from time to time with business structural changes.*

### 8.3 Monitoring and Review Procedures

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, and acquisition costs and planned budgets. These forecast costs and proposed budgets are then considered as part of the annual review of Councils Long Term Financial Plan.

The AM Plan has a maximum life of 4 years and is due for complete revision and update within 9 months of each Council election.

### 8.4 Performance Measures

The effectiveness of this AM Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

## 9.0 REFERENCES

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## 10.0 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