Good Government

ROADS ASSET MANAGEMENT PLAN 2016—2026

18 MAY 2016

MID-WESTERN REGIONAL COUNCILC

OPERATIONS: WORKS

TOWARDS 2030

Mid-Western REGIONAL COUNCIL

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5	May 2016	Update financial figure & graphs	B Tsamba		
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1. Executive Summary

1.1 Context

Mid-Western Regional Council (Council) covers an area of over 9,000km² and includes the historic towns of Gulgong, Kandos, Mudgee and Rylstone, and many rural villages. The region stretches from the Wollemi National Park in the east to Lake Burrendong in the west, and from the Goulburn National Park in the north to the Macquarie and Turon Rivers in the south.

The total population of the Mid-Western region exceeds 23,000 with a median age of 41. The primary industries are agricultural and mining, with continual growth of the tourism industry bringing approximately 500,000 visitors to the region each year. All industry, tourist and local transport needs are dependent on road infrastructure.

The opening of new mines and existing mine expansions are expected to result in an increase in population and a corresponding increase in demand for support infrastructure. In Council's Towards 2030 Community Plan, Council aims to address this growth by looking after the community, protecting our natural environment, building a strong local economy, connecting the region and providing good governance.

Council provides a roads network in partnership with State Government and the community to enable safe, well maintained, fit-for-purpose community access in accordance with Council's service delivery objectives.

The Transportation Infrastructure Service

The roads network (and associated transportation infrastructure) comprises:

- 209 km of state highways
- 992 km of sealed local and regional roads
- 1,255 km of unsealed local and regional roads
- 12 roundabouts
- 94 bridges
- 75 bridge sized culverts
- 395 causeways
- 184 km of kerb and gutter
- 57 km of footpaths
- 17 km of shared use pathways
- 52,839 m² of carparks

These assets (including road furniture) have a current replacement cost of $468,611,314 (30 June 2015). It is important to note that State owned infrastructure is excluded from this plan.

1.2 What does it cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (asset management plan) including operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is $152.2M or $15.2M on average per year (refer to Table 1-1).

Estimated available funding for this period is $159.8M or $16M on average per year which is 105% of the cost to provide the roads service. This is a funding surplus of $755k on average per year. The surplus is driven by grant funding in years 1-4 well above anticipated continued funding levels. Grand funding is mostly for Wollar Road Seal extension and Ulan Road. However, the average anticipated funding available for years 5-10 is 77%, or a shortfall of $3.4M per year (refer to Table 1-2). This deficit is more reflective of the long term funding shortfall on Council's road network.

TABLE 1-1: 10 YEAR PROJECTED AND BUDGET EXPENDITURE '000

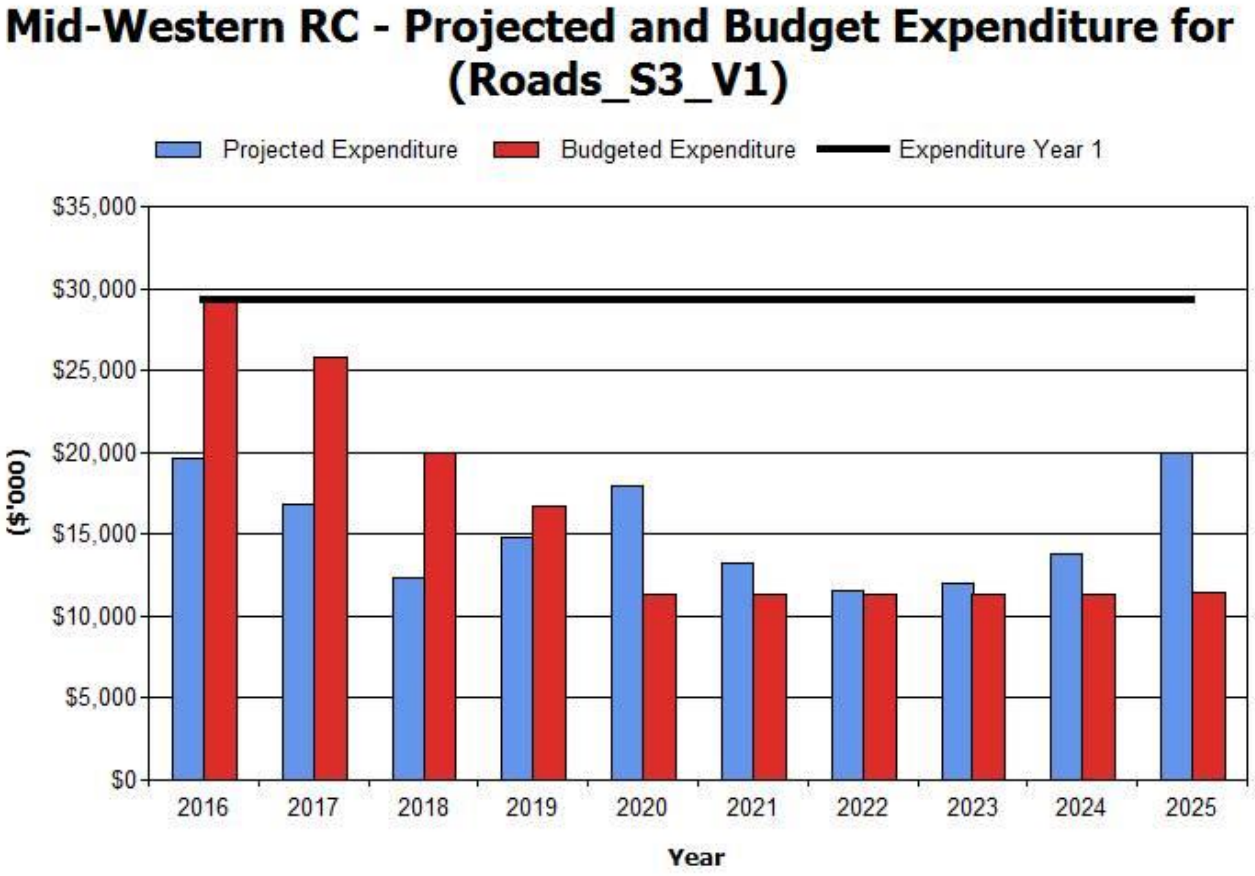
WHAT DOES IT COST?	($000)
10 year total cost (Projected Expenditure for Operation, Maintenance, Renewal and Upgrade)	$152,243
Average cost per year	$15,224
10 year total budget (LTFP Budget for Operation, Maintenance, Renewal and Upgrade)	$159,797
10 year average budget	$15,980
10 year average funding surplus	$755
10 year financial indicator	105%

TABLE 1-2: ANNUAL PROJECTED AND BUDGET EXPENDITURE '000

YEAR	PROJECTED EXPENDITURE	LTFP BUDGET	AM Financial Indicator	COMMENT
2015/16	$19,653	$29,311	149%	
2016/17	$16,823	$25,802	153%	LTFP Budget includes grant for Wollar Rd and Ulan Rd.
2017/18	$12,315	$19,959	162%	
2018/19	$14,776	$16,744	113%	
Subtotal	**$63,567**	**$91,816**	**144%**	Surplus of $28.2M or $7M per year
2019/20	$17,965	$11,309	63%	
2020/21	$13,290	$11,281	85%	
2021/22	$11,568	$11,307	98%	Excludes amount for Ulan Rd from LTFP Budget.
2022/23	$12,043	$11,334	94%	
2023/24	$13,831	$11,362	82%	
2024/25	$19,976	$11,391	57%	
Subtotal	**$88,673**	**$67,982**	**77%**	Gap of $20.7M or $3.4M per year
TOTAL	**$152,240**	**$159,797**	**105%**	Surplus of $7.5M or $755 thousand per year

The projected expenditure required to provide services in the asset management plan compared with planned expenditure currently included in the Long Term Financial Plan are shown in Figure 1-1.

FIGURE 1-1:



1.3 What we will do

We plan to provide the following roads services:

- Operation, maintenance, renewal and upgrade of local and regional sealed and unsealed roads, bridges, causeways, kerb and gutter, pathways, carparks and roundabouts to meet service levels set by Council in annual budgets
- Continue vigorous pursuit of State Government grants for roads and related assets, particularly pathways
- Plan asset rehabilitations to ensure that the highest priority assets are targeted for renewal each financial year. Prioritisation must be based on risk factors including asset condition, age, classification, and serviceability
- Consider reducing current expenditure by determining whether any maintained roads should be added to the unmaintained register (Council does not maintain roads servicing less than five properties)
- Consider reducing current expenditure by reverting low volume sealed roads back to unsealed roads

1.4 What we cannot do

The community has an expectation that the level-of-service provided for roads and associated assets will continue to be improved into the future. Council's present funding levels for roads, particularly unsealed roads, is insufficient to meet desired level-of-service parameters based on life-cycle cost. This conclusion is resonated in the community, with roads being voted as the top priority for future Council spending during Council's recent "Towards 2030 Community Plan" public consultation period. This is a strong indicator that the community are not satisfied with the current level-of-service for roads provided by Council.

Furthermore, this situation is expected to intensify in the near future due to strong projected growth statistics for the Council LGA. Population growth will lead to increased vehicle trips, increased heavy vehicle trips and new subdivisions that feature new developer-funded roads and pathways assets to be handed over to Council to maintain and replace in the future.

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

- 6-month grading on unsealed roads
- Increased grading frequency on any unsealed roads (refer to Appendix A schedule)
- Extension of the existing maintained network to include roads currently listed as un-maintained
- Extension of the sealed road network, with the exception of Wollar Road which is being externally funded

1.5 Managing the risks

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

- Increased accidents resulting from cars not driving to the condition of unsealed roads, particularly those that have been adversely affected by excessive rain
- Asset failures due to gap in funding available to replace all poor condition assets
- Damage to bridges resulting from loadings higher than they were designed to carry (bridge loadings have not been formerly assessed)

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

- objectively classifying each asset based on current conditions and safety factors, so that those assets most in need of renewal can be prioritised
- educating road users so that they understand that they must drive to the condition of unsealed roads (regardless of the posted maximum speed limit), particularly with regards to adverse weather conditions
- Undertaking assessments on all bridges to ensure they are able to meet current loading requirements, otherwise load restrictions or bridge diversions / replacements will be required

1.6 Confidence Levels

This asset management plan is based on medium level of confidence information.

1.7 The Next Steps

The actions resulting from this asset management plan are:

- Engage the community on service delivery and funding issues raised in this plan
- Seek additional funding for roads and pathways programs
- Ensure all developer-funded roads and pathways in new subdivisions have been constructed correctly to meet design-life targets, and to correct widths, prior to Council hand-over
- Integration with Council's Long Term Financial Management Plan
- Integration with Council's Annual Business Plan
- Development of an Infrastructure Risk Management Plan
- Review service levels based on community consultation and determine financial implications
- Develop rigorous and standardised inspection programs, recording and prioritisation methods, as a better means of determining level-of-service
- Periodic review of the plan every five years

Questions you may have

WHAT IS THIS PLAN ABOUT?

This asset management plan covers the infrastructure assets that serve the community's road needs. These assets include sealed roads, unsealed roads, bridges, causeways, kerb and gutter, pathways, carparks and roundabouts throughout the community area that enable people to use the transportation network for their personal or business needs.

WHAT IS AN ASSET MANAGEMENT PLAN?

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

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

WHY IS THERE A FUNDING SHORTFALL?

While there is an initial surplus due to external funding for Wollar Road and Ulan Road works, a funding shortfall existing from years 5-10 which is more reflective of roads infrastructure funding levels.

Most of the Council's roads network was constructed by developers and from government grants, often provided and accepted without consideration of ongoing operations, maintenance and replacement needs.

Many of these assets are approaching the later years of their life and require replacement, services from the assets are decreasing and maintenance costs are increasing.

Our present funding levels are insufficient to continue to provide existing services at current levels in the medium term.

WHAT OPTIONS DO WE HAVE?

Resolving the future funding shortfall involves several steps:

1. Improving asset knowledge so that data accurately records the asset inventory, how assets are performing and when assets are not able to provide the required service levels
2. Improving our efficiency in operating, maintaining, renewing and replacing existing assets to optimise life cycle costs
3. Identifying and managing risks associated with providing services from infrastructure
4. Making trade-offs between service levels and costs to ensure that the community receives the best return from infrastructure
5. Identifying assets surplus to needs for disposal to make saving in future operations and maintenance costs

6. Consulting with the community to ensure that roads services and costs meet community needs and are affordable

7. Developing partnership with other bodies, where available, to provide services

8. Seeking additional funding from governments and other bodies to better reflect a 'whole of government' funding approach to infrastructure services

WHAT HAPPENS IF WE DON'T MANAGE THE SHORTFALL?

It is likely that we will have to reduce service levels in some areas, unless new sources of revenue are found. For roads, the service level reduction may compromise ride quality, and result in people needing to drive to the road conditions rather than the posted maximum speed limit.

WHAT CAN WE DO?

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

WHAT CAN YOU DO?

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

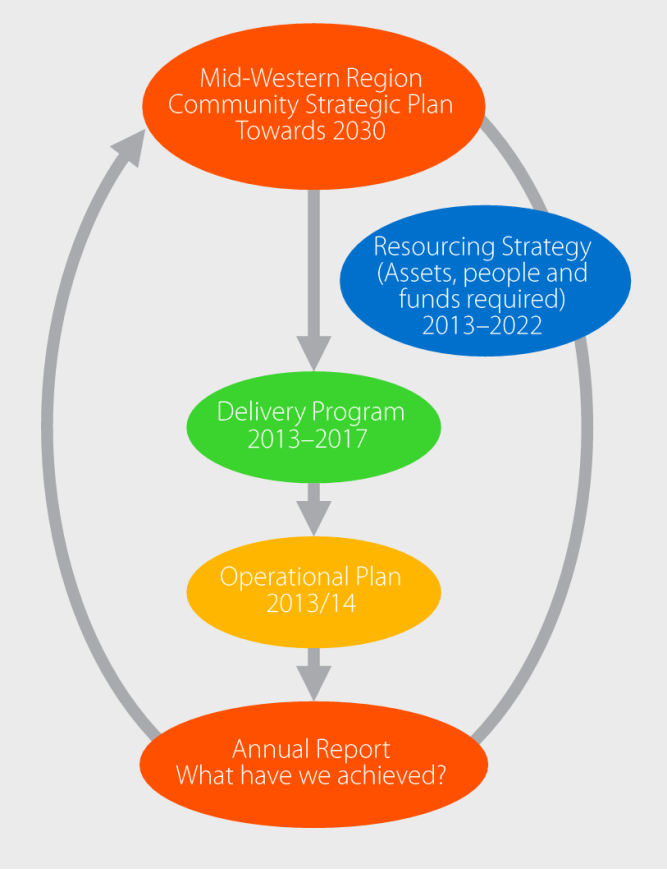
2. Introduction

2.1 Background

Council provides services to the community and the majority of these services are provided through infrastructure assets. This asset management plan demonstrates responsive management of assets (and services provided from assets), compliance with regulatory requirements, and communicates the funding needed to provide the required levels-of-service over a 10 year planning period.

The asset management plan follows the format for asset management plans recommended in Section 4.2.6 of the International Infrastructure Management Manual[1]. It meets the requirements of the integrated Planning and Reporting (IPR) framework which requires Council to develop 10 year programs of maintenance and capital works to enable ongoing delivery of agreed levels-of-service from these assets (see Figure 2-1).

FIGURE 2-1: LOCAL GOVERNMENT PLANNING AND REPORTING FRAMEWORK (ADOPTED FROM IPR MANUAL, 2013)



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

The asset management plan is to be read with Council's Asset Management Policy, Asset Management Strategy and the following associated planning documents:

- Mid-Western Region Towards 2030 Community Plan
- Long Term Financial Plan (2012/13 - 2021/22)
- Asset Management Strategy 2012/13 - 2021/22
- Delivery Program 2012-2016
- Operational Plan 2012/2013
- Advice to Residents on Roadworks Policy - adopted 06.06.2013
- Asset Management Policy - adopted 20.06.2012
- Bitumen Sealing of Gravel Roads Policy - adopted 18.08.2010
- Bus Shelters Policy - adopted 18.08.2010
- Construction of New Pathways Policy - adopted 06.06.2013
- Disposal of Assets Policy - adopted 20.03.2013
- Grazing of Stock on Roads Policy - adopted 06.06.2013
- Grids and Gates Policy - adopted 15.12.2010
- Gutter Bridges Policy - adopted 06.06.2013
- Kerbing, Guttering and Footpaths Charges Policy - adopted 06.06.2013
- Permanent Road Closures Policy - adopted 06.06.2013
- Public Seating on Footpaths Policy - adopted 06.06.2013
- Regulatory and Warning Signage Policy - adopted 06.06.2013
- Risk Management Policy - adopted 01.05.2013
- Road Encroachments on Private Land Policy - adopted 06.06.2013
- Road Naming Policy - adopted 24.07.2013
- Sign Inspection and Replacement Policy - adopted 06.06.2013
- Temporary Road Closures Policy - adopted 06.06.2013
- Unmaintained and Unformed Roads Policy - adopted 16.02.2011

The infrastructure assets covered by this asset management plan are shown in Table 2-1. These assets are used to provide transportation services to the community.

TABLE 2-1: ASSETS COVERED BY THIS PLAN ('000), AT 30 JUNE 2015

ASSET CATEGORY	DIMENSION	REPLACEMENT VALUE '000
Local Sealed Roads	678 km	$155,517
Local Unsealed Roads	1,239 km	$72,892
RMS Regional Roads	331 km	$91,245
Airport Runway	71,739 m²	$2,100
Bridges	169	$102,662
Pathways	74 km	$7,920
Roundabouts	12	$309
Kerb and Gutter	184 km	$18,503
Road Furniture	NA	$3,799
Parking Areas	52,839 m²	$1,189
Causeways	395	$10,232
Guardrails	14 km	$2,242
TOTAL		**$468,611**

Key stakeholders in the preparation and implementation of this asset management plan are shown in Table 2-2.

TABLE 2-2: KEY STAKEHOLDERS IN THE ASSET MANAGEMENT PLAN

KEY STAKEHOLDER	ROLE IN ASSET MANAGEMENT PLAN
Council	Represent needs of community/shareholders Allocate resources to meet Council's objectives in providing services while managing risks Ensure organisation is financial sustainable
Community	Provide feedback on levels-of-service
Developer	Responsible for providing developer contributed assets of an appropriate standard
Emergency services	Responsible for responding when assets have not performed and there is risk to life or property
Insurers	Need to assess risk, affected when assets fail
Utility Owners	Responsible for providing essential services

Our current organisational structure is shown in Figure 2-2.

FIGURE 2-2: ORGANISATIONAL STRUCTURE

2.2 Goals and Objectives of Asset Management

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

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

- Providing a defined level-of-service and monitoring performance
- Managing the impact of growth through demand management and infrastructure investment
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level-of-service

- Identifying, assessing and appropriately controlling risks
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed[2]

2.3 Plan Framework

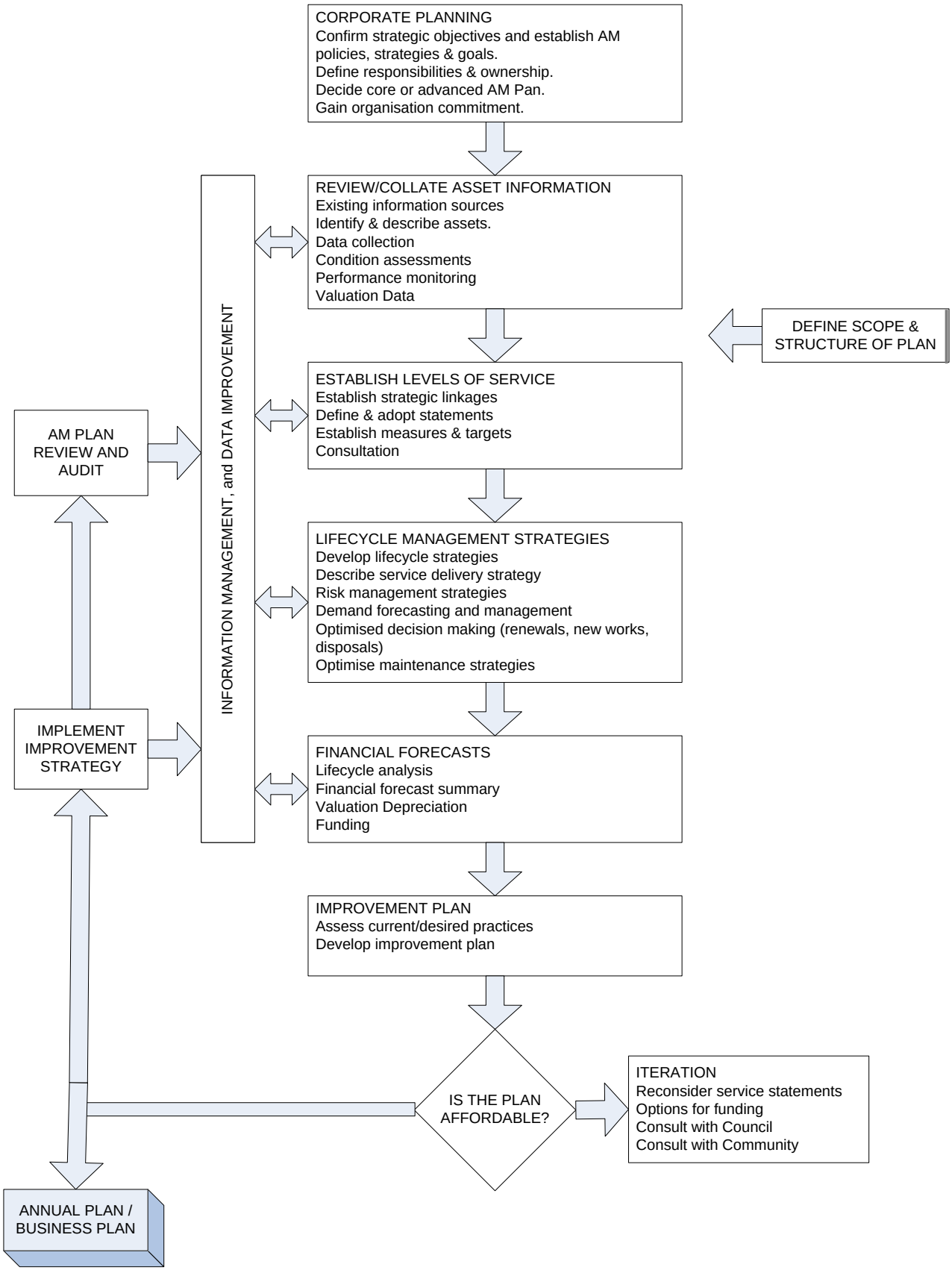
Key elements of the plan are

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

A road map for preparing an asset management plan is shown below in Figure 2-3.

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

FIGURE 2-3: ROAD MAP FOR PREPARING AN ASSET MANAGEMENT PLAN (*Source: IPWEA, 2006, IIMM, Fig 1.5.1, p 1.11.)*



2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 10 year planning period in accordance with the International Infrastructure Management Manual[3]. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

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

2.5 Community Consultation

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

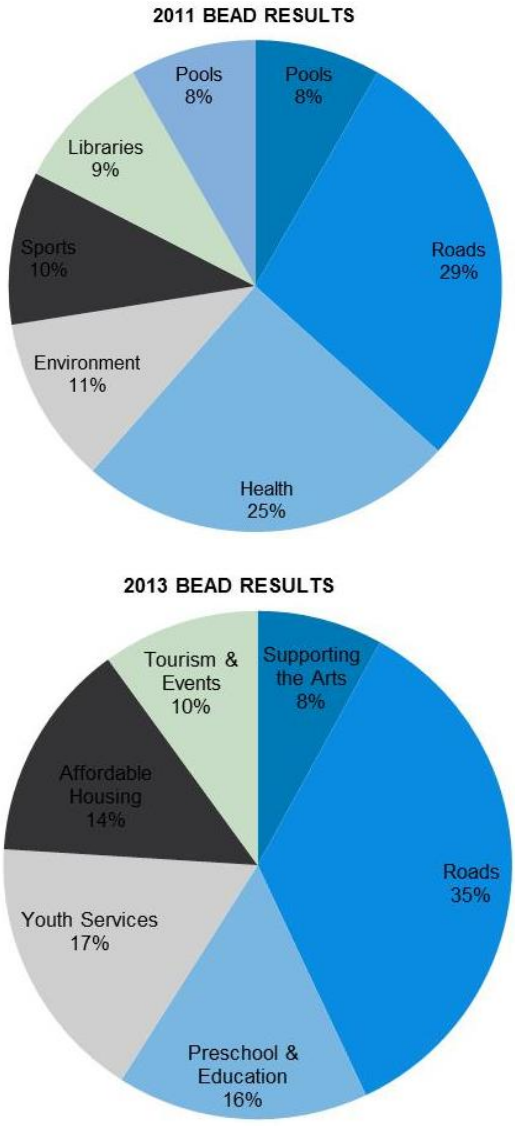
[3] IPWEA, 2011, IIMM.

3. Levels of Service

3.1 Customer Research and Expectations

As part of Council's *Towards 2030 Community Plan* consultation, Council asked the community to vote for their priorities for Council spending. This was achieved through a "bead" exercise, where participants were each given 5 beads to place across six jars to indicate their priorities for Council spending. Beads could be placed in any combination over the jars, e.g. spread across multiple jars or multiple/all in the same jar. This exercise was undertaken in both 2011 and 2013, and results are shown in Figure 3-1.

FIGURE 3-1: CUSTOMER PRIORITIES FOR FUTURE COUNCIL SPENDING

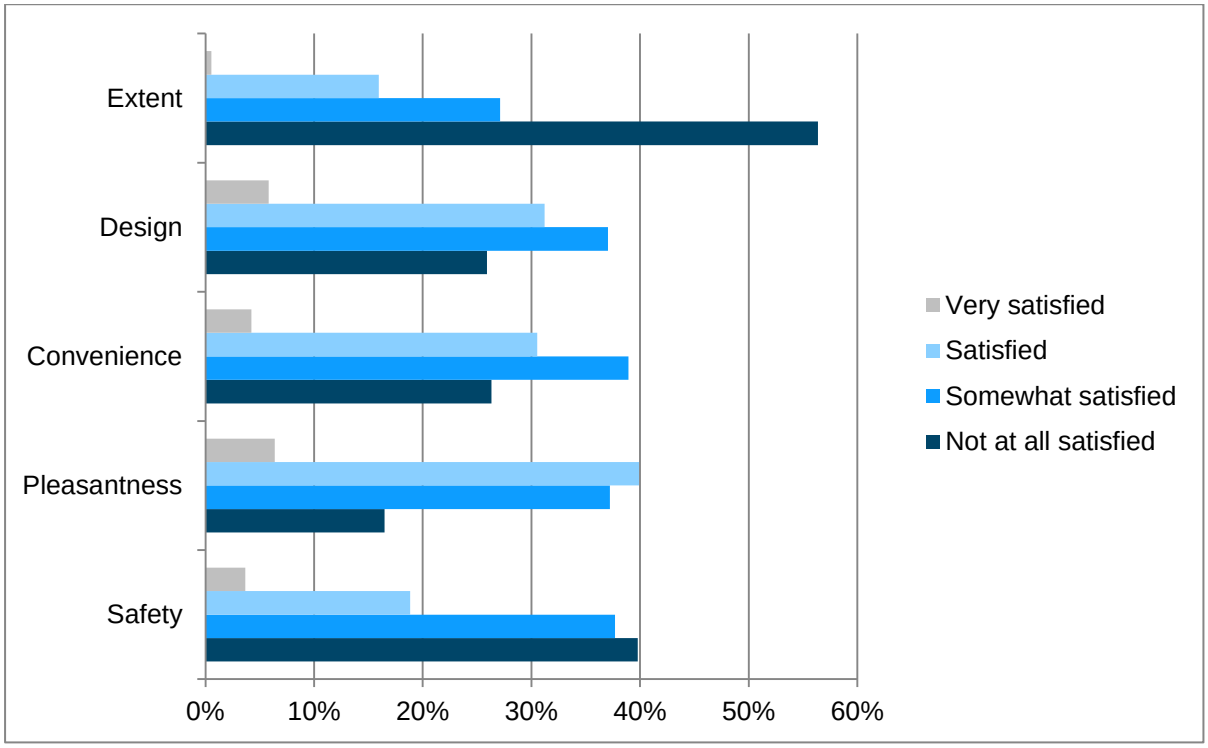


The results of this exercise highlight that increased focus on roads spending remains a priority for residents; even when compared to differing spending streams. This is a strong indicator that local residents are dissatisfied with the current level-of-service for roads provided by Council.

Community surveys undertaken during the preparation of the Pedestrian Access and Mobility Plan (2015) asked respondents to rate the extent, design, convenience, pleasantness and safety of Council pathways and footpaths as either “very satisfied”, “satisfied”, “somewhat satisfied” or “not at all satisfied”.

The results (see Figure 3-2) show that overall, residents were the least satisfied with the extent of pathways and footpaths, and the most satisfied with their pleasantness.

FIGURE 3-2: COMMUNITY SATISFACTION SURVEY LEVELS (FOOTPATHS AND PATHWAYS)



3.2 Strategic and Corporate Goals

This asset management plan was prepared under the direction of Council’s vision, goals and objectives.

Our vision is:

> “A prosperous and progressive community that we are proud to call home.”

Relevant organisational goals and objectives and how these are addressed in this asset management plan are noted in Table 3-1.

TABLE 3-1: ORGANISATIONAL GOALS AND HOW THESE ARE ADDRESSED IN THIS PLAN

GOAL	OBJECTIVE	HOW GOAL AND OBJECTIVES ARE ADDRESSED IN THE ASSET MANAGEMENT PLAN
Connecting our region	High quality road network that is safe and efficient	Identifies the way forward to provide a roads network that balances asset conditions with available resource and community needs
		Identifies the development of walking and cycling networks across the region
	Efficient connection of the region to major towns and cities	A key document in the development of a regional transport network, in partnership with RMS
Protecting our natural environment	Provide total water cycle management	Management of drainage related roads infrastructure (bridges, culverts and causeways) that manage stormwater runoff in terms of quantity and quality

Management of infrastructure risks is covered in Section 5.2.

3.3 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations (refer to Table 3-2).

TABLE 3.2: 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
Roads Act 1993	Sets out the rights for the use of public roads, confers certain road related functions on road authorities and regulates the carrying out of various activities
Environmental Planning and Assessment Act 1997	Encourages the proper management, development and conservation of natural and artificial resources, for the purpose of promoting the social and economic welfare of the community and a better environment
Protection of the Environment and Operations Act 1997 (POEO Act)	Enables the Government to set out explicit protection of the environment policies and adopt more innovative approaches to reducing pollution.
Occupational Health and Safety Act 2000	Aims to ensure the health, safety and welfare of people at work. It lays down general requirements which must be met at places of work in NSW.
Public Works and Procurement Act 1912	An Act to consolidate the Acts relating to Public Works; and to make provision in relation to the procurement of goods and services for New South Wales government agencies.
Road Improvement (Special Funding) Act 1989	An Act to make provision with respect to special funding for road improvement, road safety and road related public transport infrastructure; and for other purposes.

LEGISLATION	REQUIREMENT
Workers Compensation Act 1987	An Act to provide for the compensation and rehabilitation of workers in respect of work related injuries; to repeal the Workers' Compensation Act 1926 and certain other Acts; and for other purposes.
Civil Liability Act 2002	An Act to make provision in relation to the recovery of damages for death or personal injury caused by the fault of a person; to amend the Legal Profession Act 1987 in relation to costs in civil claims; and for other purposes.
Disability Inclusion Act 2014	An Act relating to the accessibility of mainstream services and facilities, the promotion of community inclusion and the provision of funding, support and services for people with disability; and for other purposes.
Native Vegetation Act 2003	An Act relating to the sustainable management and conservation of native vegetation; to repeal the Native Vegetation Conservation Act 1997; and for other purposes.

Management of risks is discussed in Section 5.2.

3.4 Community Levels of Service

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

Community levels-of-Service measure how the community receives the service and whether Council is providing community value.

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

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

Council's current and expected community service levels are detailed in Tables 3-3 and 3-4. Table 3-3 shows the agreed expected community levels of service based on resource levels in the current long-term financial plan and community consultation/engagement.

TABLE 3-3: COMMUNITY LEVEL-OF-SERVICE

SERVICE ATTRIBUTE	SERVICE OBJECTIVE	PERFORMANCE MEASURE PROCESS	CURRENT PERFORMANCE	EXPECTED POSITION IN 10 YEARS[1]
COMMUNITY OUTCOMES				
A community that feels that they have equitable access to the provision of infrastructure and services that meets their needs				
COMMUNITY LEVELS OF SERVICE				
Quality	Road service meets user requirements	Total number of customer service requests (minus those not related to roads service[1])	628	<628pa, reducing by 5% annually
	Rideability	Customer service requests relating to issues affecting rideability including grading/ resheeting requests, reseal requests, patching and potholing requests	343	<300pa
Function	Road network provided is fit for purpose	Customer service requests relating to design issues (e.g. road width) or requests for new assets (e.g. new kerb and gutter or overtaking lanes)	23	<20pa
	Associated drainage infrastructure has suitable hydraulic capacity and provides clear flow of water away from the pavement	Customer service requests related to poor / blocked drainage or damaged drainage	45	<40pa
Accessibility	Continuous access available at all reasonable times, except during unforeseen incidents	Customer service requests relating to road or driveway inaccessibility	15	<10pa
Safety	Safety of road network is maintained and improved	Number of injury accidents, not attributed to driver factors or animals[2]	45	<45pa
	Maintain roadside corridors to minimise sight distance hazards	Customer service requests relating to visual obstructions and roadside maintenance	43	<40pa

SERVICE ATTRIBUTE	SERVICE OBJECTIVE	PERFORMANCE MEASURE PROCESS	CURRENT PERFORMANCE	EXPECTED POSITION IN 10 YEARS[1]
	Road surface is free from hazards	Customer service requests relating to loose gravel, slippery surface and tar issues	32	<20pa
	Provide clear signage, delineation and guard rail	Customer service requests relating to signage, delineation, guide posts and guard rails	26	<25pa
	Provide adequate street lighting	Customer service requests relating to street lighting	5	<5pa

Note: [1]Based on current LTFP

3.5 Technical Levels of Service

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

Technical service measures are linked to annual budgets covering:

- **Operations** – the regular activities to provide services such as opening hours, cleansing, mowing grass, energy, inspections, etc
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition (e.g. road patching, unsealed road grading, building and structure repairs)
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally (e.g. frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement)
- **Upgrade** – the activities to provide a higher level-of-service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library)

Service and asset managers plan, implement and control technical service levels to influence the customer service levels.[4]

Table 3-4 shows the technical level-of-service expected to be provided under this asset management plan. The agreed sustainable position in the table documents the position agreed by the Council following community consultation and trade-off of service levels performance, costs and risk within resources available in the long-term financial plan.

[4] IPWEA, 2011, IIMM, p 2.22

TABLE 3-4: TECHNICAL LEVELS OF SERVICE

SERVICE ATTRIBUTE	SERVICE OBJECTIVE	ACTIVITY MEASURE PROCESS	CURRENT PERFORMANCE *	DESIRED FOR OPTIMUM LIFECYCLE COST **	AGREED SUSTAINABLE POSITION ***
TECHNICAL LEVELS OF SERVICE					
Maintenance	Gravel road grading	% of roads graded	75% within level-of-service grading schedule (see Appendix A)	100%	85%
	Routine inspections of all classes of roads	Roads are inspected within time parameters	Inspection frequency as per schedule in Table 5-3	Refer to schedule in Table 5-3	Refer to schedule in Table 5-3
Renewal	Renew assets within useful life parameters	Percentage of total asset area/length meeting design life parameters	98% - sealed road seals 99.5 % - sealed road pavements 100% - pathways 99% - causeways 97.2% - kerb & gutter 94% - carpark seal 100% - carpark pavement	100%	85%
	Renew unserviceable assets	Percentage of roads with a condition rating of 5 (unserviceable)	0.7% - sealed local roads 0.3% - sealed regional roads 0.5% - bridges 0.2% - pathways 9% - causeways 1% - kerb & gutter 0% carparks	0% of assets with a condition rating of 5	Less than 5% of assets with a condition rating of 5
Accessibility	Provide pram ramps at CBD intersections	No of pram ramps at CBD intersections	Pedestrian Access Mobility Plan has noted all missing pram ramps on the network and these are being updated based on priority	100% of CBD intersections have pram ramps	85% of CBD intersections have pram ramps

SERVICE ATTRIBUTE	SERVICE OBJECTIVE	ACTIVITY MEASURE PROCESS	CURRENT PERFORMANCE *	DESIRED FOR OPTIMUM LIFECYCLE COST **	AGREED SUSTAINABLE POSITION ***
Safety	Sealed approaches, depth markers and low flow pipework for causeways	Number of compliant causeways	112 low flow 94 depth markers	436 (all causeways)	When causeways require replacement they are to be brought up to standard. Program to be implemented to seal all approaches on unsealed roads within 5 years.
	Provide clear safety signage	Percentage of missing / damaged signs	Not measured	No signs with defects or missing	Replace missing signs or signs with defects within 1 week of identification

Note: * Current activities and costs (currently funded).
** Desired activities and costs to sustain current service levels and achieve minimum life cycle costs (not currently funded).
*** Activities and costs communicated and agreed with the community as being sustainable (funded position following trade-offs, managing risks and delivering agreed service levels).

4. Future Demand

4.1 Demand Drivers

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

4.2 Demand Forecast

The present position and projections for demand drivers that may impact future service delivery and utilisation of assets are documented in Table 4-1.

TABLE 4-1: DEMAND DRIVERS, PROJECTIONS AND IMPACT ON SERVICES

DEMAND DRIVERS	PRESENT POSITION	PROJECTION	IMPACT ON SERVICES
Population growth	23,000 (2011)	25,050 (2031)	Additional road traffic results in increased maintenance costs and decreased design life, along with demand for additional roads related infrastructure
			Population increases, combined with above average percentages of children 0-18 years and elderly residents (over 65 year olds) will increase demand for pathways, particularly shared-use paths that are mobility scooter compatible.
			Increased car traffic will reduce the safety of on-road cycling and walking, further increasing demand for additional pathways and traffic calming measures.
			Increased population will increase demand for car parking spaces, particularly within town CBD areas
			Associated future subdivision development will result in additional new assets being handed over to Council from developers
Global change towards more sustainable living	69km of pathways	Increased pathways	Additional demand for pathways and cycleways is likely to be generated through increased acceptance of the environmental, financial, health and social benefits to walking and cycling.

4.3 Demand Impact on Assets

The impact of demand drivers that may affect future service delivery and utilisation of assets are shown in Table 4-1.

4.4 Demand Management Plan

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

Non-asset solutions focus on providing the required service without the need for Council to own the assets and management actions including reducing demand for the service, reducing the level-of-service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures[5]. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

Opportunities identified to date for demand management are shown in Table 4-2. Further opportunities will be developed in future revisions of this asset management plan.

TABLE 4-2: DEMAND MANAGEMENT PLAN SUMMARY

DEMAND DRIVER	IMPACT ON SERVICES	DEMAND MANAGEMENT PLAN
Population growth	Increased car and heavy vehicle movements	Increased population will result in increased rates. Continue to source non-Council funding e.g. from mining companies or State/Federal Governments to reduce the impact of associated road infrastructure costs on local rate payers.
	Increased pedestrian and cyclist movements associated with increased population	Continue to source non-Council funding to reduce the impact of associated pathways infrastructure costs on local rate payers.
Sustainable living	Increased demand for infrastructure supporting green modes of transportation	Council to adapt to global changes towards sustainable living, and continuing to pursue funding grants for additional pathways infrastructure

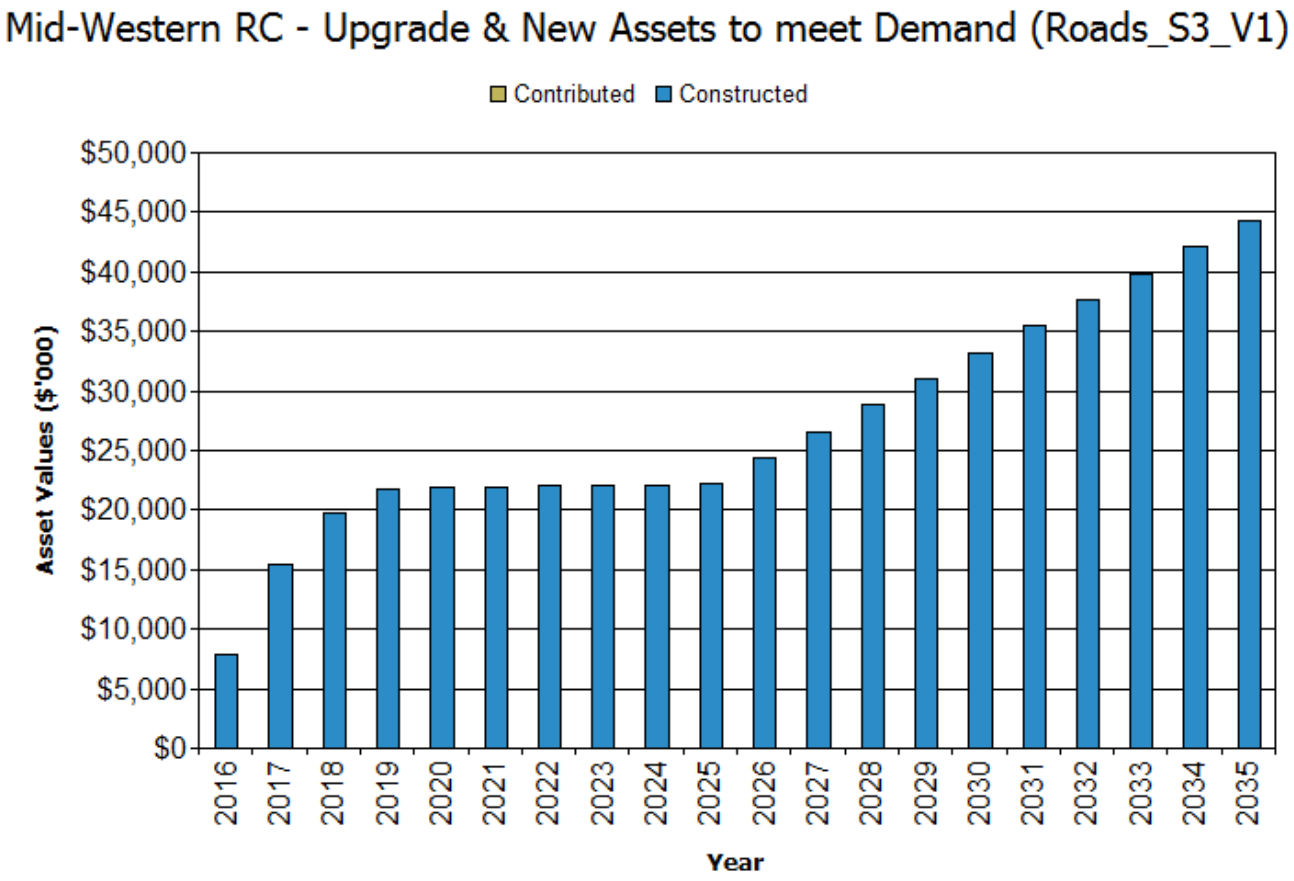
5 IPWEA, 2011, IIMM, Table 3.4.1, p 3|58.

4.5 Asset Programs to meet Demand

The new assets required to meet growth will be acquired free of cost from land developments and constructed/acquired by Council. New assets constructed/acquired by Council are discussed in Section 5.5. The cumulative value of new contributed and constructed asset values are summarised in Figure 4-1.

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

FIGURE 4-1:



5. Lifecycle Management Plan

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

5.1 Background Data

5.1.1 Asset Life Expectancy and Replacement Costs

The assets covered by this asset management plan, and their associated design life parameters and replacement costs are shown in Table 5-1. The parameters outlined in Table 5-1 have been used in the annualised life-cycle cost estimations of roads assets in Chapter 6.

TABLE 5-1: LIFECYCLE COST PARAMETERS

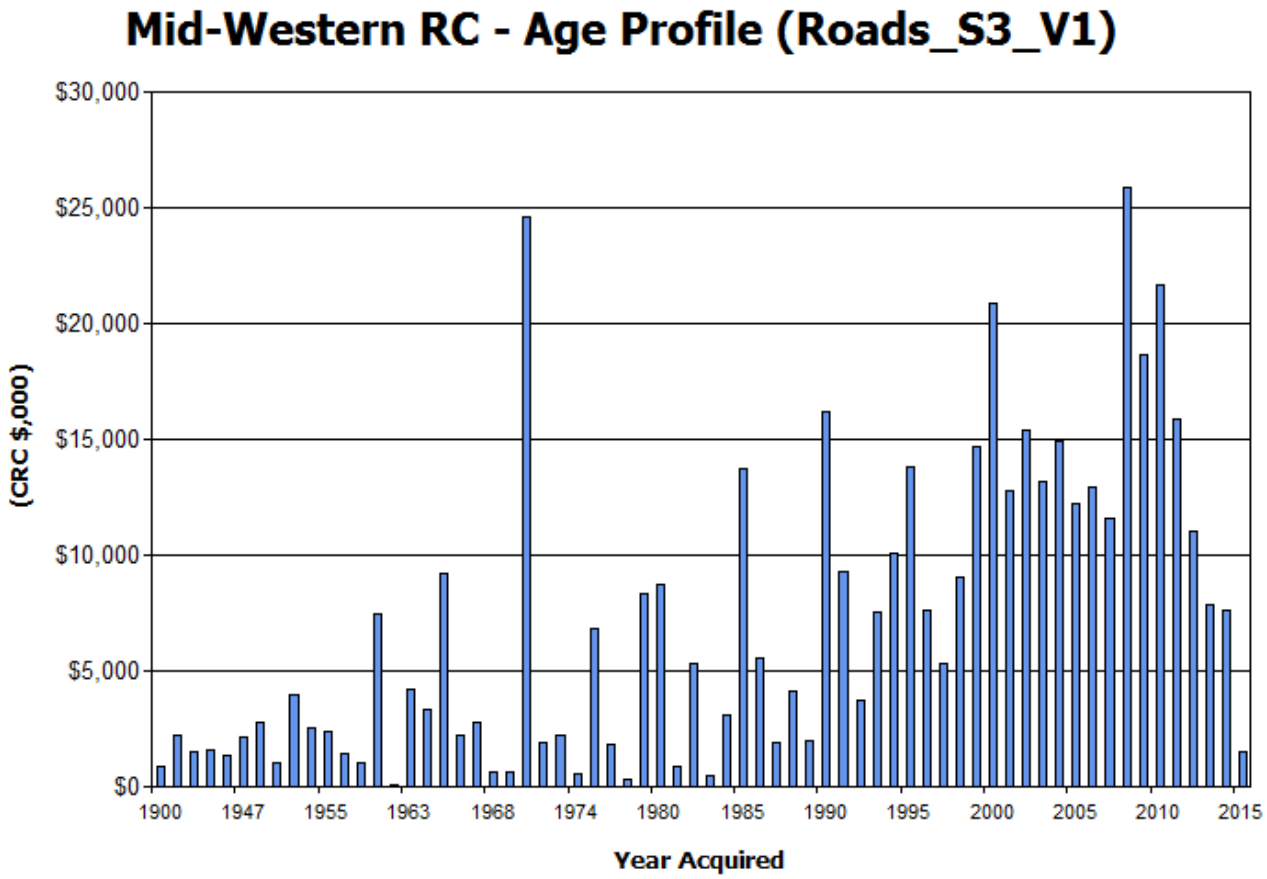
ASSET	UNITS	2015 UNIT RATE ($)	LIFE EXPECTANCY (yrs)
Airport			
Earthworks	m²	$16.18	
Pavement under seal	m²	$21.64	65
Seal	m²	$7.61	12
Bridges			
Concrete box culvert	m²	$2,921.75	80
Concrete	m²	$3,868.60	100
Two tier box culvert	m²	$8,701.46	80
Concrete pipe culver	m²	$850.27	80
Steel	m²	$4,260.00	100
Timber	m²	$4,165.41	80
Carparks			
Earthwork	m²	$16.18	
Pavement unsealed	m²	$5.30	8
Pavement under seal	m²	$13.23	85
Seal - bitumen	m²	$7.61	19
Seal - asphalt	m²	$34.79	25
Causeways			
Roadbase 150mm	m²	$0.00	80
Concrete 150mm	m²	$134.00	80
Kerb & Gutter			
Standard style	m	$78.00	60
Heritage style	m	$854.44	60

ASSET	UNITS	2015 UNIT RATE ($)	LIFE EXPECTANCY (yrs)
Stormwater			
Pipes	m		120
Grated Kerb Inlet 1800mm	m	$2,270.70	120
Pit with headwall	m	$5,090.84	120
Junction Pit	m	$1,250.70	120
Surface Inlet Pit 1800	m	$1,673.70	120
Grate only	m	$610.00	120
Open drains - concrete (typical)	m	$390.00	120
Open drains - grass (typical)	m	$70.80	120
Gross pollutant traps	m		120
Pathways			
Standard bitumen	m²	$22.00	60
Standard concrete	m²	$70.85	75
Standard gravel	m²	$16.00	60
Standard 7mm gravel	m²	$22.00	60
Heritage pavers	m²	$104.00	60
Heritage stone & concrete aggregate	m²	$156.00	60
Roads			
Earthworks			
Local roads earthwork	m²	$16.18	
Regional roads earthwork	m²	$16.18	
Unsealed Road Reseals			
Unsealed road pavement < 15km	m²	$5.30	
Unsealed road pavement > 15km	m²	$5.30	
Collector - Local Non-urban (LNUU)			9
Collector - Regional Non-urban (RNUU)			9
Local Urban (LUR)			17
Main Local (LNUU)			14
Minor Local (LNUU)			25
Life reduced to for unsealed steep inclines			60%

ASSET	UNITS	2015 UNIT RATE ($)	LIFE EXPECTANCY (yrs)
Sealed Road Rehabilitation			
Sealed road pavement < 15km	m²	$19.54	
Sealed road pavement > 15km	m²	$21.69	
Local Sealed Pavement (150mm)	m²	$13.23	
Regional Sealed Pavement (300mm)	m²	$21.64	
Urban Pavement	m²	$28.92	
Collector - Regional Non-urban (RNUS)			75
Sub-Arterial (RNUS)			75
Regional Urban (RUS)			85
Local Urban (LUR)			85
Villages Urban (LUR)			130
Local Sub-Arterial (LNUS)			75
Local Collector (LNUS)			75
Main Local (LNUS)			75
Minor Local (LNUS)			75
Sealed Road Reseals			
Sealed road BITUMEN seal - Regional	m²	$7.61	19
Sealed road BITUMEN seal - Urban	m²	$7.61	21
Sealed road BITUMEN seal - Local	m²	$7.61	19
Sealed road ASPHALT 50mm seal - Regional	m²	$34.79	25
Road Ancillaries			
Signs & guideposts CBD road	km	$20,609; $0	10
Signs & guideposts Collector	km	$1,671; $1,003	10
Signs & guideposts Collector Urban	km	$4,567; $0	10
Signs & guideposts Local Urban	km	$2,061; $0	10
Signs & guideposts Main Local	km	$1,448; $1,003	10
Signs & guideposts Main Local unsealed	km	$290; $245	10
Signs & guideposts Minor Local	km	$1,448; $1,003	10
Signs & guideposts Minor Local unsealed	km	$245; $156	10
Signs & guideposts Regional	km	$3,398; $1,003	10
Signs & guideposts Sub-Arterial	km	$2,562; $1,003	10
Roundabouts			
Roundabout concrete	m³	$650.00	75

The age profile of the assets include in this asset management plan is shown in Figure 5-1. The spikes located every ten years (e.g. 1960, 1970, etc) are due to estimations of asset construction dates for older assets. For example, they would put in an approximate figure of 1970 rather than 1972, say, if unsure about the exact construction date for an asset. The true age profile would show a more even trend-line.

FIGURE 5-1:



Plans showing roads and related infrastructure include the following GIS layers:

- Road centrelines
- Road reserve
- Road segments
- Bridge locations
- Causeways locations
- Approved water extraction points for use in roads maintenance / construction
- Crash locations (from annual RMS data)
- Streetlight locations
- River crossing points
- Location of gravel quarries

The road segment layers are available in numerous formats to assist Council staff including maintained/unmaintained roads layer, sealed/unsealed roads layer, grading schedules layer and road classification layers.

In addition to GIS mapping, work-as-executed developer plans show roads related infrastructure in new subdivisions (of limited accuracy).

5.1.2 Asset capacity and performance

Council's services are generally provided to meet design standards where these are available.

Locations where deficiencies in service performance are known are detailed in Table 5-2.

TABLE 5-2: KNOWN SERVICE PERFORMANCE DEFICIENCIES

ASSET TYPE	ASSET	LOCATION
Sealed Local Roads[1]	Angus Ave seg 10	Kandos
	Angus Ave seg 30	Kandos
	Anzac Ave seg 10	Kandos
	Anzac Ave seg 20	Kandos
	Browne St seg 10	Windeyer
	Cairo St seg 10	Kandos
	Cooyal St seg 10	Gulgong
	Crowleys Ln seg 10	Budgee Budgee
	Farrelly St seg 10	Clandulla
	Hall St seg 10	Rylstone
	Louee St (Part BVW) seg 60	Rylstone
	Narrango Rd seg 60	Dabee
	Old Barneys Reef Rd seg 20	Gulgong
	Springwood Park Rd seg 20	Cope
	Tucklan Rd seg 10	Tallawang
	Winchester Cres seg 50	Cooks Gap
	Wyaldra Ln seg 10	Cooks Gap
Sealed Regional Roads[1]	MR 208 (Bylong Valley Way) seg 1045	Murrumbo
	MR 208 (Bylong Valley Way) seg 1095	Bylong
Bridges	Giles Creek culvert on Crudine Road	Crudine
	Cunningham's Creek bridge on Mount Vincent Road	Ilford
	Lawson's Creek bridge on Pyangle Road	Lue
Causeways[1]	Causeway at 1.72 km Artz Lane	Tallawang
	Causeway at 9.87 km Barneys Reef Road	Stubbo
	Causeway at 1.08 km Birriwa Road	Biriwa
	Causeway at 2.43 km Black Springs Road	Eurunderee
	Causeway at 12 km Botobolar Road	Botobolar

ASSET TYPE	ASSET	LOCATION
	Causeway at 12.93 km Botobolar Road	Botobolar
	Causeway at 13.2 km Botobolar Road	Botobolar
	Causeway at 0.88 km Buckaroo Road	Buckaroo
	Causeway at 0.37 km Corish's Lane	Tallawang
	Causeway at 1.69 km Corish's Lane	Tallawang
	Causeway at 0.11 km Drew's Lane	Home Rule
	Causeway at 2.83 km Gardiners Road	Two Mile Flat
	Causeway at 3.49 km Grattai Creek Road	Grattai
	Causeway at 6.19 km Gundowda Road	Hargraves
	Causeway at 2.96 km Hayes Gap Road	Hayes Gap
	Causeway at 6.64 km Hayes Gap Road	Hayes Gap
	Causeway at 6.48 km Kains Flat Road	Kains Flat
	Causeway at 4.11 km Kaludabah Road	Piambong
	Causeway at 1.37 km Melrose Road	Mount Frome
	Causeway at 4.8 km Moolarben Road	Moolarben
	Causeway at 1.13 km Mount Pleasant Lane	Buckaroo
	Causeway at 81.92 km Mr 208 (Wollar Road)	Budgee Budgee
	Causeway at 1.28 km Old Barney's Reef	Gulgong
	Causeway at 0.34 km Old Grattai Road	Erudgere
	Causeway at 0.74 km Prices Lane	Pyramul
	Causeway at 1 km Prices Lane	Pyramul
	Causeway at 1.3 km Puggoon Road	Beryl
	Causeway at 7.67 km Puggoon Road	Tallawang
	Causeway at 12.1 km Pyramul Road	Pyramul
	Causeway at 0.48 km School Lane	Budgee Budgee
	Causeway at 5.56 km Springfield Lane	Galambine
	Causeway at 6.26 km Springfield Lane	Galambine
	Causeway at 0.33 km Suzanne Road	Tallawang
	Causeway at 21.87 km Triamble Road	Triamble
	Causeway at 7.17 km Triamble Road	Hargraves
	Causeway at 15.75 km Twelve Mile Road	Yarrabin
	Causeway at 1.67 km Winchester Crescent	Cooks Gap
	Causeway at 22.54 km Yarrabin Road	Yarrabin
Pathways	Footpath over Cudgegong Bridge on Ulan Road	Mudgee

The above service deficiencies were identified from:

- [1]Recently inspected assets that were given a condition rating of 5 (very poor)
- [2]Recently inspected bridges which were classified with a CS4 condition rating (indicating major structure issues)
- [3]Council assets which are known to be exhibiting atypical

- The footpath on the side of the Cudgegong River Bridge on Ulan Road in Mudgee, is uneven and narrow, with a steep drop off into bridge traffic. This section of pathway (which forms a widely used recreational loop) is a hazard - particularly to children, those on bikes and scooters and the elderly.

5.1.3 Asset condition

Condition of all assets is monitored by regular visual inspections depending on the strategic importance of the asset and its design life. The current inspection schedule is shown in Table 5-3 below.

TABLE 5-3: ROADS ASSET INSPECTION SCHEDULE

ASSET TYPE	CURRENT INSPECTION FREQUENCY	DESIRED INSPECTION FREQUENCY
Sealed regional roads	6 monthly	6 monthly
Sealed local roads	12 monthly	12 monthly
Unsealed roads	Not inspected	Not inspected
Bridges – Level 1 (visual inspection)	2-3 years	1 year
Bridges – Level 2 inspections	Depends on condition	Depends on condition
Causeways	5 years	5 years
Kerb and Gutter	Not inspected	5 years
Pathways	5 years	5 years
Carparks	Not inspected	5 years

The condition profile of our assets is shown in Table 5-4.

TABLE 5-4: ASSET CONDITION PROFILE

LEVEL	SEALED LOCAL ROADS (2014)	SEALED REGIONAL ROADS (2014)[1]	BRIDGES (2006)	PATHWAYS (2014)[2]	C'WAYS (2015)[2]	K&G	CARPKS
0	4%	20%	7%				
1	25%	14%	3%	21%	17%	21%	51%
2	33%	20%	14%	30%	17%	22%	23%
3	25%	29%	71%	27%	35%	53%	22%
4	13%	16%	5%	21%	21%	3%	4.5%
5	1%	0%	1%	0.2%	0.4%	9%	0%

Note: [1]Regional road conditions do not include Cope or Ulan Roads. [2] Based on area m² of total assets rather than length or # of assets.

Condition is measured using a 1 – 5 grading system as defined in Table 5-5.

TABLE 5-5: ASSET CONDITION RATING SYSTEM ADOPTED

RATING	CONDITION	RISK	MAINTENANCE REQUIRED
1	Very good	Very low	Less than 5% pavement failures - minimal maintenance required
2	Good	Low	Between 5% and 10% pavement failures - minor maintenance required
3	Fair	Med	Between 10% and 20% pavement failures - routine maintenance required
4	Poor	High	Between 20% and 50% pavement failures - partial renewal / reseal / heavy patching required
5	Very Poor	Very high	Greater than 50% pavement failures - beyond maintenance, rehabilitation required

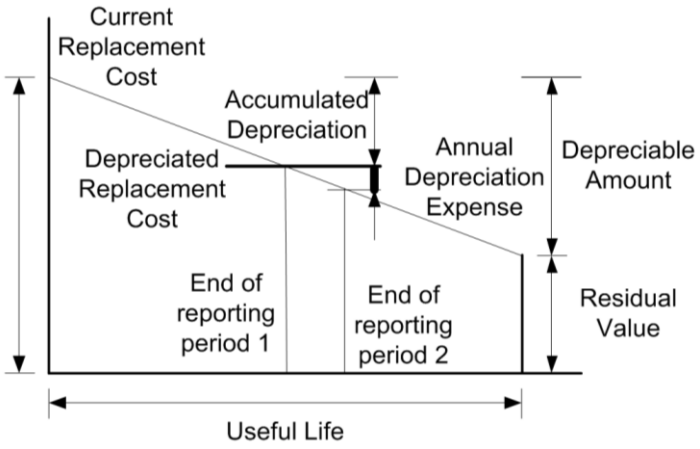
5.1.4 Asset valuations

The assets recorded in the asset register were last revalued at 30 June 2015. Assets are currently valued as shown in Table 5-6. Please refer to Figure 5-2 for the relationship between current replacement cost and useful life.

TABLE 5-6: ASSET VALUATIONS '000

ASSET VALUATIONS	ROADS	BRIDGES	PATHS	C'WAYS	K&G	CARPKS	ALL
Current replacement value	$328,105	$102,662	$7,920	$10,232	$18,503	$1,189	**$468,611**
Depreciable amount	$328,105	$102,662	$7,920	$10,232	$18,503	$1,189	**$468,611**
Depreciated replacement costs	$199,776	$56,071	$4,433	$4,937	$9,006	$882	**$274,795**
Annual depreciation charge	$8,708	$1,090	$119	$146	$247	$31	**$10,342**

FIGURE 5-2: USEFUL LIFE



Useful lives were reviewed in 2015 during the Fair Value process and taking into account current performance and recommended industry standards. The useful life values are based on averages. It is accepted that some road assets will need to be replaced more frequently, for example the roads with higher traffic and heavy vehicle use where as some road assets with low use would last longer. Council anticipates assets to require replacement much earlier and possibly later than the average useful lives used.

Key assumptions made in preparing the valuations were:

- Design lives will be achieved with no atypical aging patters
- Assets will not be adversely impacted by external factors (i.e. climatic events)
- That current classifications for grading, resheeting, etc., will remain

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time. Refer to Table 5-7.

TABLE 5-7: RATIOS OF ASSET CONSUMPTION AND EXPENDITURE

DESCRIPTION	RATIO
Rate of annual asset consumption (depreciation/ depreciable amount)	2.2%
Rate of annual asset renewal in 2015/16 (capital renewal exp/ depreciable amount)	3.3%
Asset renewals in 2015/16 as percentage of consumption	150.7%
Percentage Increase in asset stock in the year	1.7%

5.1.5 Historical Data

Some historical data has been collected, however this mainly relates to attributes. Historical financial data can be retrieved from past Council Financial Reports.

5.2 Infrastructure Risk Management Plan

An assessment of risks associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Infrastructure Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational are summarised in Table 5-8. These risks are reported to management and Council.

TABLE 5-8: CRITICAL RISKS AND TREATMENT PLANS[2]

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN	RISK RATING (VH, H)	RISK TREATMENT PLAN	RESIDUAL RISK[1]
Road pavement	Accidents due to adverse road pavement conditions	VH	Identify, inspect, replace or repair strategy.	M
Road pavement	Damage to infrastructure due to excessive rain	H	Identify, inspect, replace or repair strategy Seek Government flood assistance where appropriate.	M
Pathways	Trip hazards or unevenness caused from broken/cracked pavement, loose material or tree root damage.	H	Remove or minimise hazard as soon as possible. Replace concrete if necessary. Use bridge paint to highlight issues prior to replacement	L
Pathways / Roads	Pedestrian/cycle and vehicle conflict	H	Provide safe pedestrian refuge crossing points as required, and address any safety issues created by pinch-points caused at bridges or tight corners that do not offer pathways.	M
Bridges	Damage due to high loading	VH	Undertake a study into Councils existing bridges to determine what load limits exist	M

SERVICE OR ASSET AT RISK	WHAT CAN HAPPEN	RISK RATING (VH, H)	RISK TREATMENT PLAN	RESIDUAL RISK[1]
All assets	Inaccurate information in the asset register (attributes, conditions, etc) may cause financial shock to the organisation	H	Review recent records and update asset register with works undertaken. Change any information found to be inaccurate. Put systems into place so that renewal data is entered into the system appropriately.	L

Note: [1]The residual risk is the risk remaining after the selected risk treatment plan is operational. [2] Treatment costs vary depending on location and scope of work required.

5.3 Routine Operations and Maintenance Plan

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

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

5.3.1 Operations and Maintenance Plan

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

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

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

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

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

Past maintenance expenditure is shown in Table 5.9.

TABLE 5.9: MAINTENANCE EXPENDITURE TRENDS

YEAR	MAINTENANCE EXPENDITURE (000'S)
2011/12	$5,667
2012/13	$5,181
2013/14	$5,820
2014/15	$6,219
2015/16	$6,492

Roads related maintenance expenditure is currently not differentiated between planned and specific maintenance and unplanned maintenance, with the exception of cyclical grading on unsealed roads.

Maintenance expenditure levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance expenditure levels are such that will result in a lesser level-of-service, the service consequences and service risks have been identified and service consequences highlighted in this asset management plan and service risks considered in the Infrastructure Risk Management Plan.

Assessment and prioritisation of reactive maintenance is undertaken by Council staff using experience and judgement.

5.3.2 Operations and Maintenance Strategies

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

- Scheduling operations activities to deliver the defined level-of-service in the most efficient manner
- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes
- Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost)
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs

- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options
- Maintain a current hierarchy of critical assets and required operations and maintenance activities
- Develop and regularly review appropriate emergency response capability
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used

ASSET HIERARCHY

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

Council's asset service hierarchy is shown in figure Table 5-10.

TABLE 5-10: ROADS ASSET MANAGEMENT HIERARCHY

ROAD CLASS	DESCRIPTION
ARTERIAL	Arterial road – generally a state (RMS) road
SUB-ART	Sub-arterial road – generally our regional roads
CBD	Roads within CBD areas
COLL-URB	Collector road – urban
COLLECT	Collector road – rural
LOC-URB	Local urban road – generally sealed
MAINLOC	Main local road
MINORLOC	Minor local road – generally an unsealed rural road
UNMAINT	This road is not maintained

CRITICAL ASSETS

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

Operations and maintenances activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities are detailed in Table 5-11.

TABLE 5-11: CRITICAL ASSETS AND SERVICE LEVEL OBJECTIVES

CRITICAL ASSETS	CRITICAL FAILURE MODE	OPERATIONS & MAINTENANCE ACTIVITIES
Bridges	Collapse or partial collapse	Regular inspections to identify potential issues, maintenance or renewal work if required
Major Roads	Collapse or partial collapse	
Causeways on major water causes or with no alternative access	Collapse or flooding of causeway	

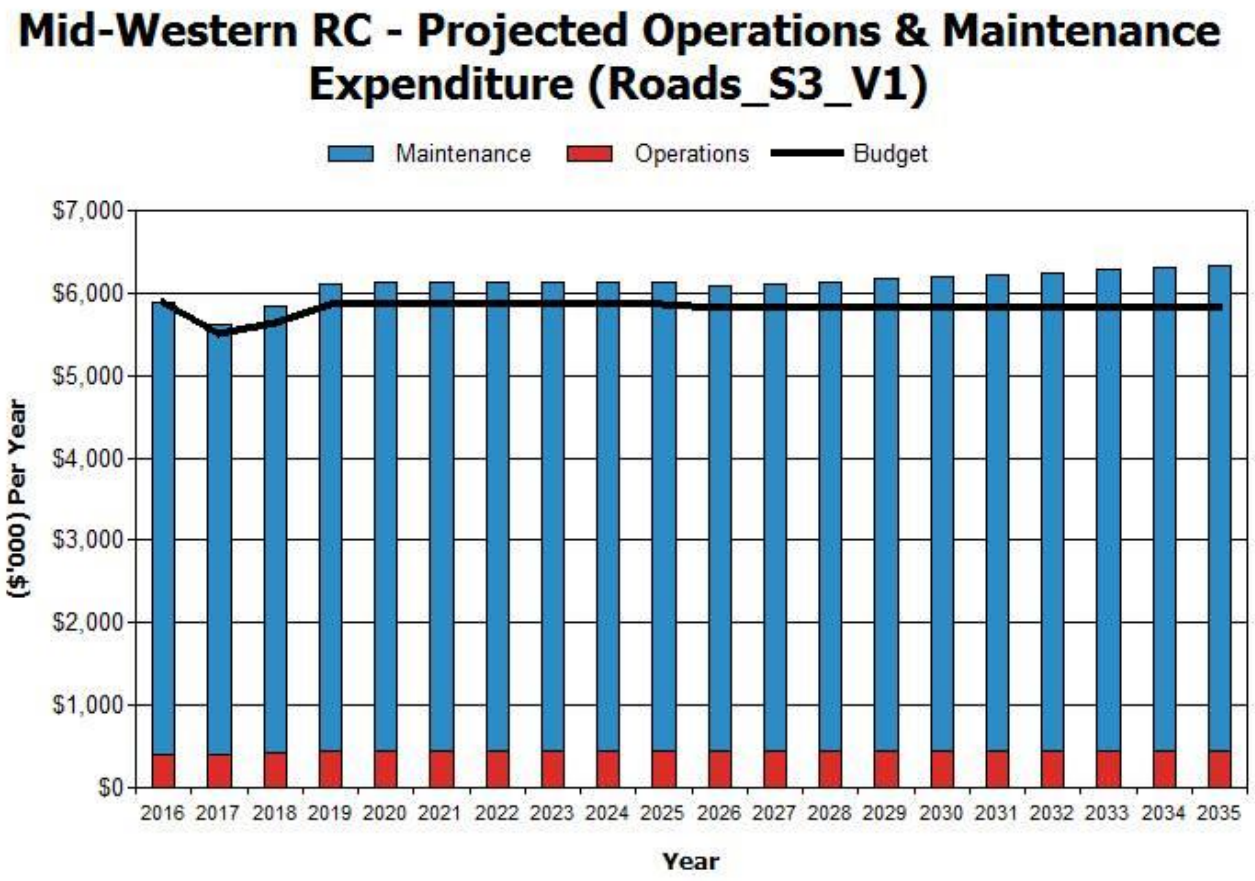
STANDARDS AND SPECIFICATIONS

Maintenance work is carried out in accordance with RMS, AUSTSPEC and AUSTROADS Standards and Specifications, and relevant Council policy.

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 5-3. Note that all costs are shown in current 2015/16 dollar values (i.e. real values).

FIGURE 5-3



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

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

5.4 Renewal/Replacement Plan

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

5.4.1 Renewal plan

Assets requiring renewal/replacement are identified from one of three methods provided in the 'Expenditure Template'.

- **Method 1** uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year

- **Method 2** uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems)
- **Method 3** uses a combination of average network renewals plus defect repairs in the Renewal Plan and Defect Repair Plan worksheets on the 'Expenditure template'

Method 1 was used for this asset management plan.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.1 in Section 5.1.1 above.

5.4.2 Renewal and Replacement Strategies

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

- Planning and scheduling renewal projects to deliver the defined level-of-service in the most efficient manner
- Undertaking project scoping for all capital renewal and replacement projects to identify:
  - the service delivery 'deficiency', present risk and optimum time for renewal/replacement
  - the project objectives to rectify the deficiency
  - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency
  - and evaluate the options against evaluation criteria adopted by Council, and
  - select the best option to be included in capital renewal programs
- Using 'low cost' renewal methods (cost of renewal is less than replacement) wherever possible
- Maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required
- Review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used

RENEWAL RANKING CRITERIA

Asset renewal and replacement is typically undertaken to either:

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

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

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

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5-12.

TABLE 5-12: RENEWAL AND REPLACEMENT PRIORITY RANKING CRITERIA

CRITERIA	WEIGHTING
Funds available	40%
Condition rating	30%
Asset age	20%
Strategic importance	10%
Total	**100%**

RENEWAL AND REPLACEMENT STANDARDS

Renewal work is carried out in accordance with RMS, AUSTSPEC and AUSTROADS Standards and Specifications.

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

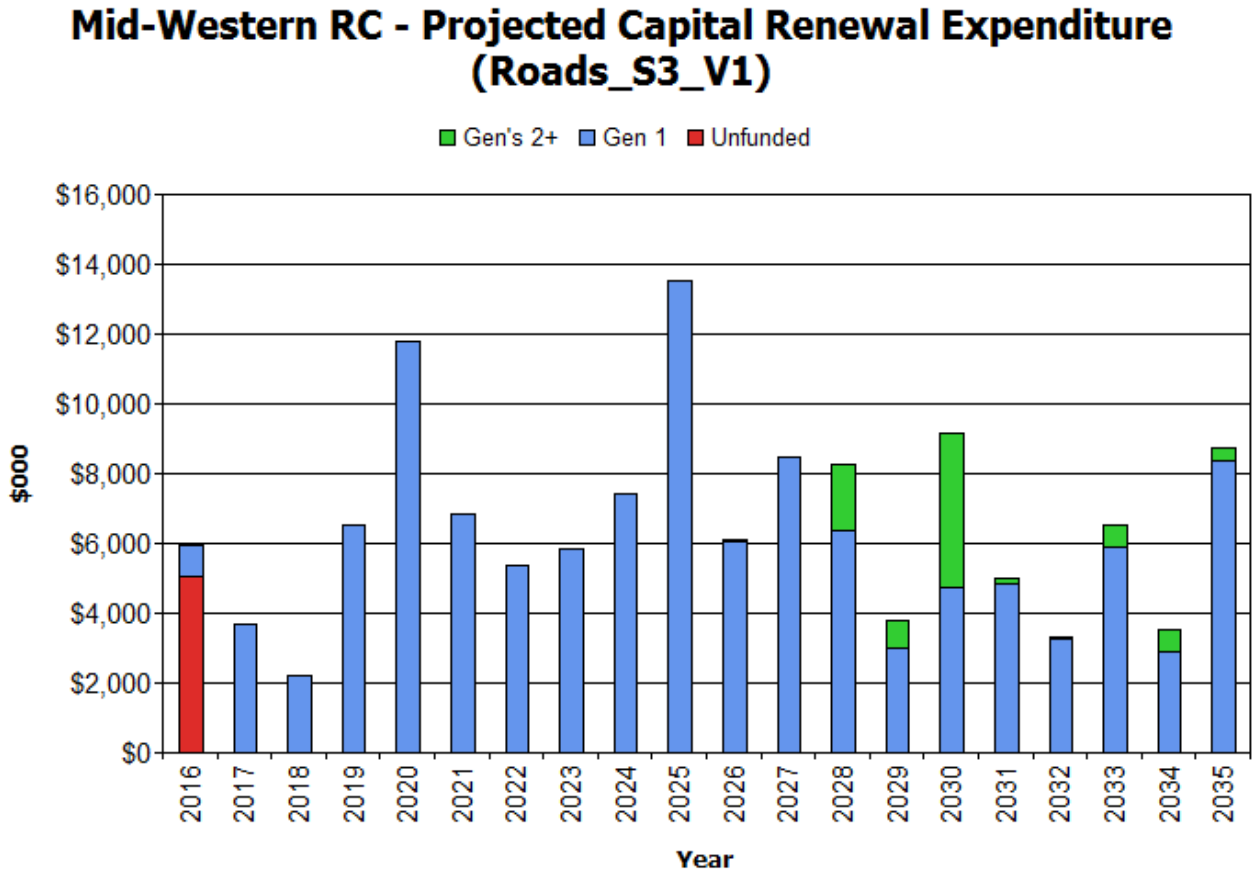
[7] Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

5.4.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Figure 5-4. Note that all amounts are shown in real values.

The projected capital renewal and replacement program is currently developed on an annual basis. A longer term capital renewal and replacement program is under development.

FIGURE 5-4:



5.5 Creation/Acquisition/Upgrade Plan

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

5.5.1 Selection criteria

New assets and upgrade/expansion of existing assets are identified from various sources such as councillor/director or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate.

Verified proposals are ranked by priority and available funds in accordance with the Delivery Program and Operational Plan.

5.5.2 Capital Investment Strategies

Council will plan capital upgrade and new projects to meet level-of-service objectives by:

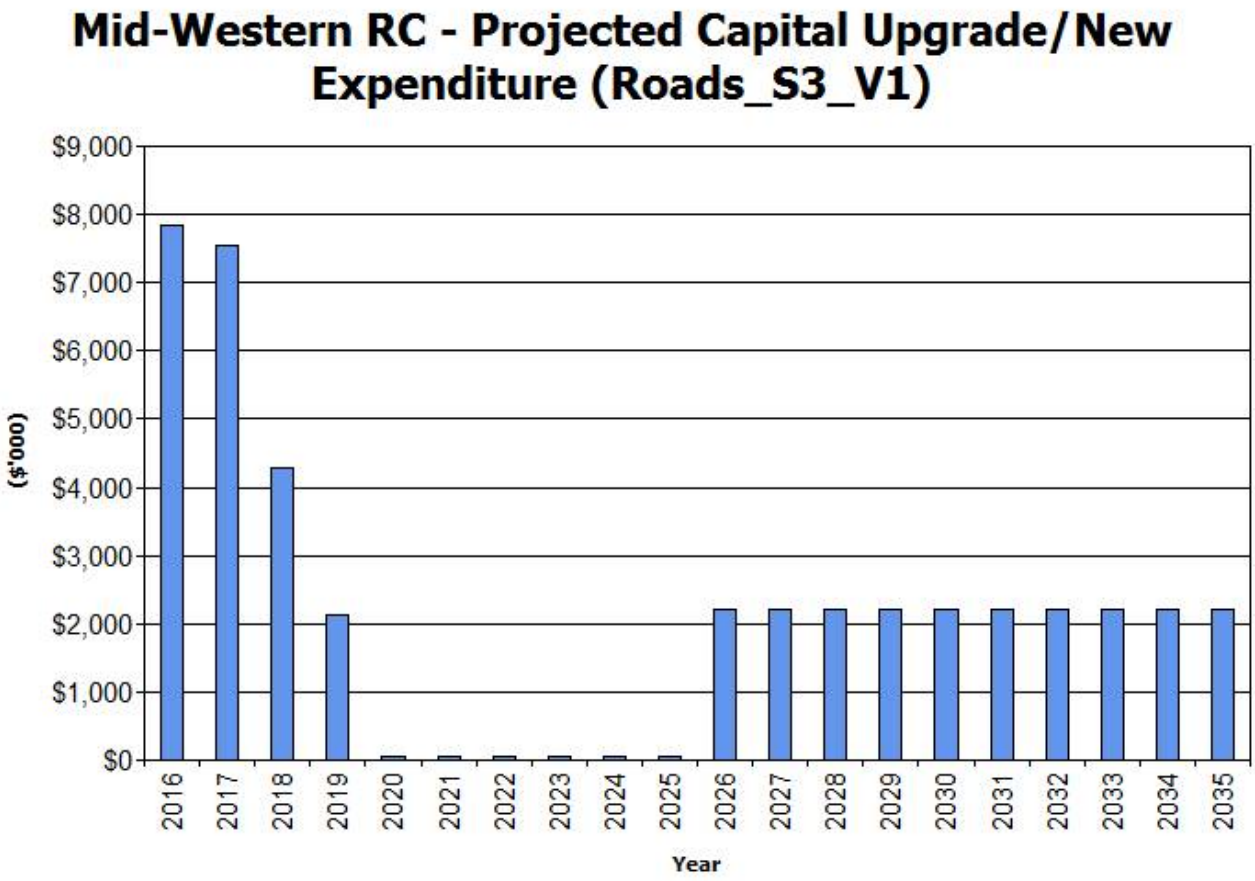
- Planning and scheduling capital upgrade and new projects to deliver the defined level-of-service in the most efficient manner
- Undertake project scoping for all capital upgrade/new projects to identify:
  - the service delivery 'deficiency', present risk and required timeline for delivery of the upgrade/new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

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

5.5.3 Summary of future upgrade/new assets expenditure

Projected upgrade/new asset expenditures are summarised in Figure 5-5. The projected upgrade/new capital works program is shown in Appendix B. All amounts are shown in real values.

FIGURE 5-5:



The high expenditure in years 2016-2019 is associated with extensive grant funding received for projects such as Ulan Road, Cope Road, Fairydale Lane and Wollar Road seal extension. We cannot guarantee grant funding for years 2020-2025 for capital upgrade projects which is reflected in Figure 5-5 where the capital upgrade expenditure for those years consists of only footpath extension works. Capital upgrade expenditure for years 2026-2035 has been estimated as the average annual expenditure for years 2016-2025.

Expenditure on new assets and services in Council's capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal will be reflected in the renewal and replacement programs, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any revenue gained from asset disposals is accommodated in Council's long term financial plan.

Where cash flow projections from asset disposals are not available, these will be developed in future revisions of this asset management plan.

5.7 Service Consequences and Risks

Council has prioritised decisions made in adopting this asset management plan to obtain the optimum benefits from its available resources. Decisions were made based on the development of 3 scenarios of asset management plans.

- **Scenario 1** - What we would like to do based on asset register data
- **Scenario 2** – What we should do with existing budgets and identifying level-of-service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position). This may require several versions of the asset management plan.
- **Scenario 3** – What we can do and be financially sustainable with asset management plans matching long-term financial plans.

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

5.7.1 What we cannot do

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

- 6 monthly grading of unsealed roads
- Increasing the grading frequency of roads currently graded every 24 months
- Extension of the existing maintained network to include roads currently listed as un-maintained
- Extension of the sealed network, with the exception of Wollar Road

5.7.2 Service consequences

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

- Reduced levels of service that require motorists to drive to the road conditions, rather than to the speed limits

5.7.3 Risk consequences

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

- Exposure to claims against Council
- Political and social pressure for improved service levels
- Lower performance on asset and financial indicators

These risks have been included with the Infrastructure Risk Management Plan summarised in Section 5.2 and risk management plans actions and expenditures included within projected expenditures.

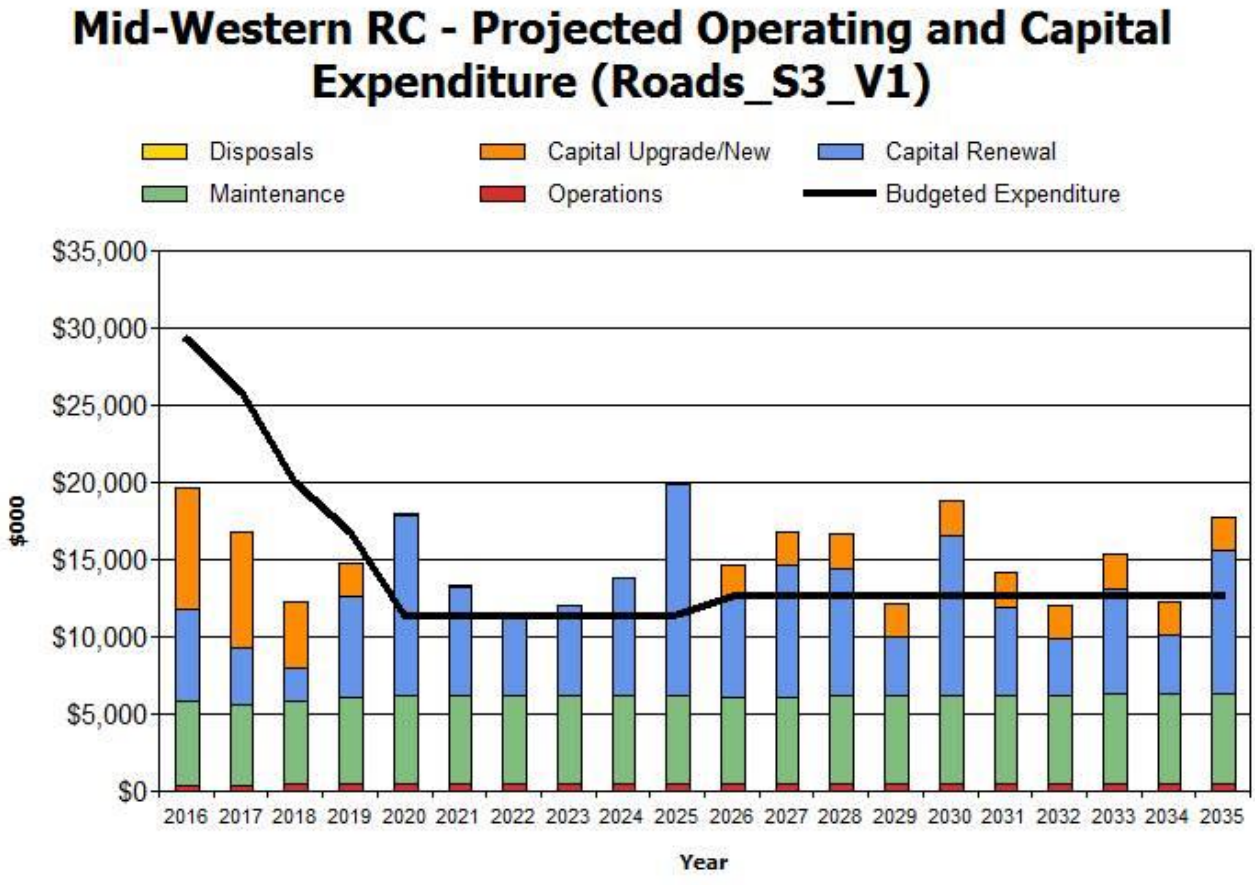
6. Financial Summary

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

6.1 Financial Statements and Projections

The financial projections are shown in Figure 6-1 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are shown in real values.

FIGURE 6-1:



6.1.1 Sustainability of service delivery

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

ASSET RENEWAL FUNDING RATIO

The Asset Renewal Funding Ratio for roads assets is provided in Table 6-1. This ratio represents the percentage of funds that Council requires for the optimal renewal and replacement of its assets.

TABLE 6-1: RENEWAL AND REPLACEMENT PRIORITY RANKING CRITERIA

ASSET RENEWAL FUNDING RATIO	122%

LONG TERM - LIFE CYCLE COST

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense), as shown in Table 6-2.

TABLE 6-2: PROJECTED AND BUDGETED LIFE CYCLE EXPENDITURES

LONG TERM - LIFE CYCLE STATISTICS	('000)
Live cycle cost (average 10 years projected operations, maintenance expenditure and depreciation)	$16,369
Life cycle expenditure (average 10 years LTFP budget operations, maintenance and capital renewal expenditure)	$13,765
Life cycle surplus/shortfall (life cycle expenditure – life cycle cost) [+ve=surplus, -ve=shortfall]	-2,604
Life cycle indicator (life cycle expenditure / life cycle cost)	84%

The total life cycle cost for the services covered in this asset management plan are is $16.4M per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The total life cycle expenditure over the 10 year planning period is $13.8M per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A difference between life cycle cost and life cycle expenditure is the life cycle surplus/gap. The life cycle gap for services covered by this asset management plan is $2.6M per year.

Overall life cycle expenditure is 84% of life cycle costs.

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

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

MEDIUM TERM – 10 YEAR FINANCIAL PLANNING PERIOD

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

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall (see Table 6-3 below). In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

TABLE 6-3: PROJECTED AND BUDGETED 10 YEAR EXPENDITURES

10 YEARS FINANCIAL PLANNING PERIOD	('000)
10 years Operations, Maintenance & Renewal Projected Expenditure	$13,009
10 years Operations, Maintenance & Renewal LTFP Budget Expenditure	$13,765
10 years financing surplus/shortfall (life cycle expenditure – life cycle cost) [+ve=surplus, -ve=shortfall]	$755
Life cycle indicator (life cycle expenditure / life cycle cost)	106%

As can be seen from the table above, Council can expect a 10 year funding surplus of $755 thousand per year. The surplus is driven by grant funding in years 1-4 well above anticipated continued funding levels. Grant funding is mostly for Wollar Road Seal extension and Ulan Road. However, the average anticipated funding available for years 5-10 is 76%, or a shortfall of $3.4M per year (Refer Table 6-4). This is more reflective of the long term funding shortfall on Council's road network.

TABLE 6-4: PROJECTED AND BUDGETED 10 YEAR EXPENDITURES

YEAR	Projected Expenditure of Operational, Maintenance and Renewal	Budgeted Expenditure of Operational, Maintenance and Renewal	Life cycle indicator	COMMENT
2015/16	$11,801	$21,459	182%	LTFP Budget includes grant for Wollar Rd and Ulan Rd.
2016/17	$9,267	$18,246	197%	
2017/18	$8,020	$15,664	195%	
2018/19	$12,646	$14,614	116%	
Average (Year 1-4)	**$15,891.75**	**$22,953.91**	**144%**	
2019/20	$17,912	$11,256	63%	Excludes amount for Ulan Rd from LTFP Budget.
2020/21	$13,237	$11,228	85%	
2021/22	$11,515	$11,254	98%	
2022/23	$11,990	$11,281	94%	
2023/24	$13,778	$11,309	82%	
2024/25	$19,923	$11,338	57%	
Average (Year 5-10)	**$14,778.83**	**$11,330.28**	**77%**	
Average (Year 1-10)	**$13,009**	**$13,765**	**106%**	

MEDIUM TERM – 5 YEAR FINANCIAL PLANNING PERIOD

Projected and budgeted expenditures for the next five year period are included in Table 6-5.

TABLE 6-5: PROJECTED AND BUDGETED 5 YEAR EXPENDITURES

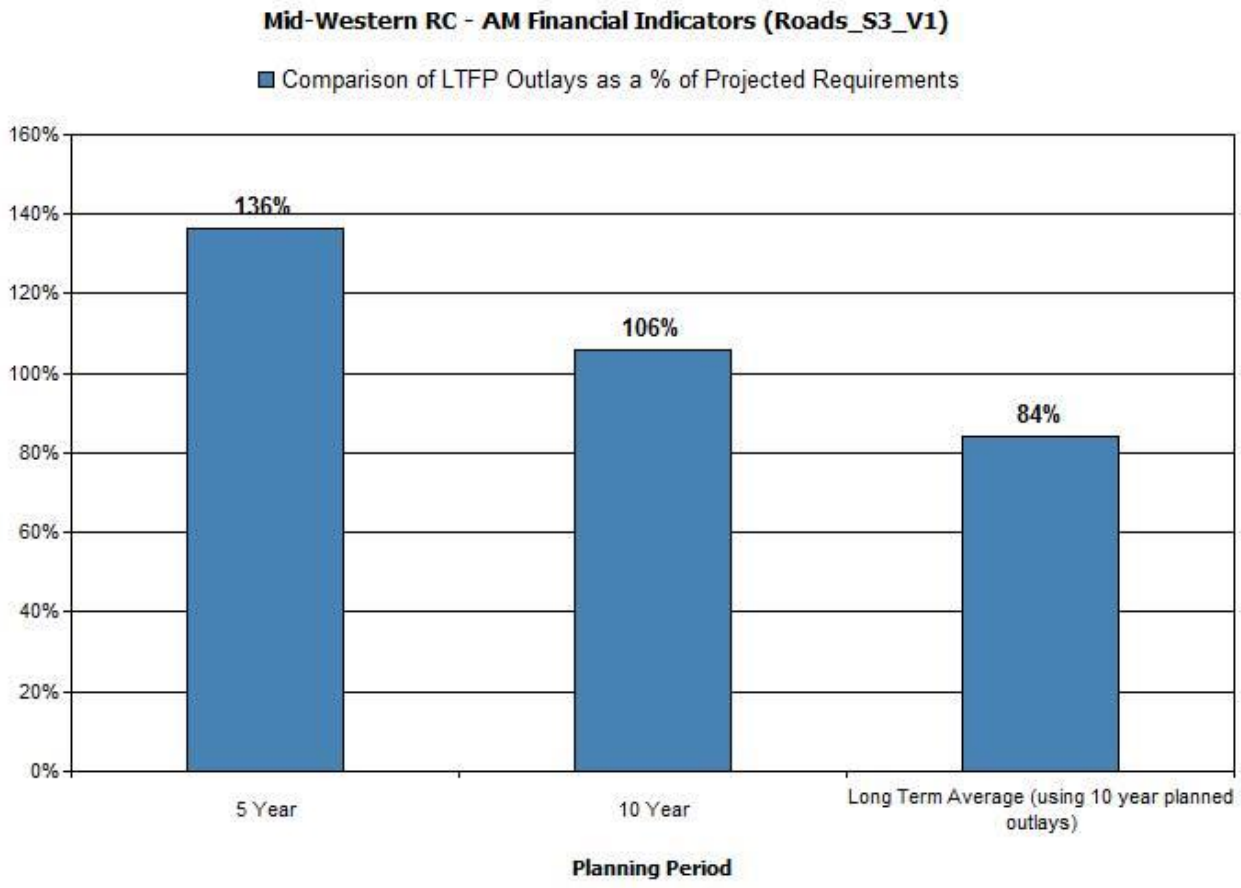
MEDIUM TERM – 5 YEARS FINANCIAL PLANNING PERIOD	('000)
5 years Operations, Maintenance & Renewal Projected Expenditure	$11,930
5 years Operations, Maintenance & Renewal LTFP Budget Expenditure	$16,248
5 years financing surplus/shortfall (life cycle expenditure – life cycle cost) [+ve=surplus, -ve=shortfall]	$4,318
Life cycle indicator (life cycle expenditure / life cycle cost)	136%

As can be seen from the table above, Council can expect a 5 year funding surplus of $4.3M. This indicates that Council expects to have 136% of the projected expenditures needed to provide the roads assets as documented in the asset management plan.

ASSET MANAGEMENT FINANCIAL INDICATORS

Figures 6-2 show the asset management financial indicators over the 5 year planning period, 10 year planning period and for the long term life cycle.

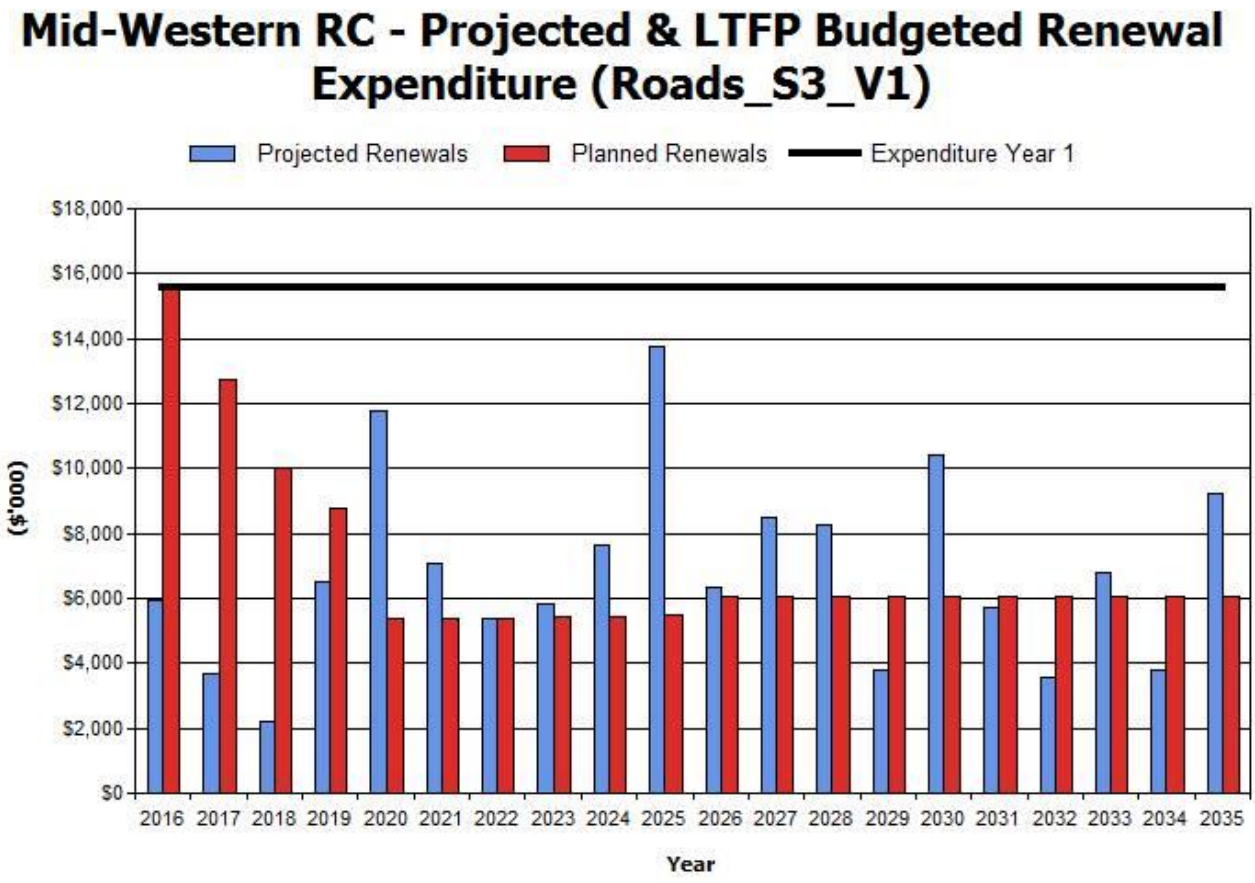
FIGURE 6-2:



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

Figures 6-3 show the projected asset renewal and replacement expenditure over the 20 years of the asset management plan. The projected asset renewal and replacement expenditure is compared to renewal and replacement expenditure in the capital works program, which is accommodated in the long term financial plan

FIGURE 6-3:



Tables 6-6 show the shortfall between projected renewal and replacement expenditures and expenditure accommodated in long term financial plan. A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets are shown in Appendix C.

TABLE 6-6: PROJECTED AND LTFP BUDGETED RENEWALS AND FINANCING SURPLUS (SHORTFALL) ('000)

YEAR END 30-JUNE	PROJECTED RENEWALS	LTFP RENEWALS BUDGET	RENEWAL FINANCING SURPLUS (SHORTFALL)	CUMULATIVE SURPLUS (SHORTFALL)
2016	$5,924	$15,581	$9,656	$9,656
2017	$3,659	$12,736	$9,077	$18,733
2018	$2,186	$10,021	$7,835	$26,568
2019	$6,534	$8,746	$2,212	$28,780
2020	$11,774	$5,388	$-6,386	$22,394
2021	$7,098	$5,360	$-1,738	$20,656
2022	$5,376	$5,386	$10	$20,666
2023	$5,850	$5,413	$-437	$20,229

YEAR END 30-JUNE	PROJECTED RENEWALS	LTFP RENEWALS BUDGET	RENEWAL FINANCING SURPLUS (SHORTFALL)	CUMULATIVE SURPLUS (SHORTFALL)
2024	$7,637	$5,441	$-2,196	$18,034
2025	$13,782	$5,470	$-8,312	$9,722
2026	$6,361	$6,030	$-330	$9,391
2027	$8,484	$6,030	$-2,453	$6,938
2028	$8,273	$6,030	$-2,243	$4,695
2029	$3,790	$6,030	$2,241	$6,936
2030	$10,410	$6,030	$-4,380	$2,556
2031	$5,736	$6,030	$294	$2,850
2032	$3,579	$6,030	$2,452	$5,302
2033	$6,807	$6,030	$-776	$4,526
2034	$3,766	$6,030	$2,264	$6,790
2035	$9,242	$6,030	$-3,212	$3,578

Providing services in a sustainable manner will require matching of projected asset renewal and replacement expenditure to meet agreed service levels with **the corresponding** capital works program accommodated in the long term financial plan.

A gap between **projected asset renewal/replacement expenditure and amounts accommodated in the LTFP** indicates that **further work is required on reviewing service levels in the asset management plan (including possibly revising the LTFP)** before finalising the asset management plan to manage required service levels and funding **to eliminate any funding gap**.

We will manage the 'gap' by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community.

6.1.2 Projected expenditures for long term financial plan

Tables 6-7 show the projected expenditures for the long term financial plan. Expenditure projections are in 2015/2016 real values.

TABLE 6-7: PROJECTED EXPENDITURES FOR LONG TERM FINANCIAL PLAN ('000)

YEAR	OPERATIONS	MAINTENANCE	PROJECTED CAPITAL RENEWAL	CAPITAL UPGRADE / NEW
2016	$400	$5,477	$5,924	$7,852
2017	$396	$5,212	$3,659	$7,556
2018	$424	$5,410	$2,186	$4,295
2019	$444	$5,668	$6,534	$2,130
2020	$446	$5,692	$11,774	$53
2021	$446	$5,693	$7,098	$53
2022	$446	$5,693	$5,376	$53
2023	$446	$5,694	$5,850	$53
2024	$446	$5,695	$7,637	$53
2025	$446	$5,695	$13,782	$53
2026	$438	$5,647	$6,361	$2,215
2027	$440	$5,672	$8,484	$2,215
2028	$442	$5,698	$8,273	$2,215
2029	$444	$5,723	$3,790	$2,215
2030	$446	$5,749	$10,410	$2,215
2031	$448	$5,774	$5,736	$2,215
2032	$450	$5,800	$3,579	$2,215
2033	$452	$5,825	$6,807	$2,215
2034	$454	$5,851	$3,766	$2,215
2035	$456	$5,876	$9,242	$2,215

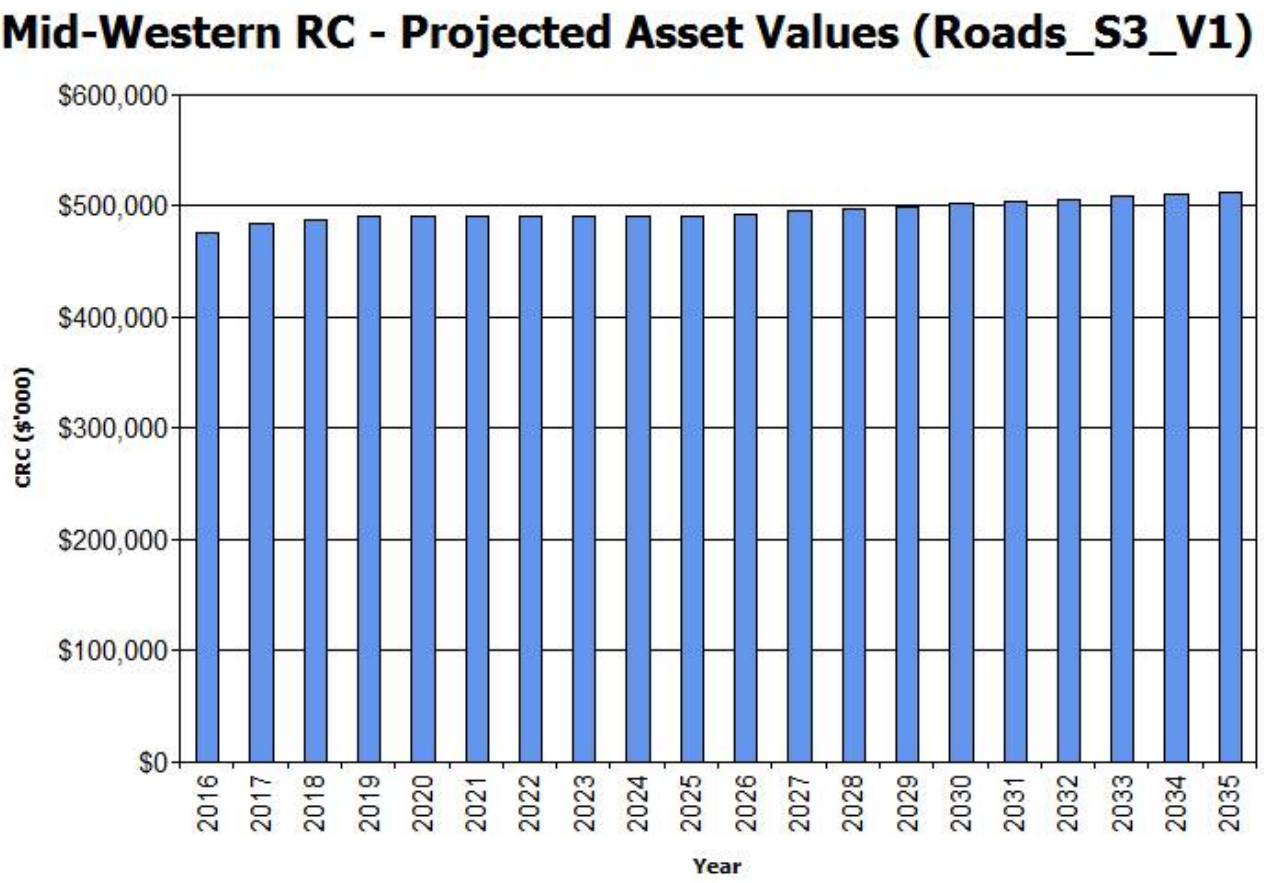
6.2 Funding Strategy

After reviewing service levels, as appropriate to ensure ongoing financial sustainability projected expenditures identified in Section 6.1.2 will be accommodated in the Council's 10 year long term financial plan.

6.3 Valuation Forecasts

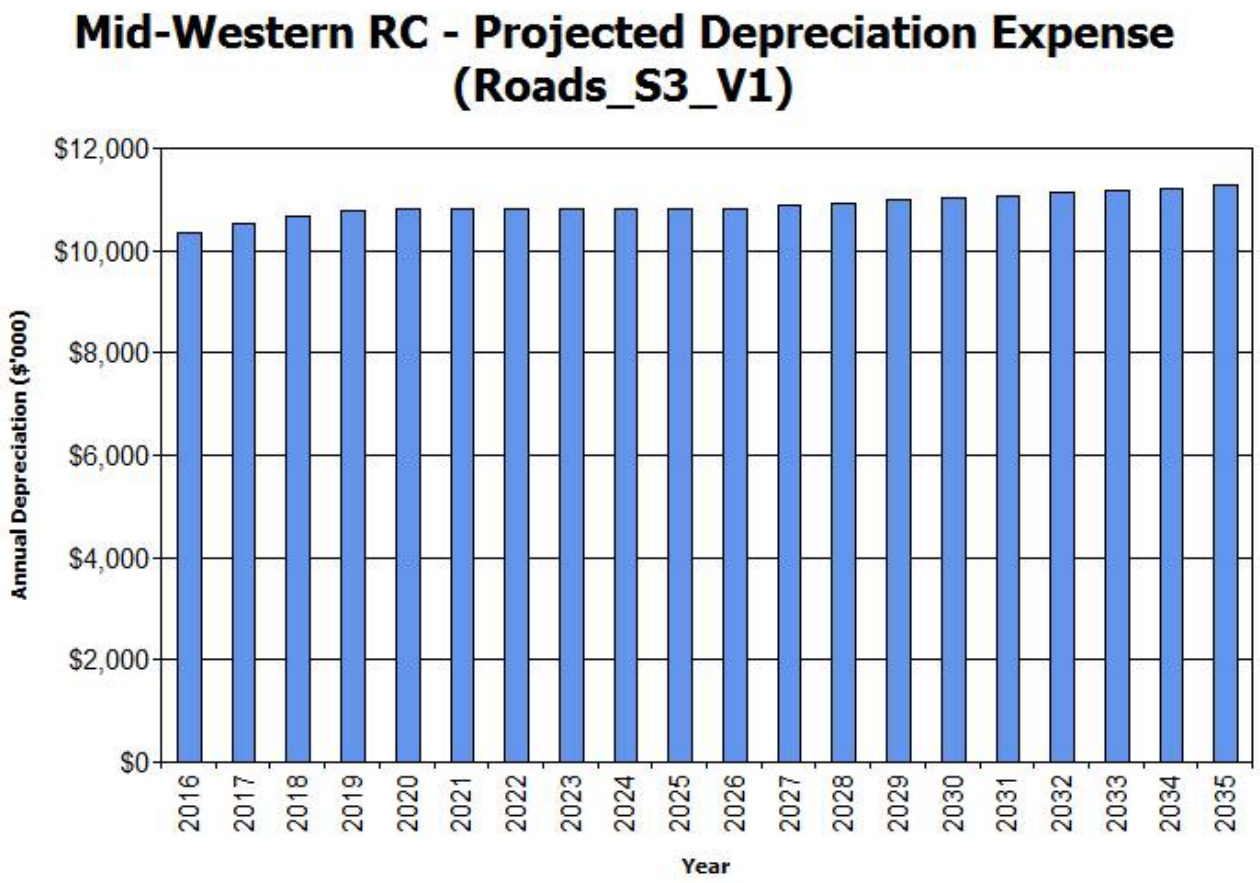
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 6-4 shows the projected replacement cost asset values over the planning period in real values.

FIGURE 6-4:



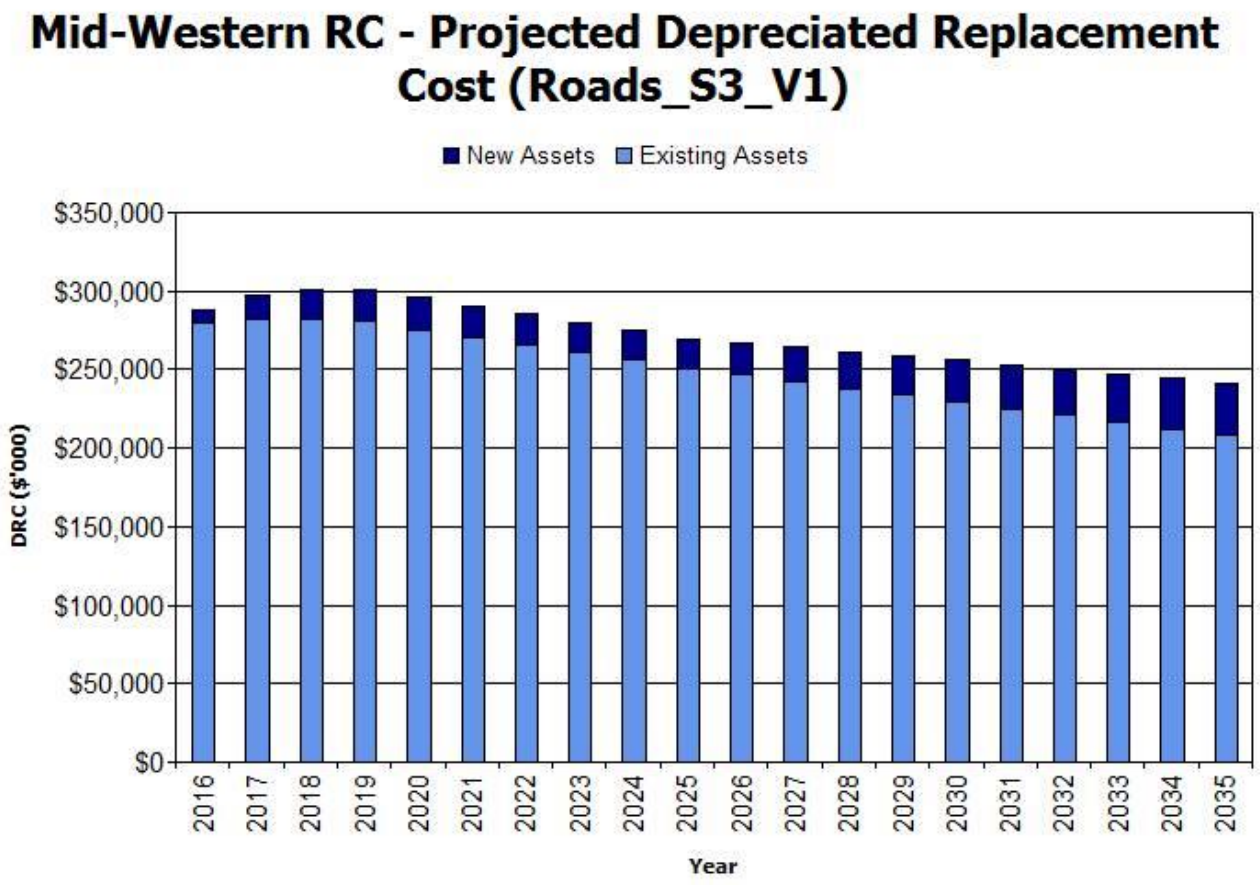
Depreciation expense values are forecast in line with asset values as shown in Figure 6-5.

FIGURE 6-5:



The depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 6-6. The depreciated replacement cost of contributed and new assets is shown in the darker colour and in the lighter colour for existing assets.

FIGURE 6-6:



6.4 Key Assumptions made in Financial Forecasts

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

Key assumptions made in this asset management plan and risks that these may change are shown in Table 6-8.

TABLE 6-8: KEY ASSUMPTIONS MADE IN ASSET MANAGEMENT PLAN AND RISKS OF CHANGE

Key Assumptions	Risks of Change to Assumptions
Forecasts based on maintaining present levels of service	Current levels of service cannot be maintained
Data in asset register is accurate	Change in asset data may affect financial forecasts
Expenditure projections are preliminary	Actual replacement costs may increase

6.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this asset management plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale[8] in accordance with Table 6-9.

TABLE 6-9: DATA CONFIDENCE GRADING SYSTEM

CONFIDENCE GRADE	DESCRIPTION
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy ± 40%
E Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this asset management plan is shown in Table 6-10.

[8] IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

TABLE 6-10: DATA CONFIDENCE ASSESSMENT FOR DATA USED IN ASSET MANAGEMENT PLAN

DATA	CONFIDENCE ASSESSMENT	COMMENT
Demand drivers	B	High growth
Growth projections	C	High growth
Operations expenditures	B	Based on sound data
Maintenance expenditures	B	Based on sound data
Projected Renewal exps. - Asset values	B	Based on sound dimensions and rates. Some information may be out-of-date.
- Asset residual values	B	
- Asset useful lives	B	Based on experience, some modifications to design life may need to be made based on asset condition inspections
- Condition modelling	B	Condition assessments have been undertaken
- Network renewals	C	Low confidence in reliability of data
- Defect repairs	B	
Upgrade/New expenditures	B	New works are based on both age and inspection
Disposal expenditures	C	

Over all data sources the data confidence is assessed as medium confidence level for data used in the preparation of this asset management plan. Inspections are undertaken, but not always regularly.

7. Plan Improvement and Monitoring

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Council uses Technology One for financial and asset management. Council's roads infrastructure was revalued 30th June 2015 in accordance with the Fair Value accounting standards and Office of Local Government requirement.

ACCOUNTABILITIES FOR FINANCIAL SYSTEMS

The finance department is responsible for the financial systems operating at Council.

ACCOUNTING STANDARDS AND REGULATIONS

Australian Accounting Standards and NSW Office of Local Government Accounting Codes.

CAPITAL/MAINTENANCE THRESHOLD

Presently capital budget is defined but maintenance is not split between planned and reactive maintenance activities (with the exception of cyclical unsealed road grading)

REQUIRED CHANGES TO ACCOUNTING FINANCIAL SYSTEMS ARISING FROM THIS ASSET MANAGEMENT PLAN

The chart of accounts would be required to separate maintenance expenditure into planned and reactive maintenance.

7.1.2 Asset management system

Council uses the Technology One Asset Management System.

ASSET REGISTERS

- All roads assets are found on the transport register, with information split as follows:
- Road – Road segment – Road seal / Road pavement / Road earthworks
- Bridges (including bridge sized culverts)
- Causeways
- Roundabouts
- Pathways

- Kerb and Gutter
- Carparks
- Road furniture

Data included in the register is shown in Table 7-1 below.

TABLE 7-1: ASSET MANAGEMENT SYSTEM – INFORMATION AVAILABLE

INFORMATION AVAILABLE	ROADS	BRIDGES	CAUSE-WAYS	ROUND-ABOUTS	PATH-WAYS	K&G	CAR PARK
Asset ID	✓	✓	✓	✓	✓	✓	✓
Asset Description	✓	✓	✓	✓	✓	✓	✓
Asset Location	✓	✓	✓	✓	✓	✓	✓
Road name	✓	✓	✓	✓	✓	✓	✓
Segment number	✓	✓		✓			
Road number	✓						
Road class	✓			✓			
Road type	✓	✓	✓	✓			
Is segment maintained?	✓			✓	✓		✓
Is segment a bus route?	✓						
Is segment sealed?	✓	✓		✓			✓
Tourism significance	✓						
Commercial district	✓						
Alternative access	✓						
Large incline	✓						
Segment length	✓						
AADT	✓						
Segment Start	✓					✓	
Segment End	✓					✓	
Residential density	✓						
Formation width	✓						
Seal width	✓						
Earthworks material	✓						
Pavement material	✓						
Seal material	✓					✓	✓
Large incline?	✓						
Gravel pit > 15 km	✓						
Gravel type	✓						
Seal Type	✓						
Construction Date	✓	✓					

INFORMATION AVAILABLE	ROADS	BRIDGES	CAUSE -WAYS	ROUND-ABOUTS	PATH-WAYS	K&G	CAR PARK
Reconstruction Year	✓	✓	✓		✓	✓	✓
Design Life	✓	✓	✓		✓	✓	✓
Condition Assessment	✓	✓	✓	✓	✓	✓	
Date Assessed	✓	✓	✓	✓	✓	✓	
Assessed By	✓	✓	✓	✓	✓	✓	
Grading Schedule	✓						
Last Grading Date	✓						
Next Grading Date	✓						
Chainage		✓	✓	✓			
Bridge Structure		✓					
Bridge Deck		✓					
Bridge Abutments		✓					
Piers		✓					
Superstructure		✓					
Span / cells		✓					
Height of Bridge		✓					
Pipe diameter		✓					
Length		✓	✓	✓	✓	✓	✓
Width		✓	✓	✓		✓	✓
Area		✓	✓	✓			✓
Guard Rails		✓					
Depth Markers			✓				
Causeway Access			✓				
Location of Signs			✓				
Safety Rank			✓				
Location Geometry			✓				
Score			✓				
Low Flow			✓				
# Pipes / Boxes			✓				
Pipe dia./Box ht mm			✓				
Box Width mm			✓				
Scour Protection			✓				
Access Road			✓				
Material				✓	✓	✓	
Style				✓	✓	✓	
O/A Diameter m				✓			
Garden Diameter m				✓			

INFORMATION AVAILABLE	ROADS	BRIDGES	CAUSE -WAYS	ROUND-ABOUTS	PATH-WAYS	K&G	CAR PARK
Concrete Depth mm				✓			
% MWRC Owns				✓			
Cardinal Direction					✓	✓	
Construction Status						✓	
Year Proposed						✓	
Gap						✓	

LINKAGE FROM ASSET MANAGEMENT TO FINANCIAL SYSTEM

Assets are linked between system using unique individual assets IDs along with asset grouping classifications.

ACCOUNTABILITIES FOR ASSET MANAGEMENT SYSTEM AND DATA MAINTENANCE

Primary accountability for asset management lies with the Plant and Facilities Department within the Operations Directorate. This is supported by the Finance Department within the Corporate Directorate which is responsible for the management of the asset management systems.

REQUIRED CHANGES TO ASSET MANAGEMENT SYSTEM ARISING FROM THIS ASSET MANAGEMENT PLAN

- Restructure of the asset hierarchy and asset attributes (currently being undertaken)
- Utilisation of works orders for scheduling capital renewal works, as well as maintenance activities
- Improved accuracy of data within the asset management system
- Improved process and responsibilities for entering new assets into the asset management system

7.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 7.2.

TABLE 7.2: IMPROVEMENT PLAN

TASK NO	TASK	RESPONSIBILITY	RESOURCES REQUIRED	TIMELINE
1	Establishment of procedures and responsibility for entering of new assets into the asset management system	Operations / Finance	No extra resource is required	6 months
2	Development of medium term works program.	Operations	No extra resource is required	1 year
3	Completion of new pathways, kerb and gutter, and causeways GIS layers	Operations / IT	No extra resource is required	1 year
4	Update maps of road networks to reflect recent changes to road classification (to be completed after the revised Traffic Management Plan is completed)	Operations / IT	No extra resource is required	1 year
5	Collect up-to-date asset condition information for all assets covered in this AMP. Develop a schedule for future asset condition assessments	Operations	No extra resource is required	1 year
6	Record performance against newly adopted levels-of-service criteria, addressing both customer expectations and technical requirement	Operations	No extra resource is required	1 years
7	Introduction of GPS androids and software to collect and record data in the field	Operation	Funding required	1 year
8	Undertake current assessments for bridges by a suitably qualified consultant, including life-cycle costing and remaining life	External Consultant	Funding required	2 years
9	Include any other outstanding roads related asset categories into this RAMP including (but not limited to): road furniture, signage, line marking, safety fencing	Operation	No extra resource is required	5 years

7.3 Monitoring and Review Procedures

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

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

The asset management plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within 6 months of each Council election.

7.4 Performance Measures

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

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

8. References

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

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

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

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

MWRC Roads Strategic Plan 2010

9. Appendices

Appendix A Maintenance Response Levels of Service

Appendix B Projected 10 year Capital Upgrade/New Works Program

Appendix C LTFP Budgeted Expenditures Accommodated in asset management plan

Appendix D Abbreviations

Appendix E Glossary

Appendix A Maintenance Response Levels of Service

The unsealed roads grading program is noted in Table A1 below.

TABLE A1: UNSEALED ROADS GRADING PROGRAM

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Aarons Pass Road	Collector	22.61		12 Month
Adams Lead Road	Minor Local	0.83		48 Month
Adelong Road	Minor Local	0.82		24 Month
Albens Lane	Local Urban	0.20		36 Month
Alpha Road	Minor Local	2.61		24 Month
Anderson Road	Minor Local	0.76		48 Month
Anderson Street	Local Urban	0.22		48 Month
Araluen Lane	Minor Local	1.32		48 Month
Araluen Road	Minor Local	2.29	Yes	12 Month
Arber Street	Local Urban	0.30		48 Month
Artz Lane	Minor Local	1.93		12 month
Bakers Lane	Minor Local	3.76		24 Month
Bara Road	Minor Local	18.26		24 Month
Barigan Road	Minor Local	21.53		24 Month
Barnett Street	Local Urban	0.22		48 Month
Barneys Reef Road	Minor Local	5.13		24 Month
Barry Street	Local Urban	0.15		48 Month
Bartletts Road	Main Local	1.99		24 Month
Bayly Street - Lue	Local Urban	0.35		24 Month
Beechworth Road	Minor Local	2.00		24 Month
Beela Road	Minor Local	1.19		24 Month
Beragoo Road	Minor Local	2.74		24 Month
Bergalin Road	Minor Local	3.58		48 Month
Bernards Road	Minor Local	1.59	Yes	12 Month
Berwicks Road	Minor Local	0.50		24 Month
Birkalla Road	Main Local	10.17	Yes	12 Month
Birriwa Bus Route Nth	Minor Local	11.63	Yes	12 Month
Birriwa Bus Route Sth 10-70	Minor Local	9.96	Yes	12 Month
Birriwa Bus Route Sth 80-90	Minor Local	2.29		12 month
Birriwa Road	Minor Local	4.84	Yes	12 Month
Bishops View Road	Minor Local	1.80		24 Month
Black Soil Road	Minor Local	3.73		24 Month
Black Springs Road 130-140	Minor Local	3.86		24 month
Black Willow Road	Minor Local	11.50		24 Month
Blue Springs Road 140-180	Minor Local	6.53	Yes	12 Month
Blue Springs Road 190-210	Minor Local	3.86		24 Month
Bobadah Road	Minor Local	1.30		24 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Bocoble Road	Main Local	10.12	Part	12 Month
Bombandy Road	Minor Local	2.63		24 Month
Bonds Road	Minor Local	9.94		24 Month
Botobolar Road	Main Local	5.75	Yes	12 Month
Bowen Street	Local Urban	0.54		24 Month
Bowles Lane	Minor Local	1.70		36 Month
Boxs Lane	Minor Local	1.33		24 Month
Breakfast Creek Road	Minor Local	6.60		24 Month
Brewers Lane	Minor Local	0.50		36 Month
Broadhead Road	Local Urban	2.20	Yes	12 Month
Brogans Creek Road	Minor Local	3.74		12 Month
Browie Road	Minor Local	11.83		24 Month
Browne Street	Local Urban	0.09		48 Month
Browns Lane	Minor Local	2.05		12 Month
Bruce Road	Local Urban	1.96		24 Month
Buckaroo Road 20-40	Minor Local	2.53	Yes	12 Month
Buckaroo Road 60-70	Minor Local	2.13		12 Month
Budden Gap Road	Minor Local	0.40		48 Month
Bunbury Road	Minor Local	0.84		24 Month
Burns Road	Minor Local	3.38		24 Month
Burrendong Dam Road	Main Local	6.22		12 Month
Burrundulla Road	Minor Local	2.16	Yes	12 Month
Byrnes Lane	Minor Local	0.25		48 Month
Bywong Lane	Minor Local	0.42		48 Month
Cafés Road	Minor Local	10.17		36 Month
Calderwood Road	Minor Local	0.87		36 Month
Camerons Road	Minor Local	3.25		24 Month
Campbells Creek Road	Minor Local	17.65		24 Month
Canadian Lead Road	Main Local	8.96	Yes	12 Month
Canary Street	Local Urban	0.12		48 Month
Carara Road	Minor Local	0.79		24 Month
Carawatha Road	Minor Local	0.45		48 Month
Carramar Road	Minor Local	4.19		24 Month
Cemetery Road	Local Urban	1.10		48 Month
Charles Road	Minor Local	0.73		36 Month
Church Lane	Main Local	1.36	Yes	12 Month
Clarkes Creek Road	Minor Local	2.36		24 Month
Clarkes Road	Minor Local	3.24		36 Month
Cliffdale Road	Minor Local	7.25		24 Month
Common Road	Local Urban	0.27		48 Month
Conservation Crescent	Minor Local	0.78		24 Month
Coorumbene Road	Minor Local	0.40		24 Month
Cooyal Lane	Minor Local	2.83	Yes	12 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Coppers Lane	Minor Local	1.09		36 Month
Coricudgy Road 20-70	Collector	7.12		12 Month
Coricudgy Road 80-170	Minor Local	10.40		24 Month
Corishs Lane	Minor Local	5.25	Yes	12 Month
Cox Street - Lue	Local Urban	0.88		36 Month
Cox Street - Mudgee	Local Urban	0.21		48 Month
Coxs Creek Road 50-90	Main Local	7.08	Yes	12 Month
Coxs Creek Road 100-180	Main Local	11.81		12 Month
Coxs Crown Road	Minor Local	6.27		48 Month
Crossings Road	Minor Local	0.76		24 Month
Crowleys Lane	Minor Local	1.32		24 Month
Crudine Road	Main Local	16.82	Yes	12 Month
Cullenbone Lane	Minor Local	0.50		48 Month
Cumbo Road	Minor Local	5.27		24 Month
Cunningham's Lane	Minor Local	1.06		24 Month
Cuthels Lane	Minor Local	2.30		48 Month
Cypress Drive	Minor Local	7.14	Yes	12 Month
Dolomite Road - Tong Bong	Minor Local	1.25		36 Month
Doughertys Junction	Minor Local	11.56		24 Month
Dowling Street	Local Urban	0.67		36 Month
Drews Lane	Minor Local	2.12	Yes	12 Month
Drip Lane	Minor Local	5.37		24 Month
Durridgerie Road	Minor Local	18.16		24 Month
Edgell Lane	Minor Local	1.69		24 Month
Elouera Road	Minor Local	0.66		24 Month
Endacotts Lane	Minor Local	1.68		36 Month
Erudgere Lane	Minor Local	5.92		24 Month
Evans Road	Minor Local	0.90		24 Month
Farrelly Street - Clandulla	Local Urban	0.18		48 Month
Ferris Street - Clandulla	Local Urban	0.38		48 Month
Fitzgerald Street	Local Urban	0.19		48 Month
Gardiners Road	Minor Local	3.58		36 Month
Gingers Lane	Minor Local	2.44		24 Month
Ginghi Road	Minor Local	7.17		24 Month
Gorries Lane	Minor Local	5.92		24 Month
Goulburn Road	Local Urban	0.13		48 Month
Governor Road	Minor Local	1.56		48 Month
Grattai Creek Road	Minor Local	4.95		24 Month
Green Gully Road	Minor Local	7.69	Part	12 Month
Growee Road	Minor Local	8.48		36 Month
Gum Gully Road	Minor Local	1.75		36 Month
Gundowda Road	Main Local	3.47		12 Month
Guntawang Street	Local Urban	0.36		48 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Hadabob Road	Minor Local	0.72		24 Month
Hanns Road	Minor Local	3.47		24 Month
Happy Valley Road	Minor Local	0.75		48 Month
Harpur Street	Local Urban	0.35		48 Month
Hayes Gap Road	Minor Local	14.69		24 Month
Hearne Lane	Minor Local	1.50		24 Month
Hillside Lane	Minor Local	1.18		24 Month
Holleys Lane	Minor Local	1.22		24 Month
Homer Street	Local Urban	0.36		36 Month
Honeysett Road	Minor Local	2.97		24 Month
Honners Road	Minor Local	0.93		24 Month
Horatio Street - Hargraves	Local Urban	0.14		48 Month
Horse Flat Lane	Minor Local	4.13		24 Month
Hughes Road	Minor Local	4.88		48 Month
Hundys Creek Road	Minor Local	0.60		36 Month
Ilford Hall Road	Minor Local	1.63		24 Month
Iron Barks Road	Minor Local	3.53	Yes	12 Month
Jacksons Lane	Minor Local	4.50		24 Month
Jennings Road North	Minor Local	8.00		24 Month
Jindalee Road	Minor Local	0.42		48 Month
Kains Flat Road	Minor Local	3.43		12 Month
Kaludabah Road	Minor Local	7.63		24 Month
Kaolin Road	Minor Local	3.56	Yes	12 Month
Keechs Road	Minor Local	0.71		48 Month
Kemps Valley Road	Minor Local	3.63		48 Month
Killens Road	Minor Local	8.80		36 Month
King Johns Lane	Minor Local	1.66		12 Month
Kurrajong Lane	Minor Local	0.44		24 Month
Kurtz Lane	Minor Local	3.01		36 Month
Lagoons Road	Minor Local	2.02		36 Month
Lambing Hill Road	Minor Local	4.13	Yes	12 Month
Lee Creek Road	Minor Local	14.53		24 Month
Lillee's Road	Minor Local	0.60		24 Month
Lindsay Street	Local Urban	1.25		24 Month
Lochiel Lane	Local Urban	0.23		48 Month
Louee Street (Part BVW)	Local Urban	0.22		48 Month
Lower Piambong Road 40-50; 90-100	Main Local	3.72	Part	12 Month
Lower Piambong Road 60-70; 110-280	Minor Local	23.09		24 Month
Lowes Peak Road	Collector	1.36	Yes	12 Month
Lyons Lane - Gulgong	Local Urban	0.20		48 Month
Lyons Lane - Mudgee	Local Urban	0.86		48 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Mahons Road	Minor Local	1.46		24 Month
Maiala Lane	Minor Local	0.43		12 Month
Maiala Road	Minor Local	3.00	Yes	12 Month
Maitland Bar Road	Minor Local	8.05		24 Month
Maloneys Road	Minor Local	12.97		24 Month
Margaret Street	Local Urban	0.06		48 Month
Marshfield Lane	Local Urban	0.55		12 Month
Martin Street	Local Urban	0.15		48 Month
Mayberry Road	Minor Local	1.80		48 Month
Mays Place	Minor Local	0.15		36 Month
McDonalds Road	Minor Local	1.04		24 Month
McLachlan Street - Rylstone	Local Urban	0.22		48 Month
McMurrays Lane	Minor Local	1.70	Yes	12 Month
Mead Street	Local Urban	0.20		48 Month
Mebul Road	Collector	13.58	Yes	12 Month
Melrose Road	Minor Local	5.75		12 Month
Melton Road	Local Urban	0.15		48 Month
Merinda Street	Local Urban	0.36		24 Month
Merotherie Road	Main Local	15.74	Part	12 Month
Mill Street	Local Urban	0.38		48 Month
Mogo Road 20-40	Minor Local	1.47	Yes	12 Month
Mogo Road 50-130	Minor Local	10.34		24 Month
Montaza Road	Main Local	3.88		24 Month
Moolarben Road	Minor Local	15.99		24 Month
Mount Pleasant Lane	Minor Local	3.38		12 Month
Mount View Road - Clandulla	Minor Local	2.62		24 Month
Mount View Road - Cooyal	Minor Local	1.38	Yes	12 Month
Mount Vincent Road	Main Local	8.05	Yes	12 Month
Mountain Street	Local Urban	0.05		48 Month
MR 208 (Wollar Road)	Collector	16.38	Yes	4 Month
Munghorn Street	Local Urban	0.15		48 Month
Murragamba Road	Minor Local	2.75		48 Month
Nevell Street	Local Urban	0.50		48 Month
Nevells Road	Minor Local	4.54		36 Month
New Olivers Road	Minor Local	2.64		24 Month
Nimoola Lane	Minor Local	0.15		24 Month
Nimoola Road	Minor Local	0.90		24 Month
Norlenbah Lane	Minor Local	0.49	Yes	12 Month
Norlenbah Road	Minor Local	1.15	Yes	12 Month
Norris Lane	Minor Local	1.44	Yes	12 Month
Nugget Lane	Local Urban	0.36		48 Month
Nullo Mountain Road 30-190	Main Local	19.35	Yes	12 Month
Nullo Mountain Road 200-260	Minor Local	6.94		24 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Oaklands Road	Minor Local	0.76		24 Month
Old Grattai Road	Minor Local	10.15		24 Month
Old Ilford Road	Minor Local	1.10		24 Month
Old Reservoir Road	Local Urban	0.21		48 Month
Old Tucklan Road	Minor Local	0.64	Yes	12 Month
Panorama Court	Minor Local	0.55		48 Month
Park View Road	Minor Local	0.90		48 Month
Parkinsons Road	Minor Local	1.05		36 Month
Peppercorn Lane	Minor Local	0.57		48 Month
Perke Road	Minor Local	1.10		48 Month
Perrams Road	Minor Local	3.85		24 Month
Perseverence Lane	Minor Local	1.38		24 Month
Phelps Lane	Minor Local	0.52		48 Month
Pindari Road	Minor Local	0.89		24 Month
Pine Close	Minor Local	0.94	Yes	12 Month
Pinelea Road	Minor Local	5.07		36 Month
Pinnacle Swamp Road	Minor Local	3.10		36 Month
Pipeclay Lane	Minor Local	1.74		24 Month
Powells Hut Road	Minor Local	2.45		24 Month
Powells Road	Minor Local	6.65		24 Month
Price Street - Wollar	Local Urban	0.07		48 Month
Prices Lane	Minor Local	5.78		36 Month
Puggoon Road	Minor Local	9.92		24 Month
Pyangle Road	Main Local	16.76		12 Month
Pyramul Road	Collector	6.26	Yes	12 Month
Quarry Lane	Minor Local	0.61		24 Month
Queens Pinch Road	Collector	6.38		12 Month
Racecourse Road	Local Urban	0.30		48 Month
Razorback Road	Minor Local	19.64		12 Month
Red Box Lane	Minor Local	0.30		36 Month
Reedy Avenue	Local Urban	0.05		48 Month
Reedy Creek Road	Minor Local	5.09		12 Month
Reef Road	Minor Local	3.67		24 Month
Reef Street	Local Urban	0.16		24 Month
Research Road	Minor Local	0.61		48 Month
Ringwood Road	Minor Local	1.32		24 Month
Riverlea Lane	Minor Local	0.62		48 Month
Riverlea Road	Minor Local	6.15		24 Month
Roberts Road	Minor Local	2.10		24 Month
Robinson Street	Local Urban	0.19		48 Month
Robinsons Road	Minor Local	1.30		48 Month
Rylestone Dam Road	Minor Local	0.85		48 Month
Rystone Dam Street	Local Urban	0.21		48 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Saddleback Trail	Minor Local	1.11		24 Month
Saints Lane	Minor Local	1.78		36 Month
Sallys Flat Road 10-30	Minor Local	2.71	Yes	12 Month
Sallys Flat Road 40-120	Minor Local	7.54		24 Month
Sandgrove Lane	Minor Local	1.78		48 Month
Sandy Creek Road	Minor Local	0.86		36 Month
Sawpit Road	Local Urban	0.90		48 Month
Scotts Lane	Local Urban	0.51		48 Month
Scotts-Hill Street	Local Urban	0.32		24 Month
Shepherds Lane	Local Urban	0.37		48 Month
Short Street - Gulgong	Local Urban	0.08		48 Month
Sills Lane	Minor Local	1.96		24 Month
Slate Gully Road	Minor Local	1.34		24 Month
Slaughteryards Road	Local Urban	0.39		36 Month
Smedes Lane	Minor Local	4.03		24 Month
Snakes Creek Road	Minor Local	4.20		12 Month
Snelsons Lane	Local Urban	2.30		12 Month
Spir Road	Minor Local	1.46		24 Month
Spring Flat Road 30	Minor Local	0.98	Yes	12 Month
Spring Flat Road 40-90	Minor Local	7.02		24 Month
Spring Flat South Lane	Minor Local	2.59		12 Month
Spring Ridge Road	Minor Local	11.70		24 Month
Spring View Lane	Minor Local	0.43		24 Month
Springfield Lane		7.20	Yes	12 Month
Springwood Park Road	Minor Local	3.63		36 Month
Stanley Street - Cooyal	Minor Local	1.50		24 Month
Stanley Street - Kandos	Local Urban	0.10		48 Month
Stewart Street	Local Urban	0.19		48 Month
Stoney Creek Road	Minor Local	4.42		36 Month
Strikes Lane	Minor Local	3.07		12 Month
Stringy Bark Lane	Minor Local	0.83		36 Month
Stubbo Road	Main Local	2.84		24 Month
Summer Hill Road North	Minor Local	1.77		48 Month
Summer Hill Road South	Minor Local	2.41		24 Month
Suzanne Road	Minor Local	1.58		24 Month
Sweepy Road	Minor Local	2.70		48 Month
Tara Loop	Minor Local	10.26		24 Month
Thompsons Lane	Local Urban	2.17		36 Month
Tierney Lane	Minor Local	0.53		48 Month
Tinja Lane	Minor Local	4.51		12 Month
Tip Road - Birriwa	Local Urban	0.10		24 Month
Tip Road - Goolma	Minor Local	0.24		48 Month
Tongbong Road	Minor Local	15.82		36 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Tongbong Street	Local Urban	0.48		48 Month
Toole Road	Minor Local	0.96		24 Month
Totnes Valley Road	Minor Local	2.30		36 Month
Trgo Close	Minor Local	0.30		48 Month
Triamble Road	Minor Local	22.25	Part	12 Month
Triangle Swamp Road 20	Minor Local	3.01	Part	12 Month
Tuckermans Road	Minor Local	1.45		24 Month
Tucklan Road	Minor Local	6.70	Yes	12 Month
Turill Bus Route	Minor Local	3.58		24 Month
Twelve Mile Road	Main Local	13.99		12 Month
Uamby Lane	Minor Local	2.60		24 Month
Ulan-Wollar Road	Main Local	4.87		12 Month
Ullamalla Road	Main Local	20.23		24 Month
Upper Botobolar Road	Minor Local	3.08		24 Month
Upper Bylong Road	Minor Local	2.51		24 Month
Upper Mebul Road	Minor Local	12.71		36 Month
Upper Piambong Road	Minor Local	9.32	Yes	12 Month
Upper Turon Road	Minor Local	3.65		24 Month
Uralba Lane	Minor Local	0.45		12 Month
Vulcan Road	Minor Local	0.75		24 Month
Wallawaugh Road	Minor Local	12.46		24 Month
Wallinga Lane	Minor Local	1.52		24 Month
Walsh Road	Minor Local	0.72		12 Month
Warrangunia Road	Minor Local	7.31		24 Month
Waterworks Road	Local Urban	2.52		12 Month
Whistons Lane	Minor Local	2.87		24 Month
White Cedars Road	Minor Local	8.63	Part	12 Month
White Rock Road	Minor Local	4.80		36 Month
Whitehouse Road	Minor Local	1.40		36 Month
Wilbetree Road	Main Local	8.35	Yes	12 Month
Williams Lane	Minor Local	0.85		48 Month
Wilson Road	Minor Local	1.20		24 Month
Winchester Crescent	Minor Local	4.24	Yes	12 Month
Windgraves Road	Local Urban	0.55		24 Month
Windles Lane	Minor Local	2.39	Yes	12 Month
Wonga Roo Road	Minor Local	4.50		24 Month
Woodburn Road	Minor Local	1.00		36 Month
Woods Lane	Minor Local	0.60		24 Month
Woolleys Road	Minor Local	4.60		24 Month
Woorawa Road	Minor Local	1.42		24 Month
Worlds End Road	Minor Local	0.20		48 Month
Wrights Lane	Minor Local	2.14		36 Month
Wyaldra Lane	Minor Local	1.77		24 Month

ROAD[1]	ROAD CLASS	LENGTH (KM)	BUS ROUTE	GRADING FREQUENCY
Wyaldra Park Road	Minor Local	0.90		24 Month
Wyoming Lane	Minor Local	0.60		24 Month
Wyoming Road	Minor Local	1.99		24 Month
Yarrabin Road	Minor Local	21.29		12 Month

[1]Note: numbers indicate road segment numbers where road differs in classification or bus route status.

Appendix B Projected Upgrade/Exp/New 10 year Capital Works Program

NAMS.PLUS3 Asset Management Form 2C Upgrade/New Plan

IPWEA INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA JRA

Mid-Western RC
Roads_S2_V2 **Projected Capital Upgrade/New Plan 2016**

Year	Item No.	Capital Upgrade and New Projects	Estimate ($000)	Running total ($000)
2016	1	60304 - FAIRY DALE LANE UPGRADE	$2,224	$2,224
2016	2	62806 - SEAL EXTENSION - WOLLAR ROAD	$1,149	$3,373
2016	3	64608 - ULAN ROAD - WINCHESTER CRES TO MIDBLOCK 31.106	$750	$4,123
2016	4	61241 - BLACKSPOT LUE ROAD	$573	$4,696
2016	5	64604 - ULAN ROAD - CHURCH LN TO OVERTAKING LN 14.5	$480	$5,176
2016	6	61628 - REHAB COPE ROAD UPGRADE - MILESTONE 3	$359	$5,535
2016	7	62497 - MURRAGAMBA RD - REALIGNMENT	$337	$5,873
2016	8	61630 - REHAB COPE ROAD UPGRADE - MILESTONE 4	$314	$6,186
2016	9	62123 - SEAL EXTENSION - PYRAMUL ROAD	$220	$6,406
2016	10	Remaining projects (amount less than $200k)	$1,446	$7,852
2016	**Total Projected Capital Upgrade/New Plan**		**$7,852**	

Roads_S2_V2 **Projected Capital Upgrade/New Plan 2017**

2017	1	62806 - SEAL EXTENSION - WOLLAR ROAD	$5,044	$5,044
2017	2	64600 - ULAN ROAD STRATEGY - CAPITAL BUDGET ONLY	$1,402	$6,446
2017	3	61615 - REHAB COPE ROAD UPGRADE BUDGET ONLY	$387	$6,833
2017	4	61200 - RURAL SEALED ROAD REHAB & WIDENING	$250	$7,083
2017	5	61600 - RURAL SEALED REGIONAL ROAD REPAIR PROGRAM	$240	$7,323
2017	6	Remaining projects (amount less than $200k)	$233	$7,556
2017	7			
2017	8			
2017	9			
2017	10			
2017	**Total Projected Capital Upgrade/New Plan**		**$7,556**	

Mid-Western RC
Roads_S2_V2 **Projected Capital Upgrade/New Plan 2018**

Year	Item No.	Capital Upgrade and New Projects	Estimate ($000)	Running total ($000)
2018	1	62806 - SEAL EXTENSION - WOLLAR ROAD	$2,206	$2,206
2018	2	64600 - ULAN ROAD STRATEGY - CAPITAL BUDGET ONLY	$1,436	$3,642
2018	3	61200 - RURAL SEALED ROAD REHAB & WIDENING	$253	$3,895
2018	4	61600 - RURAL SEALED REGIONAL ROAD REPAIR PROGRAM	$240	$4,135
2018	5	Remaining projects (amount less than $200k)	$160	$4,295
2018	6			
2018	7			
2018	8			
2018	9			
2018	10			
2018	**Total Projected Capital Upgrade/New Plan**		**$4,295**	

Roads_S2_V2 **Projected Capital Upgrade/New Plan 2019**

2019	1	64600 - ULAN ROAD STRATEGY - CAPITAL BUDGET ONLY	$1,470	$1,470
2019	2	61200 - RURAL SEALED ROAD REHAB & WIDENING	$256	$1,726
2019	3	61600 - RURAL SEALED REGIONAL ROAD REPAIR PROGRAM	$240	$1,966
2019	4	Remaining projects (amount less than $200k)	$164	$2,130
2019	5			
2019	6			
2019	7			
2019	8			
2019	9			
2019	10			
2019	**Total Projected Capital Upgrade/New Plan**		**$2,130**	

Mid-Western RC
Roads_S2_V2 **Projected Capital Upgrade/New Plan 2020**

Year	Item No.	Capital Upgrade and New Projects	Estimate ($000)	Running total ($000)
2020	1	Footpaths	$53	$53
2020	2			
2020	3			
2020	4			
2020	5			
2020	6			
2020	7			
2020	8			
2020	9			
2020	10			
2020	**Total Projected Capital Upgrade/New Plan**		**$53**	

Roads_S2_V2 **Projected Capital Upgrade/New Plan 2021**

2021	1	Footpaths	$53	$53
2021	2			
2021	3			
2021	4			
2021	5			
2021	6			
2021	7			
2021	8			
2021	9			
2021	10			
2021	**Total Projected Capital Upgrade/New Plan**		**$53**	

Mid-Western RC
Roads_S2_V2 **Projected Capital Upgrade/New Plan 2022**

Year	Item No.	Capital Upgrade and New Projects	Estimate ($000)	Running total ($000)
2022	1	Footpaths	$53	$53
2022	2			
2022	3			
2022	4			
2022	5			
2022	6			
2022	7			
2022	8			
2022	9			
2022	10			
2022	**Total Projected Capital Upgrade/New Plan**		**$53**	

Roads_S2_V2 **Projected Capital Upgrade/New Plan 2023**

2023	1	Footpaths	$53	$53
2023	2			
2023	3			
2023	4			
2023	5			
2023	6			
2023	7			
2023	8			
2023	9			
2023	10			
2023	**Total Projected Capital Upgrade/New Plan**		**$53**	

Mid-Western RC
Roads_S2_V2 **Projected Capital Upgrade/New Plan 2024**

Year	Item No.	Capital Upgrade and New Projects	Estimate ($000)	Running total ($000)
2024	1	Footpaths	$53	$53
2024	2			
2024	3			
2024	4			
2024	5			
2024	6			
2024	7			
2024	8			
2024	9			
2024	10			
2024	**Total Projected Capital Upgrade/New Plan**		**$53**	

Roads_S2_V2 **Projected Capital Upgrade/New Plan 2025**

2025	1	Footpaths	$53	$53
2025	2			
2025	3			
2025	4			
2025	5			
2025	6			
2025	7			
2025	8			
2025	9			
2025	10			
2025	**Total Projected Capital Upgrade/New Plan**		**$53**	
				Average/yr
	Total 10 year program		**$22,151**	$2,215

Appendix C Budgeted Expenditures Accommodated in LTFP

NAMS.PLUS3 Asset Management **Mid-Western RC**

Roads_S3_V1 **Asset Management Plan**

IPWEA INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA JRA

First year of expenditure projections **2016** (financial yr ending)

Roads

Asset values at start of planning period

Current replacement cost	$468,611	(000)	Calc CRC from Asset Register: $468,611 (000)
Depreciable amount	$468,611	(000)	This is a check for you.
Depreciated replacement cost	$274,795	(000)	
Annual depreciation expense	$10,342	(000)	

Operations and Maintenance Costs for New Assets

	% of asset value
Additional operations costs	0.09%
Additional maintenance	1.15%
Additional depreciation	2.21%

Planned renewal budget (information only)

You may use these values calculated from your data or overwrite the links.

Planned Expenditures from LTFP

20 Year Expenditure Projections Note: Enter all values in current **2016** values

Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000
Expenditure Outlays included in Long Term Financial Plan (in current $ values)										
Operations										
Operations **budget**	$400	$389	$410	$427	$427	$427	$427	$427	$427	$427
Management **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
AM systems **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total operations	$400	$389	$410	$427	$427	$427	$427	$427	$427	$427
Maintenance										
Reactive maintenance **budget**	$5,477	$5,121	$5,233	$5,441	$5,441	$5,441	$5,441	$5,441	$5,441	$5,441
Planned maintenance **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Specific maintenance items **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total maintenance	$5,477	$5,121	$5,233	$5,441	$5,441	$5,441	$5,441	$5,441	$5,441	$5,441
Capital										
Planned renewal **budget**	$15,581	$12,736	$10,021	$8,746	$5,388	$5,360	$5,386	$5,413	$5,441	$5,470
Planned upgrade/new **budget**	$7,852	$7,556	$4,295	$2,130	$53	$53	$53	$53	$53	$53
Non-growth contributed asset value	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Asset Disposals										
Est Cost to dispose of assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Carrying value (DRC) of disposed assets	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0

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

Additional Expenditure Outlays required and not included above	2016 $000	2017 $000	2018 $000	2019 $000	2020 $000	2021 $000	2022 $000	2023 $000	2024 $000	2025 $000
Operations	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
User Comments #2										

Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)

	2016 $000	2017 $000	2018 $000	2019 $000	2020 $000	2021 $000	2022 $000	2023 $000	2024 $000	2025 $000
Forecast Capital Renewal from Forms 2A & 2B	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Forecast Capital Upgrade from Form 2C	$7,852	$7,556	$4,295	$2,130	$53	$53	$53	$53	$53	$53

Appendix D Abbreviations

Abbrev	Description
AAAC	Average annual asset consumption
AM	Asset management
asset management plan	Asset management plan
ARI	Average recurrence interval
ASC	Annual service cost
BOD	Biochemical (biological) oxygen demand
CARPKS	Carparks (abbreviated in table headings only)
C'WAYS	Causeways (abbreviated in table headings only)
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DRC	Depreciated replacement cost
EF	Earthworks/formation
IRMP	Infrastructure risk management plan
K&G	Kerb and gutter (abbreviated in table headings only)
LCC	Life cycle cost
LCE	Life cycle expenditure
LTFP	Long term financial plan
MMS	Maintenance management system
PATHS	Pathways (abbreviated in table headings only)
PCI	Pavement condition index
RAMP	Roads asset management plan
RV	Residual value
SoA	State of the Assets
SS	Suspended solids
vph	Vehicles per hour
WDCRC	Written down current replacement cost

Appendix E Glossary

ANNUAL SERVICE COST (ASC)

1. **Reporting actual cost**
   The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.

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

ASSET

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

ASSET 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 Council's asset base, but may be associated with additional revenue from the new user group, e.g. 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, e.g. 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 Council's asset base, e.g. 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 cash flow 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, e.g. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

INVESTMENT PROPERTY

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

- use in the production or supply of goods or services or for administrative purposes; or
- 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, e.g. road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**
  Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.
- **Reactive maintenance**
  Unplanned repair work that is carried out in response to service requests and management/ supervisory directions.
- **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 Council of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from e.g. the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

NON-REVENUE GENERATING INVESTMENTS

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

OPERATIONS

Regular activities to provide services such as public health, safety and amenity, e.g. 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, e.g. power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

OPERATING EXPENSE

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

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 (e.g. 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, e.g. public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

RISK MANAGEMENT

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

SECTION OR SEGMENT

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

SERVICE POTENTIAL

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

SERVICE POTENTIAL REMAINING

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

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:

- the period over which an asset is expected to be available for use by an entity, or
- 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 *