RURAL CITY OF WANGARATTA

Roads Asset Management Plan

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1 EXECUTIVE SUMMARY

1.1 THE PURPOSE OF THE PLAN

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

This asset management plan details information about road related infrastructure assets, including actions required to provide an agreed level of service in the most cost effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services over a 20-year planning period.

This plan covers those road infrastructure and related assets purposed with providing access by linking residential areas to main distributor and arterial roads. All roads within the City are classified according to a hierarchy which ranks the relative importance of a road within the network. It forms the basis upon which maintenance activities are prioritised.

1.2 ASSET DESCRIPTION

The Road Asset Network comprises:

- Sealed Roads (Pavements and surfaces)
- Unsealed Roads
- Kerb & Channel
- Car Parks
- Paths (Pedestrian Footpaths, Shared Paths & Open Space Paths)

Council is responsible for the majority of roads within the municipality, however there are many roads and other infrastructure assets for which Council has no management responsibility and which may form part of the road network within the Council area. These assets are managed by other road authorities, such as VicRoads, Parks Victoria or the Department of Environment Land Water and Planning (DELWP). Council also has boundary agreements with adjoining shires which outline the responsibilities for the management of these boundary roads.

Excluded from this plan are:

- Road & Foot Bridges and Major & Minor Culverts
- Traffic lights and traffic control assets (roundabouts, signs, traffic islands etc.)

These infrastructure assets have significant value estimated at $446,794,000.

1.3 LEVELS OF SERVICE

Our present funding levels are sufficient to continue to provide existing services at current levels in the medium term, however in the longer term (20yrs) renewal of assets falls behind consumption based on current levels of depreciation.

The main services consequences are:

- Potential degradation of service capability resulting in possible imposition of load limits, detours leading to increased travel times.
- Deterioration of road condition thereby increasing the likelihood of road accidents, claims against Council and reputational damage.

1.4 FUTURE DEMAND

The main demands for new services are created by:

- Population Growth
- Changing Demographics
- Climate Change
- Weather events
- Legislative changes
- Changes in design standards/codes
- Community expectations of higher service levels

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

- Regulating asset use
- Investigating alternative solutions
- Behaviour modification

1.5 LIFECYCLE MANAGEMENT PLAN

WHAT DOES IT COST?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal, upgrade and new assets over the 10-year planning period is $10,462,000 on average per year.

1.6 FINANCIAL SUMMARY

WHAT WE WILL DO

Estimated available funding for this period is $13,410,000 on average per year as per the long term financial plan or budget forecast. This is 128% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long term financial plan can be provided. The emphasis of the Asset Management Plan is to communicate the consequences that this will have on the service provided and risks, so that decision making is “informed”.

PROJECTED OPERATING AND CAPITAL EXPENDITURE

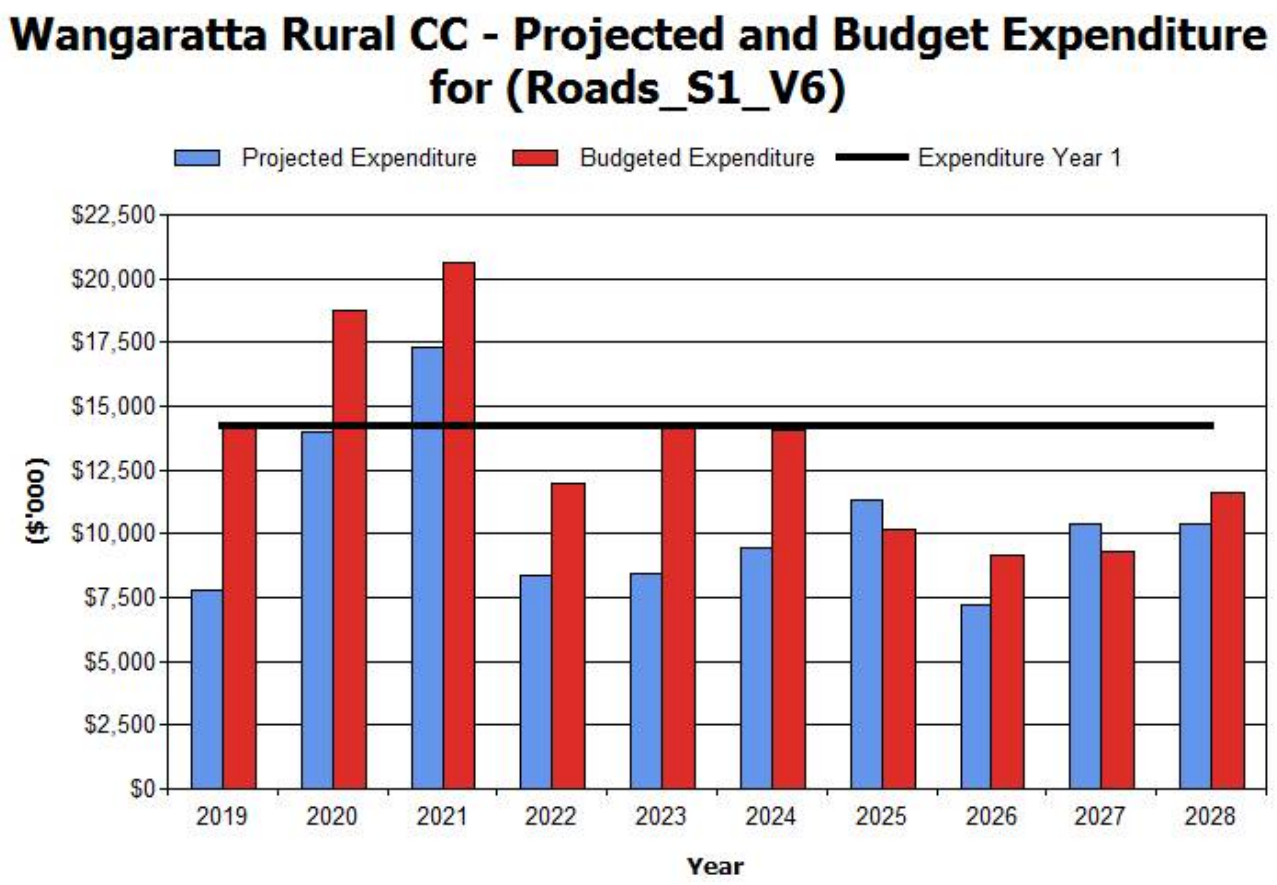


Figure Values are in current (real) dollars.

We plan to provide Road Asset Management services for the following:

- Operation, maintenance, renewal and upgrade of Sealed and Unsealed Roads, Kerb & Channel, Carparks and Paths to meet service levels set in annual budgets.

WHAT WE CANNOT DO

We currently allocate enough funding to sustain these services at the desired standard or to provide all new services being sought. Our present funding levels are sufficient to continue to manage risks in the medium term. However if budget allocations were to be reduced the main risk consequences would be:

- Impaired driveability due to deterioration of road surface
- Road accidents resulting in loss of life and/or damage to property

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

- Maintaining Councils programmed defect and condition inspections
  Maintaining a risk based approach to maintenance and renewal activities

MANAGING THE RISKS

Our present funding levels are sufficient to continue to manage risks in the medium term.
The main risks/consequences are:

- Low confidence in current assessment of asset ages and remaining useful lives which potentially may lead to less than optimal decision-making and 'looseness' in the funding calculation for maintenance and renewals;

- Lack of medium term (10yr) scored, prioritised, planned and costed renewal programs for the asset classes covered by this plan.

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

- Maintaining a risk based approach to maintenance and renewal activities
- Conducting regular condition audits and site inspections to determine the remaining useful life of assets and maintenance requirements. This includes adherence to Australian Standards and best practice notes as produced by IPWEA;
- Continued effort to rationalise collected data and improved processes to ensure data completeness and accuracy;
- Improved training and education of staff to increase awareness and adherence with associated standards, and;
- Request funding for renewals as required and to monitor trends of maintenance requirements and techniques.

1.7 ASSET MANAGEMENT PRACTICES

Our systems to manage assets include:

- TechnologyOne

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, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- 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.

1.8 MONITORING AND IMPROVEMENT PROGRAM

The next steps resulting from this asset management plan to improve asset management practices are:

- Develop a program of regular condition inspections for those asset types not currently subject to condition audits.
- Prioritise the Kerb & Channel network in this process due to the significant renewal expenditure predicted for this asset category in 2020.
- Develop a costed 10 year program which identifies and prioritises specific assets to be programmed for renewal.
- Determine a method of allocating Management and AM systems costs to specific asset categories.

2. INTRODUCTION

2.1 BACKGROUND

This asset management plan communicates the actions required for the responsive management of assets (and services provided from assets), compliance with regulatory requirements, and funding needed to provide the required levels of service over a 20-year planning period.

The asset management plan is to be read in conjunction with the Rural City of Wangaratta planning documents. This should include the Asset Management Policy and Asset Management Strategy where these have been developed along with other key planning documents:

- Other related Asset Management Plans
- Road Management Plan
- Long Term Financial Plan
- Road Hierarchy
- Council Plan 2017-21

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets either directly or indirectly provide or support access across the municipality.

TABLE 2.1: ASSETS COVERED BY THIS PLAN

Asset Category	Dimension	Unit	Replacement Value ($000)
Sealed Roads	684	km	$300,913
Unsealed Roads	1144	km	$93,457
Kerb & Channel	260	km	$26,762
Carparks	29	no.	$3,172
Paths	241	km	$22,490
TOTAL			**$446,794**

2.2 GOALS AND OBJECTIVES OF ASSET OWNERSHIP

This Roads Asset Management Plan (RAMP) aids responsive management of assets (and the services provided from assets), compliance with regulatory requirements and records funding needs to provide the required levels of service over the forward planning period.

The fundamental purpose of a RAMP is to demonstrate good long-term strategic management of roads in the context of:

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

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

- International Infrastructure Management Manual 2015 [1]
- ISO 55000[2]

This asset management plan is prepared under the direction of the Rural City of Wangaratta's vision, mission, goals and objectives.
Our vision is:

Rural City of Wangaratta – Feels Like Home

Relevant goals and objectives and how these are addressed in this asset management plan are:

TABLE 2.2: GOALS AND HOW THESE ARE ADDRESSED IN THIS PLAN

Pillar	Objective	How Pillar and Objectives are addressed in AM Plan
We Are Sustainable	To be economically and environmentally sustainable	Our team will make the best and most efficient use of Council's resources. Our buildings, facilities and assets will be utilised in an efficient and equitable way. Our legislative, governance and compliance requirements will be met. Asset management systems are maintained Our protection of the environment underpins our development, projects and decisions. Our community and recreation facilities are well maintained.
We are established	To create and maintain the facilities and assets that make our Community a safe, connected and enjoyable place to live.	Our infrastructure is developed and maintained based on what we understand is important to the people who live, work and visit here. We will achieve a 90% annual completion rate for our capital project delivery. We will achieve 25% completion of strategic actions within the Asset Management strategy annually. Our road network is monitored to meet the current and future needs of our community and our industries. We will meet 100% compliance with scheduled road inspections. We will meet 90% compliance with defect rectification. Our infrastructure provides community links to recreational, business, services, social and cultural spaces.

The Rural City of Wangaratta will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan prepared in conjunction with this AM Plan. Management of infrastructure risks is covered in Section 6.

2.3 CORE AND ADVANCED ASSET MANAGEMENT

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13

[2] ISO 55000 Overview, principles and terminology

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual[3]. Core asset management is a 'top down' approach where analysis is applied at the system or network level. An 'advanced' asset management approach uses a 'bottom up' approach for gathering detailed asset information for individual assets.

3. LEVELS OF SERVICE

3.1 CUSTOMER RESEARCH AND EXPECTATIONS

[3] IPWEA, 2015, IIMM.

This 'core' asset management plan is prepared to facilitate consultation prior to adoption by Council. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist Council and stakeholders in matching the level of service required, service risks and consequences with the community's ability and willingness to pay for the service.

TABLE 3.1: COMMUNITY SATISFACTION SURVEY LEVELS

Performance Measure	2018		2017	
	Performance Score	Importance Score	Performance Score	Importance Score
Condition of Sealed Local Roads	56	80	56	80
Condition of Unsealed Roads	46	80	46	77
Condition of Streets & Footpaths	58	80	57	76
Parking	52	75	56	70

Community satisfaction information is used in developing the Strategic Plan and in the allocation of resources in the budget.

3.2 LEGISLATIVE REQUIREMENTS

There are many legislative requirements relating to the management of assets. These include:

TABLE 3.2: LEGISLATIVE REQUIREMENTS

Legislation	Requirement
Local Government Act 1989 (Vic)	Sets out role, purpose, responsibilities and powers of local governments including the requirement to prepare a long term financial plan supported by infrastructure and asset management plans for sustainable service delivery.
Road Management Act 2004 (Vic)	Impacts on road and traffic management considerations.
Road Management (General) Regulations 2016	Prescribes certain matters that must be recorded on a Register of Public Roads and provides for the protection of roads and property.
Road Management Act 2004 Code of Practice - Operational	Provides guidance on how operational responsibility for elements of the road reserve is assigned to various road authorities.
Disability Discrimination Act 1992 (Vic)	To plan, provide and redevelop infrastructure, so that it is accessible to persons with a disability as defined under the act.
Occupational Health and Safety Act 2004 (Vic)	Sets out the roles and responsibilities to ensure the health, safety and welfare of persons at work.
Transport Integration Act 2010 (Vic)	Integrates the legislation contained within: Transport (Compliance and Miscellaneous) Act 1983; Road Management Act 2004 and; Road Safety Act 1986 Includes references to the provision and maintenance of community transport infrastructure in the municipal district.

Legislation	Requirement
Road Safety Act 1986 (Vic)	Sets out the general obligations of road users in relation to responsible road use in order to provide for safe, efficient and equitable road access.

3.3 CUSTOMER LEVELS OF SERVICE

Service levels are defined in two measures, customer levels of service and technical levels of service. These are supplemented by organisational measures.

Customer Levels of Service measure how the customer receives the service and whether value to the customer is provided.

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

QUALITY How good is the service … *what is the condition or quality of the service?*

FUNCTION Is it suitable for its intended purpose …. *Is it the right service?*

CAPACITY/USE Is the service over or under used … *do we need more or less of these assets?*

The current and expected customer service levels are detailed in Tables 3.4 and 3.5. Table 3.4 shows the expected levels of service based on resource levels in the current long-term financial plan.

Organisational measures are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor/Poor/Average/Good/Very good.

These Organisational measures provide a balance in comparison to the customer perception that may be more subjective.

TABLE 3.3: CUSTOMER LEVEL OF SERVICE

	Expectation	**Performance Measure Used**	**Current Performance**	**Expected Position in 10 Years based on the current budget.**
Service Objective: Road Network provides all weather access and a safe, comfortable ride to all users				
Quality	Road network provides a safe and comfortable ride	CRMs/month relating to service quality	43 requests/month* (avg for past 12 mth) Unsealed Roads – 23 Sealed Roads – 9 Potholes – 7 Line marking – 1 Sweeping – 3	That customer requests will have consistently trended downwards over time
	Organisational measure	% of roads in very good/good/fair condition in most recent condition survey	90%	90%

	Expectation	Performance Measure Used	Current Performance		Expected Position in 10 Years based on the current budget.
	Confidence levels		Med		Medium
Function	Road network meets the needs of all road users	Customer satisfaction higher than the avg. for Regional Centres**	RCoW	Regional Centres	RCoW
		Sealed Roads	56	54	Higher than Regional Centres
		Unsealed Roads	46	52	Higher than Regional Centres
		Streets & Footpaths	58	59	Higher than Regional Centres
	Organisational measure	% projected avg. 10 year lifecycle costs funded in LTFP	100%		100%
	Confidence levels		High		Medium
Capacity and Use	Road network provides reasonable access across the municipality				
	Organisational measure	Traffic count data confirms appropriate use in accordance with road hierarchy	Data collection currently ad hoc		Program developed and implemented
	Confidence levels		Low		Medium

* RCoW CRMS April 2018 – April2019
** Local Govt Satisfaction Survey 2018

3.4 TECHNICAL LEVELS OF SERVICE

Supporting the customer service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities to best achieve the desired customer outcomes and demonstrate effective performance.

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

- Operations – the regular activities to provide services
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade/New – 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 3.5 shows the technical levels of service expected to be provided under this AM Plan. The 'Desired' position in the table documents the position being recommended in this AM Plan.

TABLE 3.4: TECHNICAL LEVELS OF SERVICE

Service Attribute	Service Activity Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **
Operations				
	Road Assets are safe for users' needs	Regular programmed condition surveys	Sealed All 5 yrs Unsealed All 5 yrs Kerb & Channel 5 yrs Paths 6 yrs	No plan to change inspection frequencies (see RMP)
		Regular programmed defect inspection in line with RMP	Link 3 mths Collector 6 mths Access 12 mths Limited Acc 12mths	No plan to change inspection frequencies (see RMP)
Maintenance				
	Respond to maintenance CARs	Works completed within adopted timeframes	Not currently monitored	>85% completed within nominated timeframes
Renewal	Ensure renewal activities are undertaken at the optimum time in the asset's lifecycle to provide best	% of assets at a condition of 3 or better Use prioritisation criteria to score and identify highest priority projects	90% Prioritisation criteria not yet established for renewal projects	Maintain current service level Establish weighted prioritisation criteria and score all proposed projects.

[4] IPWEA, 2015, IIMM, p 2|28.

Service Attribute	Service Activity Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **
	value for money			
Upgrade/New				
	Prioritise construction of upgraded and new assets to meet increased demand in accordance with funding constraints.	Use prioritisation criteria to score and identify highest priority projects	Weighted prioritisation criteria currently used to identify rural road sealing projects	Maintain current service level

Note: * Current activities and costs (currently funded

** Desired activities and costs to sustain current service levels and achieve minimum life cycle costs (may not be currently funded)

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time. Review and establishment of the agreed position which achieves the best balance between service, risk and cost is essential.

4. FUTURE DEMAND

4.1 DEMAND DRIVERS

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

4.2 DEMAND FORECASTS

The present position and projections for demand drivers that may impact future service delivery and use of assets were identified and are documented in Table 4.3.

4.3 DEMAND IMPACT ON ASSETS

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

TABLE 4.3: DEMAND DRIVERS, PROJECTIONS AND IMPACT ON SERVICES

Demand drivers	Present position	Projection	Impact on services
Population Growth 2016 – 2028	28,310*	30,721	Moderate demand for increased and improved services
Ageing population	23% aged 65 and over	Expected to increase over the plan period	May result in an increased demand on the pathway network.
Increased freight kilometres travelled and the use of Higher Productivity Vehicles	The Wangaratta region currently experiences significant levels of freight traffic. Nationally, 'Rest of State' (i.e. excl. Capital Cities and Interstate freight movement) has increased 60%** in the period 2000 - 2017.	Estimates for the period 2018 – 2030 indicate this figure will increase a further 20%**. Over this same period freight operators will continue to update their fleet with Higher Productivity Vehicles with higher axle loadings	The projected increase in freight volumes and the move to vehicles with higher axle loadings will put Council's road infrastructure under pressure and may result in shorter useful lives
Climate Change	Climate change will see an increase risk of extreme weather events including storm events, flooding, sea level rise and fire events	It is expected that climate change will intensify in the medium to long term resulting in an increased number of extreme weather events	There will be an increase in structural damage caused by extreme events and an increase in deterioration rates of the network
Changes to Design Standard/Codes	RCoW currently constructs and maintains its infrastructure assets in accordance with all adopted standards.	It is expected that ongoing changes and developments in standards will result in higher construction and maintenance costs	As changes occur RCoW may need to re-appraise unit costs to ensure budgets are sufficient to meet adopted standards.
Vehicle automation	There is currently little to no use of vehicle automation on the road network across the municipality	It is expected that by 2050 that automated vehicles may account for a significant proportion of the traffic across the network	This may require upgrades to existing infrastructure to accommodate autonomous vehicles

* Source ABS 2016 Census

**Source Bureau of Infrastructure, Transport and Regional Economics (BITRE), 2010, *Road Freight Estimates and Forecasts in Australia: Interstate, Capital Cities and Rest of State*, Report 121, Canberra Act

4.4 DEMAND MANAGEMENT PLAN

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

Opportunities identified to date for demand management are shown in Table 4.4. Further opportunities will be developed in future revisions of this asset management plan.

TABLE 4.4: DEMAND MANAGEMENT PLAN SUMMARY

Demand Driver	Impact on Services	Demand Management Plan
Population Growth	Significantly increased demand for improved and additional services	Monitor population growth through census data and traffic counts and use as input into developing future works programs
Ageing population	The overall increase in growth will see an increase in usage on all asset types. An increase in the elderly population may also increase demand on the pathway network (including footbridges)	Monitor population growth with a focus on age trends through census data. Ensure all new works are undertaken in accordance with DDA requirements to allow for usage by persons of all abilities
Increased freight kilometres travelled and the use of Higher Productivity Vehicles	The projected increase in freight volumes and the move to vehicles with higher axle loadings will put Council's road infrastructure under pressure and may result in shorter useful lives.	Develop designated freight networks utilising the National Heavy Vehicle Regulator (NHVR) and encourage freight to arterial roads where possible. Monitor through NHVR database and continued traffic counts
Climate Change	There will be an increase of structural damage caused by extreme events and an increase in deterioration rates of the network	Investigate the development of a Climate Change Adaptation Policy/Strategy
Changes to Design Standard/Codes	As changes occur RCoW may need to re-appraise unit costs to ensure budgets are sufficient to meet adopted standards.	Monitor and assess proposed changes for impacts on construction and maintenance costs.
Vehicle automation	This may require upgrades to existing infrastructure to accommodate autonomous vehicles	Monitor ongoing developments in this area and identify opportunities for Council to respond to changes as and where necessary.

4.5 ASSET PROGRAMS TO MEET DEMAND

The new assets required to meet demand can be acquired, donated or constructed. Additional assets are discussed in Section 5.5. The summary of the cumulative value of additional asset is shown in Figure 1.

FIGURE 1: UPGRADE AND NEW ASSETS TO MEET DEMAND – (CUMULATIVE)

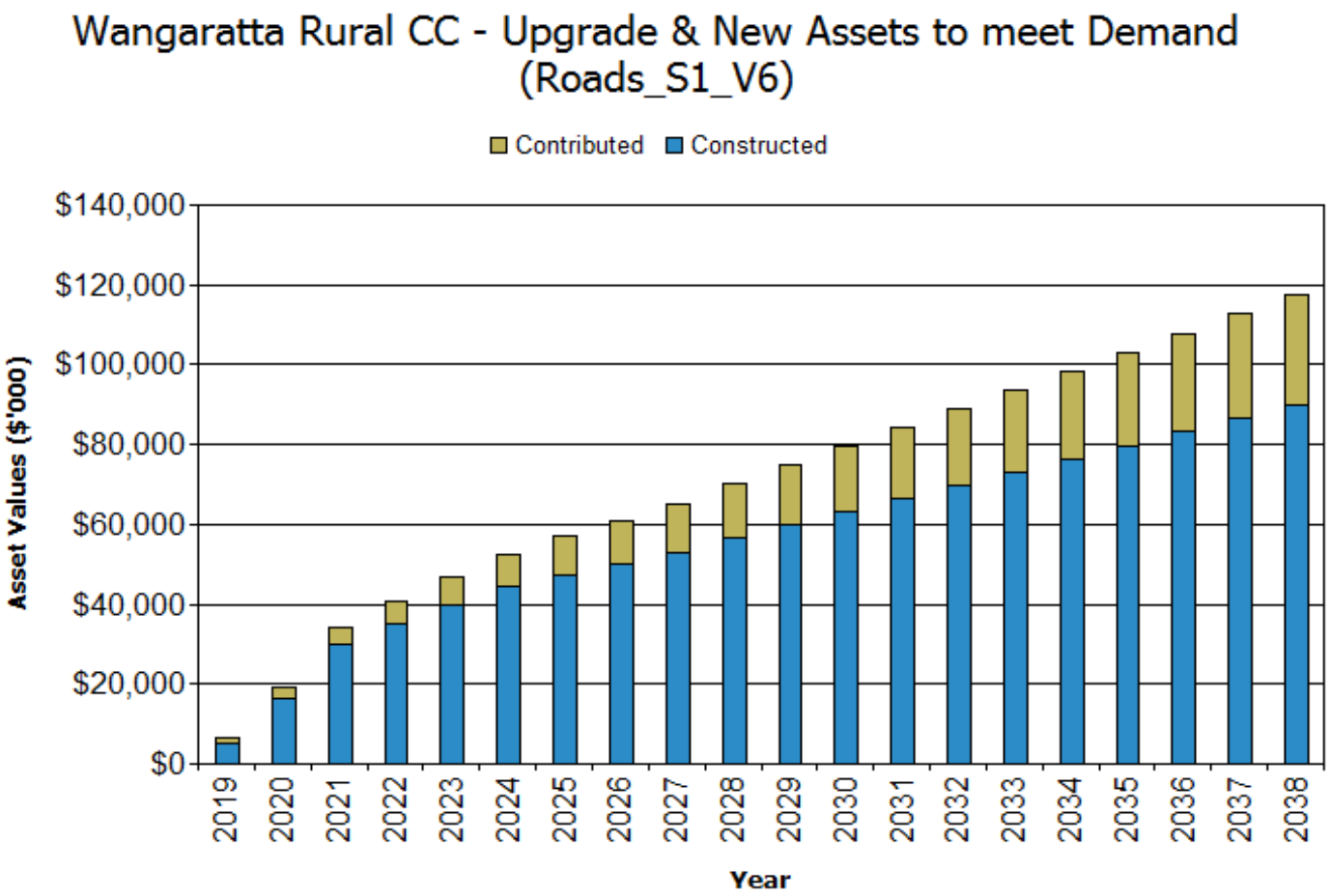


Figure Values are in current (real) dollars.

Acquiring these new assets will commit 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 for inclusion in the long term financial plan further in Section 5.

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

5.1 BACKGROUND DATA

5.1.1 PHYSICAL PARAMETERS

The assets covered by this asset management plan are shown in Table 2.1 and include sealed and unsealed roads, kerb & channel, carparks and paths.

The age profile of the assets included in this AM Plan and shown in Figure 2, are in most cases estimates only. Many assets were acquired between 30 and 60 years ago and detailed records of construction and acquisition are not available.

FIGURE 2: ASSET AGE PROFILE

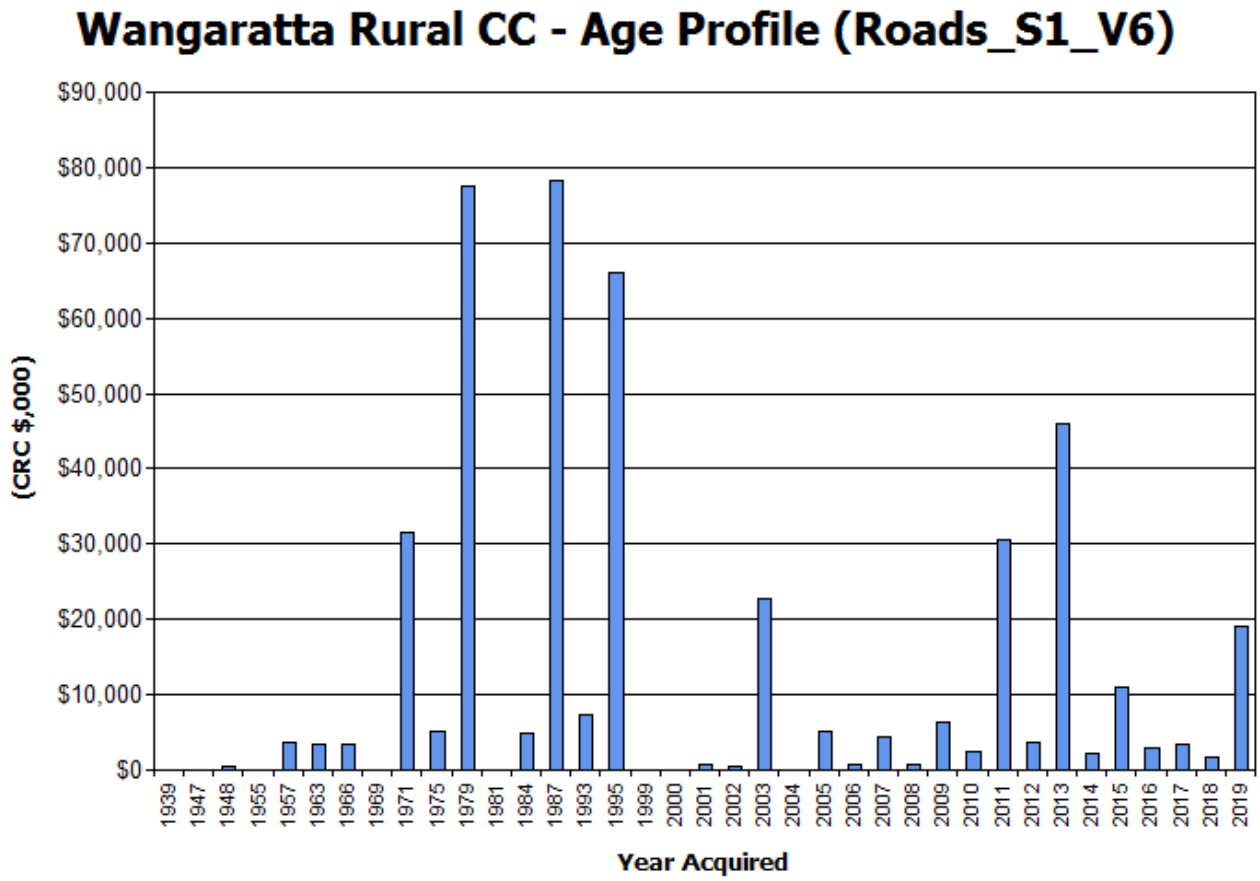


Figure Values are in current (real) dollars.

5.1.2 ASSET CAPACITY AND PERFORMANCE

Assets are generally provided to meet design standards where these are available. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

TABLE 5.1.2: KNOWN SERVICE PERFORMANCE DEFICIENCIES

Location	Service Deficiency
Sandford Road	Upgrades to improve heavy vehicle access to industrial precinct
Benalla – Whitfield Road	Sealing of unsealed link road to improve safety & enhance tourism

5.1.3 ASSET CONDITION

Condition is monitored through a rolling program of condition inspections. However not all asset types covered by this plan are included in this program. This is illustrated in Fig. 3 below, which shows assets which are not rated for condition.

The condition profile of our assets is shown in Figure 3.

FIG 3: ASSET CONDITION PROFILE

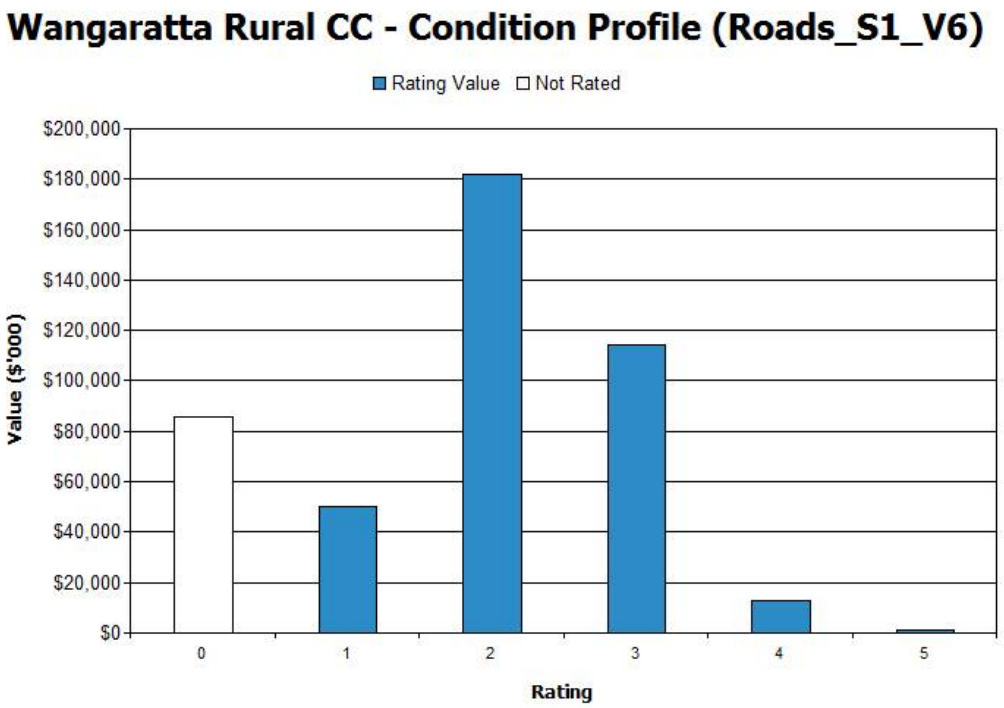


Figure Values are in current (real) dollars.

Currently the network is generally in fair to good condition with the majority of assets ranked as either condition 1, 2 or 3, with a relatively smaller number of assets approaching end of life. Road Formation (earthworks) are not currently assessed for condition as this asset type is generally considered not to deteriorate significantly over time. It will be important to monitor the deterioration of the network asset condition as the assets in condition 3 continue to deteriorate. Those assets rated at condition 5 will need to be assessed for either renewal or disposal should they no longer be required. Confidence is lowest in the condition of Council's kerb & channel assets. Funding has been approved for a condition survey of this asset class in the forthcoming financial year.

Condition is measured using a 1 – 5 grading system[5] as detailed in Table 5.1.3.

TABLE 5.1.3: SIMPLE CONDITION GRADING MODEL

Condition Grading	Description of Condition
1	**Very Good**: only planned maintenance required
2	**Good**: minor maintenance required plus planned maintenance
3	**Fair**: significant maintenance required

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

4	**Poor**: significant renewal/rehabilitation required
5	**Very Poor**: physically unsound and/or beyond rehabilitation

5.2 OPERATIONS AND MAINTENANCE PLAN

Operations include regular activities to provide services such as public health, safety and amenity, e.g. cleaning, street sweeping, utilities costs 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, e.g. road patching.

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.

Maintenance expenditure is shown in Table 5.2.1.

TABLE 5.2.1: MAINTENANCE AND OPERATIONS EXPENDITURE TRENDS

Year	Maintenance Budget $000
2019	$2540
2020	$2577
2021	$2649

Maintenance expenditure levels are considered to be adequate to meet projected service levels. Where maintenance expenditure levels are such that they will result in a lesser level of service, the service consequences and service risks have been identified and s highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

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 4. Note that all costs are shown in current 2019 dollar values (i.e. real values).

FIGURE 4: PROJECTED OPERATIONS AND MAINTENANCE EXPENDITURE

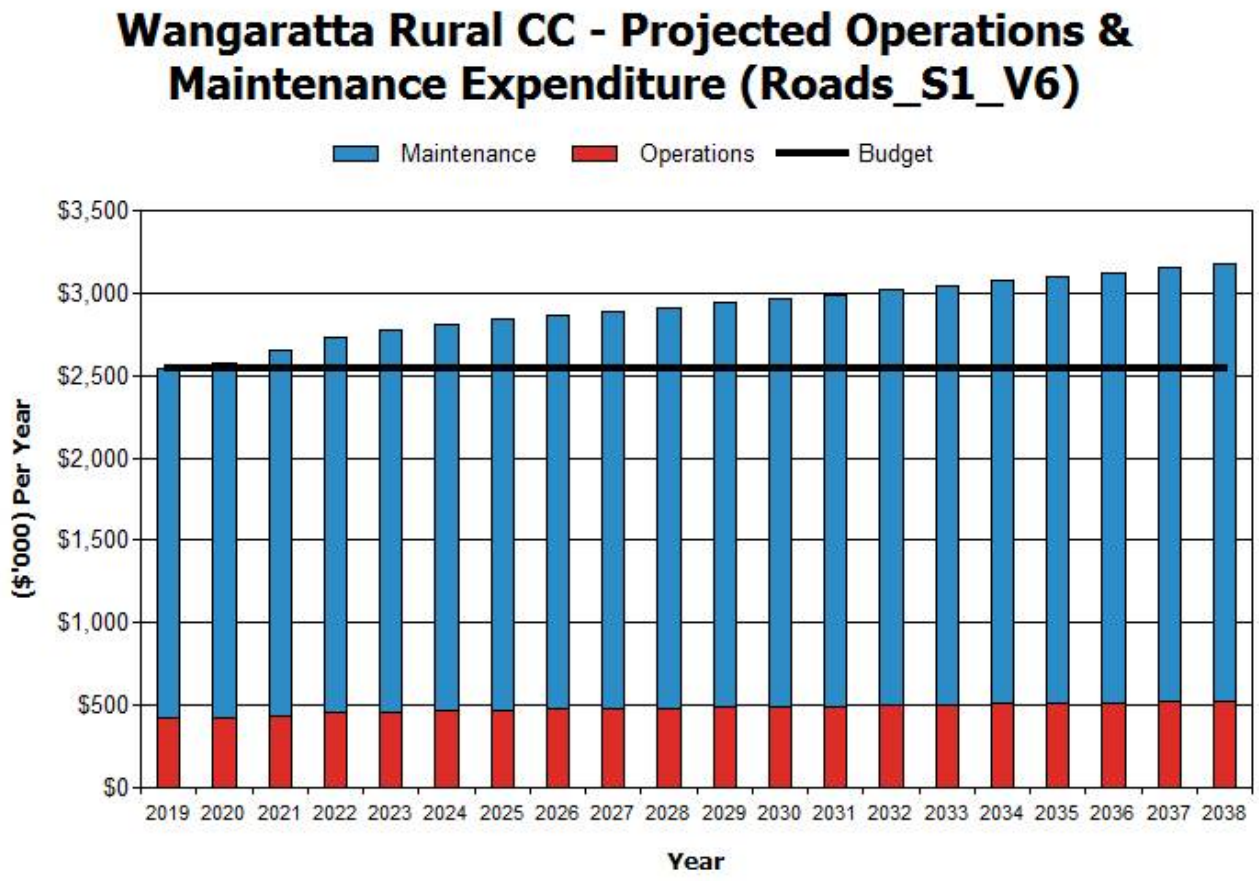


Figure Values are in current (real) dollars.

The above graph highlights a need for Council to increase both maintenance and operations budgets in the future to keep up with asset growth and corresponding expenditure needs.

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 7.

5.3 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 service potential. Work over and above restoring an asset to original service potential is considered to be an upgrade/expansion or new work expenditure resulting in additional future operations and maintenance costs.

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, or

- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- 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 is used for this asset management plan.

5.3.1 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. widening of busy road), or
- 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 high use and subsequent impact on users would be greatest,
- Have the highest average age relative to their expected lives,
- Have high operational or maintenance costs, and
- Have replacement with a modern equivalent asset that would provide the equivalent service at a savings.[7]

Weighted renewal and prioritisation criteria have been developed for upgrade projects i.e. sealing of rural roads however this methodology of ranking projects has not been extended to renewal at this stage.

5.3.2 SUMMARY OF FUTURE RENEWAL AND REPLACEMENT EXPENDITURE

Projected future renewal and replacement expenditures are forecast to increase over time when the asset stock increases. The expenditure is required is shown in Fig 5. Note that all amounts are shown in current (real) dollars.

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

[6] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

[7] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

FIG 5: PROJECTED CAPITAL RENEWAL AND REPLACEMENT EXPENDITURE

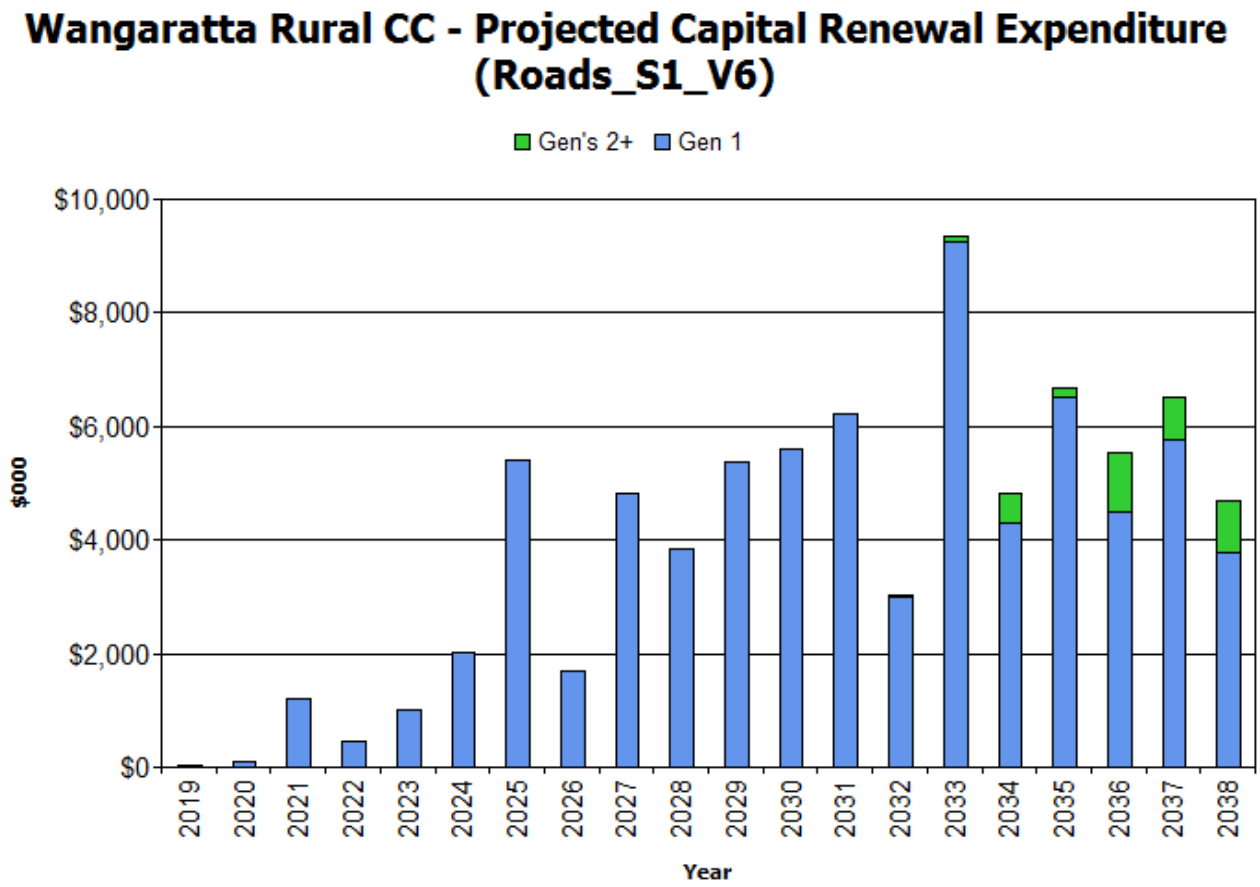


Figure Values are in current (real) dollars.

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

Renewals and replacement expenditure in the capital works program will be accommodated in the long term financial plan. This is further discussed in Section 7.

5.4 CREATION/ACQUISITION/UPGRADE PLAN

New works are those that create a new asset that did not previously exist, or works which will 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. These additional assets are considered in Section 4.4.

5.4.1 SELECTION CRITERIA

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

TABLE 5.4.1: NEW ASSETS PRIORITY RANKING CRITERIA

Criteria	Scoring
Road Hierarchy	Link Road 12 Points Collector Road 8 Points Access Road 4 Points Limited Access Road 0 Points
Total Number of Vehicles per Day	0.1 Points / Vehicle
Number of Heavy Vehicles per Day	0.5 Points / Heavy Vehicle
Number of rural properties (potential houses)	2 Points / Property
Destination • School or Kindergarten • Public gathering place, e.g. Public Hall or Cemetery • Tourist destination, e.g. Cellar Door or Cafe	School or Kindergarten 12 Points Public Gathering Place 8 Points Tourist Destination 4 Points
Request to seal road	1 Point / Road

5.4.2 SUMMARY OF FUTURE UPGRADE/NEW ASSETS EXPENDITURE

Projected upgrade/new asset expenditures are summarised in Fig 6. The projected upgrade/new capital works program is shown in Appendix B. All amounts are shown in real values.

FIG 6: PROJECTED CAPITAL UPGRADE/NEW ASSET EXPENDITURE

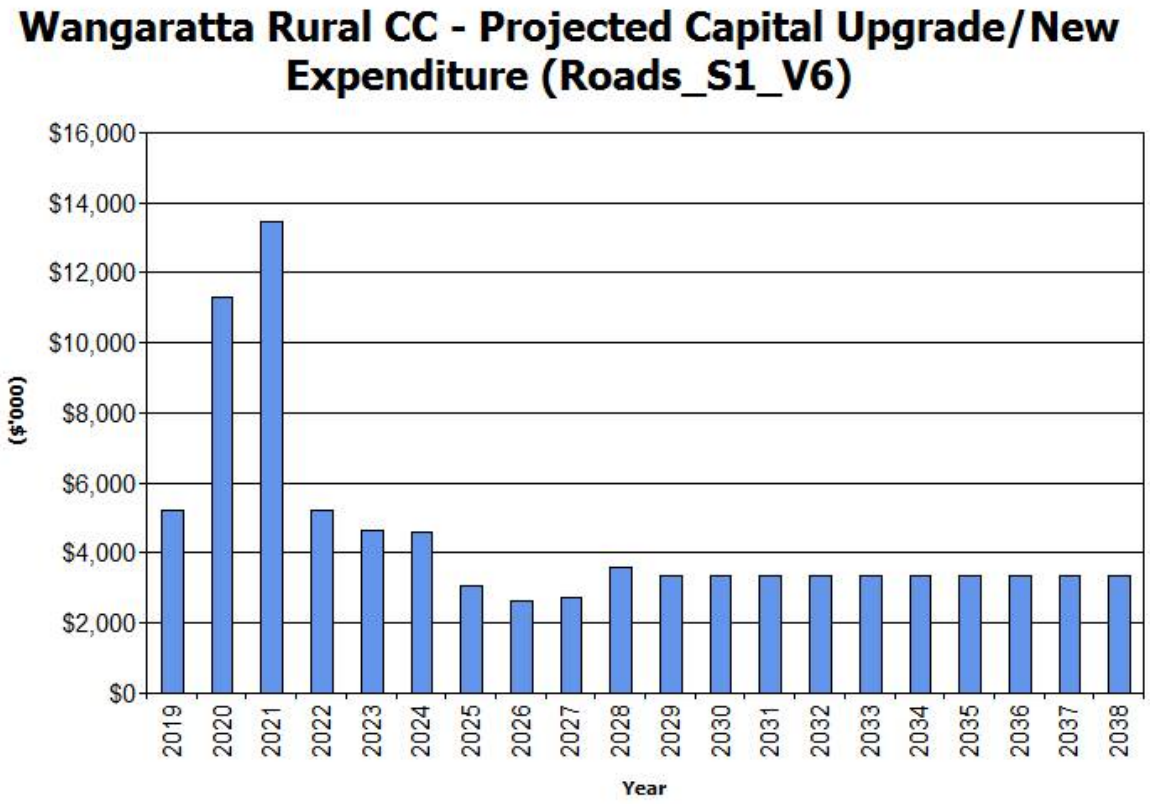


Figure Values are in current (real) dollars.

Expenditure on new assets and services in the capital works program will be accommodated in the long term financial plan but only to the extent of the available funds

When consideration is given to the acquisition of new assets, the lifetime cost of those assets must be well understood. The operations and maintenance costs attributable to those assets must be identified and funded through the budget process.

5.4.3 SUMMARY OF ASSET EXPENDITURE REQUIREMENTS

The financial projections from this asset plan are shown in Fig 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are shown in real values.

The bars in the graphs represent the anticipated budget needs required to achieve lowest lifecycle costs, the budget line indicates what is currently available. The gap between these informs the discussion on achieving the balance between services, costs and risk to achieve the best value outcome.

FIG 7: PROJECTED OPERATING AND CAPITAL EXPENDITURE

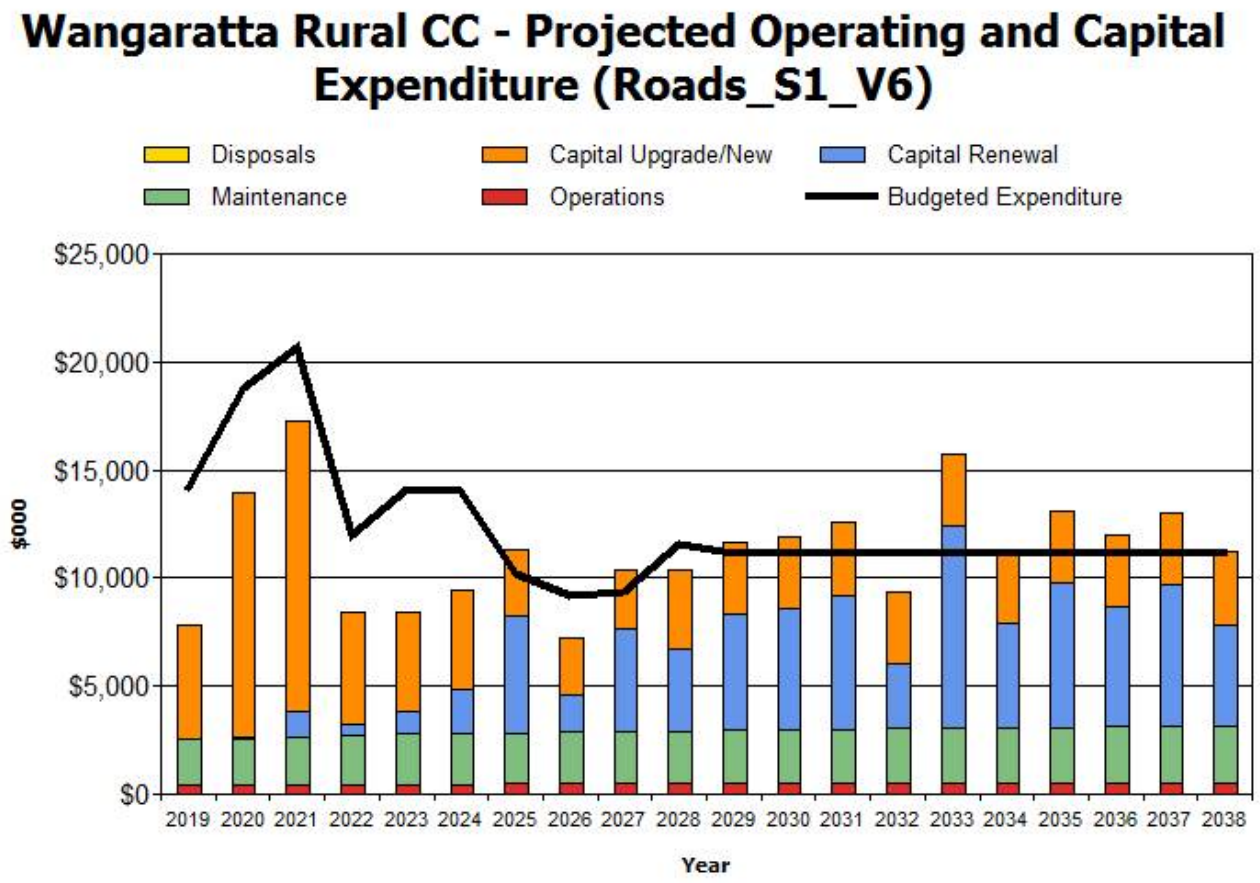


Figure Values are in current (real) dollars.

5.5 DISPOSAL PLAN

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Road assets are rarely disposed of, except in the case where a road is considered to be no longer required for access purposes and there is interest in acquiring the land for private use. Disposal of road assets generally relates to unconstructed road reserves and rarely results in physical changes on the ground. At present there are no road assets being considered for disposal.

6. RISK MANAGEMENT PLAN

The purpose of infrastructure risk management is to document the results and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2009 Risk management – Principles and guidelines.

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.

Council, through the process of updating its Corporate Risk Register will seek to understand, define and put in place strategies to manage identified infrastructure risks.

Risk Management is defined in ISO 31000:2009 as: 'coordinated activities to direct and control with regard to risk'[8].

6.1 CRITICAL ASSETS

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Similarly, critical failure modes are those which have the highest consequences.

Critical assets have been identified and their typical failure mode and the impact on service delivery are as follows:

TABLE 6.1 CRITICAL ASSETS

Critical Asset(s)	Failure Mode	Impact
Link Roads	Deterioration of surface and/or pavement	Reduction in service capability resulting in potential detours, load limits, diversions and increased travel times.
Collector Roads	Deterioration of surface and/or pavement	Reduction in service capability resulting in potential detours, load limits, diversions and increased travel times.
Car Parks	Deterioration of surface and/or pavement	Pedestrian fall resulting in personal injury
A road that is the only access to a dwelling or business, for emergency services, that is impassable for extended periods	Structural failure	Adverse Public Health and Safety outcomes.

By identifying critical assets and failure modes investigative activities, condition inspection programs, maintenance and capital expenditure plans can be targeted at the critical areas.

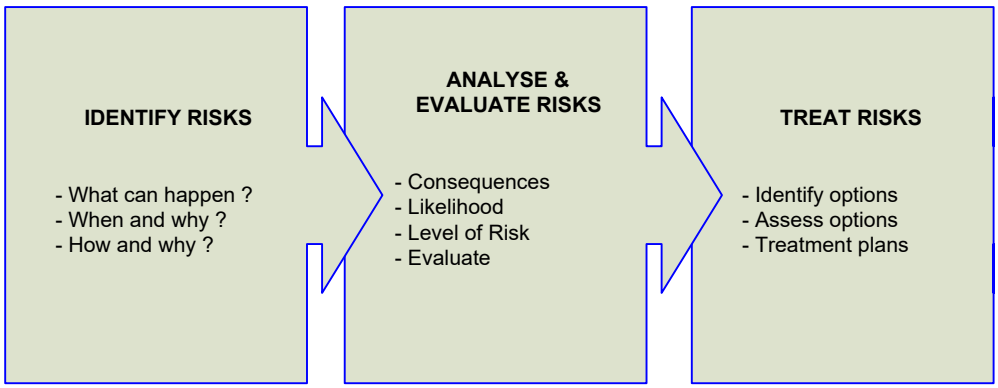
[8] ISO 31000:2009, p 2

6.2 RISK ASSESSMENT

The risk management process used in the development of this asset management plan is shown in Figure 6.2.

The fundamentals of the risk management process have been formed from the International Standard ISO 31000:2009 Risk Management - Principles and Guidelines, and the process has been designed to provide a logical method for the identification, analysis and treatment of risk.

FIG 6.2 RISK MANAGEMENT PROCESS – ABRIDGED



The risk assessment process includes the:

- identification of risks;
- consideration of the likelihood of the risk event occurring and the consequences should the event occur;
- allocation of a risk rating;
- evaluation of the risk; and
- development of a risk treatment plan for non-acceptable risks.

In the development of this management plan a risk assessment was completed to identify the risks likely to impact the Roads Asset Group.

Risks that were identified as critical to the Infrastructure Risk Management Plan are shown in Table 6.2. These risks will be addressed and treated through actions generated by the Roads Asset Management Plan.

TABLE 6.2: CRITICAL RISKS AND TREATMENT PLANS

Service or Asset at Risk	Risk Description
Road Network	A failure to understand the current condition of existing infrastructure will result in an unsustainable fiscal position and consequent financial or service level impacts to the community.
Road Network	Poorly maintained Council assets may result in property damage, injury or death of a member of the public or staff member.
A road that is the only access to a dwelling or business for emergency services and is impassable for extended periods	Adverse public health & safety outcomes

6.3 INFRASTRUCTURE RESILIENCE APPROACH

The resilience of our critical infrastructure is vital to our customers and the services we provide. To adapt to changing conditions and grow over time we need to understand our capacity to respond to possible disruptions and be positioned to absorb disturbance and act effectively in a crisis to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity and crisis leadership.

Our current measure of resilience is shown in Table 6.3 which includes the type of threats and hazards, resilience assessment and identified improvements and/or interventions.

TABLE 6.3: RESILIENCE

Threat / Hazard	Resilience (L, M or H)	Improvements / Interventions
Extreme Weather Event	Medium	Ensure Council's Municipal Emergency Management Plan remains current and covers all reasonably foreseeable potential emergency situations.
Climate Change	Low	No specific strategic documents (Policy, Strategy or Plan) have been developed to address the effects of climate change on the RCoW, as identified in the DELWP "Climate Change Adaptation Governance Assessment", 2017. [1]

6.4 SERVICE AND RISK TRADE-OFFS

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

6.4.1 WHAT WE CANNOT DO

- Currently there are no identified activities that Council believes it will be unable to undertake in the medium term.

6.4.2 SERVICE TRADE-OFF

Identified operations and maintenance activities and capital projects can be undertaken with current funding however a reduction in funding may maintain or create service consequences for users. These include:

- Reduced capacity
- Diversions and increased travel times

6.4.3 RISK TRADE-OFF

Trade-offs that may result from a reduction in funding for operations and maintenance activities and capital projects may include:

- Diminished asset lifecycles
- Increased lifecycle cost

These actions and expenditures are considered in the projected expenditures, and where developed are included in the Risk Management Plan.

7. 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.

7.1 FINANCIAL STATEMENTS AND PROJECTIONS

7.1.1 ASSET VALUATIONS

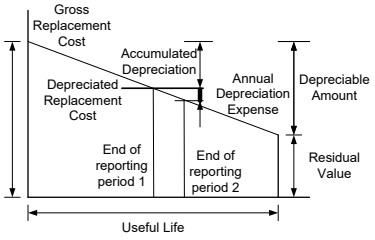
The best available estimate of the value of assets included in this Asset Management Plan are shown below. Assets are valued at current replacement cost.

Gross Replacement Cost $446,794,000

Depreciable Amount $446,794,000

Written Down Value $221,861,000

Annual Average Asset Consumption $8,846,000



7.1.2 SUSTAINABILITY OF SERVICE DELIVERY

Two 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, and
- medium term budgeted expenditures/projected expenditure (over 10 years of the planning period).

ASSET RENEWAL FUNDING RATIO

The Asset Renewal Funding Ratio is the most important indicator and indicates that over the next 20 years of the forecasting that we expect to have 128% of the funds required for the optimal renewal and replacement of assets.

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. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is $4,812,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is $7,996,000 on average per year giving a 10 year funding surplus of $2,757 per year.

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.

7.1.2 PROJECTED EXPENDITURES FOR LONG TERM FINANCIAL PLAN

Table 7.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in 2019 real values.

TABLE 7.1.2: PROJECTED EXPENDITURES FOR LONG TERM FINANCIAL PLAN ($000)

Year	Operations **($000)**	Maintenance **($000)**	Projected Capital Renewal **($000)**	Capital Upgrade/ New **($000)**	Disposals **($000)**
2019	$421	$2,119	$19	$5,237	$0
2020	$427	$2,150	$85	$11,318	$0
2021	$439	$2,210	$1,203	$13,450	$0
2022	$453	$2,280	$461	$5,198	$0
2023	$459	$2,311	$1,026	$4,644	$0
2024	$465	$2,340	$2,028	$4,610	$0
2025	$471	$2,368	$5,397	$3,051	$0
2026	$475	$2,389	$1,689	$2,658	$0
2027	$478	$2,408	$4,806	$2,715	$0
2028	$482	$2,428	$3,833	$3,616	$0

7.2 FUNDING STRATEGY

Funding for assets is provided from the budget and long term financial plan.

The financial strategy of the Rural City of Wangaratta determines how funding will be provided, whereas the asset management plan communicates how and when this will be spent, along with the service and risk consequences of differing options.

7.3 VALUATION FORECASTS

Asset values are forecast to increase as additional assets are commissioned and brought into service

Additional assets will generally add to the operations and maintenance needs in the longer term, as well as the need for future renewal. Additional assets will also add to future depreciation forecasts.

7.4 KEY ASSUMPTIONS MADE IN FINANCIAL FORECASTS

This section details the key assumptions made in presenting the information contained in this asset management plan. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan are:

TABLE 7.4: KEY ASSUMPTIONS

	Assumptions
1.	A growth rate of 0.3% has been applied for the period of this plan. These rates are considered to be conservative and may increase due to stronger than anticipated growth in new developments.
2.	A split of 80/20 has been assumed between planned and reactive maintenance.
3.	RCoW's asset condition scoring system, which uses a scale of 0 – 10, has been normalised to 1 – 5 to conform to the requirements of the model.
4.	All assets covered by this plan are assumed to have no residual value at end of their useful life - (Management Reporting Coordinator).
5.	Acquisition dates are generally unknown. However this is a parameter that is required for the modelling to run. Assumed acquisition dates used in this model have been arrived at by subtracting the difference between Useful Life and Remaining Useful Life from current year, e.g. Useful Life (80yrs) - Remaining UL (55yrs) = Expended Life (25yrs), 2019 - 25 = 1994 (Estimated Acquisition Date). Allen Mapstone, Director Strategic Asset Management IPWEA Australasia & NAMS Canada confirmed this calculated value is an appropriate substitute when actual dates are unknown. All road formation assets have been assigned an acquisition date of 1995 in TechOne. This results in the anomaly that many pavement assets appear to be older than the formation they are constructed upon. For the purposes of this plan formation has been assigned the same age as the associated pavement asset. This does not affect the projected expenditures as the 200 year expected life of Formation pushes any renewals outside the 20yr timeframe of this plan.
6.	LTFP & SRP expenditure figures are from D18/31863(v2) and are most up to date figures available - (Financial Coordinator)
7.	It is anticipated there will be no material change in service levels
8.	Asset data is reasonably complete and physical attributes are reasonably accurate.
9.	Estimates of remaining useful life used in this plan are theoretical values derived from a linear degradation of condition over time.
10.	Budget figures for Renewal and Upgrade/New from LTFP and SRP. Renewal figures for 2029-38 are the average of previous 10yrs LTFP figs. Upgrade/New figures for the

Assumptions	
	same period are an average of the previous 5yrs as the very high spends in the early years of the plan would have skewed the projections.

7.5 FORECAST RELIABILITY AND CONFIDENCE

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale[9] in accordance with Table 7.5.

TABLE 7.5: DATA CONFIDENCE GRADING SYSTEM

Confidence Grade	Description
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 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 AM Plan is considered to be C Uncertain.

8. PLAN IMPROVEMENT AND MONITORING

8.1 STATUS OF ASSET MANAGEMENT PRACTICES[10]

8.1.1 ACCOUNTING AND FINANCIAL DATA SOURCES

- Rural City of Wangaratta Long Term Financial Plan

[9] IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

[10] ISO 55000 Refers to this the Asset Management System

- Rural City of Wangaratta Budget 2018/19
- TechnologyOne CS Production Database

8.1.2 ASSET MANAGEMENT DATA SOURCES

- TechnologyOne CS Production Database

8.2 IMPROVEMENT PLAN

The asset management improvement plan generated from this asset management plan is shown in Table 8.1.

TABLE 8.1: IMPROVEMENT PLAN

Task No	Task	Responsibility	Resources Required	Timeline
1	Approximately half RCoW's seal assets have not been commissioned in TechOne. The assets exist in the system and their physical attributes are recorded however there are no financial records associated with them. To enable these assets to be included in the modelling estimated values have been applied. These assets should be commissioned recognised through this year's revaluation process.	Finance	Internal	Oct 2019
2	Documented ranking and prioritisation criteria needs to be established for proposed renewal and upgrade/new projects. Programs of works should then be developed for at least the next 5 yrs based on this methodology.	Asset Planning	Internal	November 2019
3	Completion of the Capitalisation and Asset Handover process preferably with documented work flows in WIM which will ensure all new assets are captured and all required attributes recorded.	Asset Planning, Delivery and Finance	Internal	July 2019
4	An Infrastructure Risk Management Plan and Risk Register be developed in order to; • identify risks to RCoW that may impact on the delivery of services from infrastructure, • select credible risks for detailed analysis, • prioritise risks, • identify risks requiring treatment by management action, • develop risk treatment plans identifying the tasks required to manage the risks, the officer/authority responsible for each task, the resources required and the due	Asset Planning and Governance	Internal	June 2020

Task No	Task	Responsibility	Resources Required	Timeline
	completion date.			
5	20% of Council's asset data by value to be reviewed for completeness and accuracy each year. This activity should form part of the revaluation process to ensure both physical attributes and financial records are accurate.	Asset Planning and Finance	Internal	Ongoing
6	Community consultation plan developed on desired service levels for the roads asset group.			

8.3 MONITORING AND REVIEW PROCEDURES

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

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

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

8.4 PERFORMANCE MEASURES

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

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into the long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and corporate structures take into account the 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 Strategic Plan and associated plans

9. 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, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
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- IPWEA, 2012 LTFP Practice Note 6 PN Long Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- Rural City of Wangaratta Council Plan 2017-21
- Rural City of Wangaratta Annual Budget 2018/19

10. APPENDICES

Appendix A Projected 10 year Capital Renewal and Replacement Works Program

Appendix B Projected 10 year Capital Upgrade/New Works Program

Appendix C LTFP Budgeted Expenditures Accommodated in AM Plan

APPENDIX A PROJECTED 10-YEAR CAPITAL RENEWAL AND REPLACEMENT WORKS PROGRAM

Projected Capital Renewals Program $(000)											
	2019	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Grand Total**
Kerb and Channel		$51	$17		$82		$158		$112		$420
Paths	$19		$477	$3	$17	$426	$1,016	$191	$208	$124	$2,482
Road Seal		$34	$205	$391	$526	$1,308	$2,258	$1,498	$2,761	$2,589	$11,569
Sealed Pavement									$29		$29
Unsealed Road Pavement			$504	$67	$401	$294	$1,965		$1,696	$1,120	$6,046
Grand Total	$19	$85	$1,203	$461	$1,026	$2,028	$5,397	$1,689	$4,806	$3,833	$20,546

APPENDIX B PROJECTED UPGRADE/EXP/NEW 10-YEAR CAPITAL WORKS PROGRAM

Projected Capital Upgrade/New Expenditure		
Category	**Year**	**Value***
Roads	2019	$5,237
Roads	2020	$11,318
Roads	2021	$13,450
Roads	2022	$5,198
Roads	2023	$4,644
Roads	2024	$4,610
Roads	2025	$3,051
Roads	2026	$2,658
Roads	2027	$2,715
Roads	2028	$3,616
Roads	2029	$3,330
Roads	2030	$3,330
Roads	2031	$3,330
Roads	2032	$3,330
Roads	2033	$3,330
Roads	2034	$3,330
Roads	2035	$3,330
Roads	2036	$3,330
Roads	2037	$3,330
Roads	2038	$3,330
*all dollar values in ($'000)'s		

APPENDIX C BUDGETED EXPENDITURES ACCOMMODATED IN LTFP

NAMS.PLUS3 Asset Management — Wangaratta Rural CC

Roads_S1_V6 — Asset Management Plan

First year of expenditure projections **2019** (financial yr ending)

Roads

Asset values at start of planning period

Current replacement cost	$446,794	(000)	Calc CRC from Asset Register: $446,794 (000)
Depreciable amount	$446,794	(000)	This is a check for you.
Depreciated replacement cost	$221,861	(000)	
Annual depreciation expense	$8,846	(000)	

Operations and Maintenance Costs for New Assets

	% of asset value
Additional operations costs	0.09%
Additional maintenance	0.47%
Additional depreciation	1.98%

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 **2019** values

Financial year ending	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
	$000	$000	$000	$000	$000	$000	$000	$000	$000	$000
Expenditure Outlays included in Long Term Financial Plan (in current $ values)										
Operations										
Operations **budget**	$421	$421	$421	$421	$421	$421	$421	$421	$421	$421
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	$421	$421	$421	$421	$421	$421	$421	$421	$421	$421
Maintenance										
Reactive maintenance **budget**	$424	$424	$424	$424	$424	$424	$424	$424	$424	$424
Planned maintenance **budget**	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695	$1,695
Specific maintenance items **budget**	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total maintenance	$2,119	$2,119	$2,119	$2,119	$2,119	$2,119	$2,119	$2,119	$2,119	$2,119
Capital										
Planned renewal **budget**	$6,465	$5,086	$4,670	$4,226	$6,966	$6,914	$4,577	$3,986	$4,072	$5,424
Planned upgrade/new **budget**	$5,237	$11,138	$13,450	$5,198	$4,644	$4,610	$3,051	$2,658	$2,715	$3,616
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