

CENTRAL DARLING SHIRE COUNCIL



TRANSPORT

Asset Management Plan



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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AM Plan) details information about infrastructure assets with 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 over the 20 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

This plan covers the infrastructure assets that provide a transport network, the following assets types:

- Roads - sealed
- Roads - unsealed
- Kerb and channel
- Airport Runways sealed
- Airport runways unsealed
- Footpaths
- Culverts (small)
- Bridges & Culverts
- Car parks (sealed & unsealed)
- Fences

1.2 Asset Description

The Transport network comprises:

- Local Shire Roads Sealed
- Local Shire Roads Pavement
- Local Shire Roads Formation
- Regional Roads Sealed
- Regional Roads Unsealed Pavement
- Regional Roads Unsealed Formation Natural
- Kerb & Channel
- Culverts Small PC
- Culverts Small RCBC
- Bridges (Large Culverts
- Fences
- Car park Pavement
- Car park Sealed Surface
- Footpaths
- Airport Runways Sealed
- Airport Runways Pavement
- Airport Unsealed

These infrastructure assets have significant value. Gross replacement cost was calculated by independent valuers, for financial reporting purposes, at \$152,258,609, as at 30 June 2020.

1.3 Levels of Service

Our present funding levels are insufficient to continue to provide existing services at current service levels in the medium term. The main service consequences of the Planned Budget are:

- Inferior sealed roads
- Lengthy road closures on unsealed roads
- Unreliable airport runway access for emergency or regular plane traffic
- Failed culverts or bridges causing delays and detours
- Unusable footpaths
- Inadequate drainage
- Unserviceable carparks
- Fencing that creates safety implications due to uncontrolled wildlife

1.4 Future Demand

The main demands for new services in Central Darling Shire are created by:

- Population change
- Diversification of industry
- Climate change
- Changes in community expectations

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Monitor customer service requests and other feedback from the community to determine any new trends in community priorities.
- Liaison with industry
- Monitoring of climate trends and planning asset lifecycle activities accordingly
- Community education explaining what Council can and cannot afford to do within the confines of available budget.

1.4.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the transport network is estimated as \$77,617,104 or \$7,761,711 on average per year.

1.5 Financial Summary

1.5.1 What we will do

Estimated available funding for the 10 year period is \$67,000,000 or \$6,700,000 on average per year as per the Long-Term Financial plan or Planned Budget. This is 86.32% 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 Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Transport leaves a shortfall of \$1,061,711 on average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

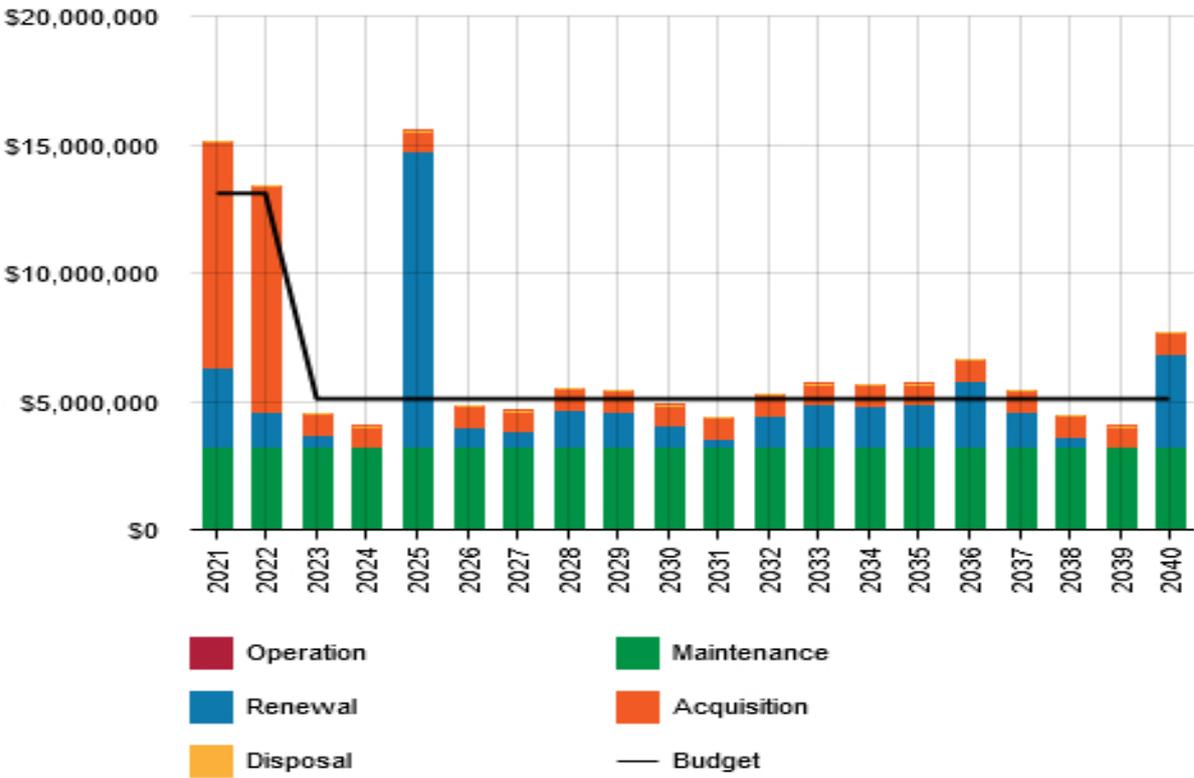


Figure Values are in current dollars.

We plan to provide transport services for the following:

- Operation, maintenance, renewal and upgrade of transport assets to meet service levels set that can be funded by annual budgets.
- Upgrade and new assets construction only occur when Council receives external funding for the full project.

1.5.2 What we cannot do

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

- Reseals
- Pavement Reconstruction
- Reconstruction and sealing of unsealed roads
- Resheeting
- New Footpaths

- Unsealed runway sealing
- Unsealed carpark sealing
- Install new kerb & channel

1.5.3 Managing the Risks

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

The main risk consequences are:

- Sealed roads- increased risk of traffic accidents and vehicle damage
- Unsealed roads- increased risk of traffic accidents, vehicle damage and delays for locals, tourists and the heavy vehicle transport industry
- Un-sheeted roads- increased risk of traffic accidents, vehicle damage and delays for locals, tourists and the heavy vehicle transport industry
- Airport Runways- unsealed runways incapable of emergency landings to fly injured people out or scheduled clinical visits
- Footpaths that are unformed may force users onto the road and are not fit for purpose
- Carparks that don't meet user requirements may cause reputational damage to council and may be safety liability
- Kerb & channel drainage assets may leave council liable if inundation or flooding occurs due to their incapacity to control and channel stormwater

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

- Distributing available funding to maintain critical assets to meet customer service level requirements
- Manage asset maintenance & operations budgets to meet the road hierarchy programme
- Review and adjust functional service standards
- Implement an improvement program for visibility remedial work
- Conduct regular condition assessment, routine maintenance and renew deteriorating components as required.
- Regular defect assessment / monitoring
- Monitor customer service requests against Levels of Service and adjust if required.

1.6 Asset Management Practices

Our systems to manage assets include:

- Financial System: Civica/ Practical
- Asset System: AssetFinda

Assets requiring renewal/replacement are identified from the remaining useful life in the asset register and are inspected to confirm their condition.

The Asset Register was used to forecast the renewal life cycle costs for this Asset Management Plan.

1.7 Monitoring and Improvement Program

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

- Audit all assets and add to the new AssetFinda program to improve the asset data in register. This is in progress but yet to be completed.
- The General Ledger system and Job Costs system was recently changed to reflect differentiation between capital renewal and maintenance works. This will permit separate job cost numbers in

Councils financial system, to split maintenance works into reactive, planned and cyclic and capital works into renewal, upgrade and new. Introduced on July 1 2020, this is expected to enable better accounting for asset lifecycle activities and more informed decision making, in the future.

- Undertake further customer satisfaction surveys to consult with the community to identify desired levels of service. These are planned for mid 2021.

2.0 Introduction

2.1 Background

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

The Asset Management Plan is to be read with the Central Darling Shire planning documents. This should include the Asset Management Policy and Asset Management Strategy, along with other key planning documents:

- Central Darling Shire Community Strategic Plan 2017-2027
- Central Darling Shire Delivery Program 2018-21 and Draft Operational Plan 2020-21

The infrastructure assets covered by this Asset Management Plan include: roads (majority unsealed), aerodrome facilities, footpaths, bridges, culverts, carparks and fences. These assets are used to provide safe travel on the shire road network, access to agricultural properties, acceptable service levels for the community, isolated community connectivity, safe aviation service access, stock and wildlife control, safe walkways, community amenities

The infrastructure assets included in this plan have a total replacement value of \$152,258,609, as at 30 June 2020.

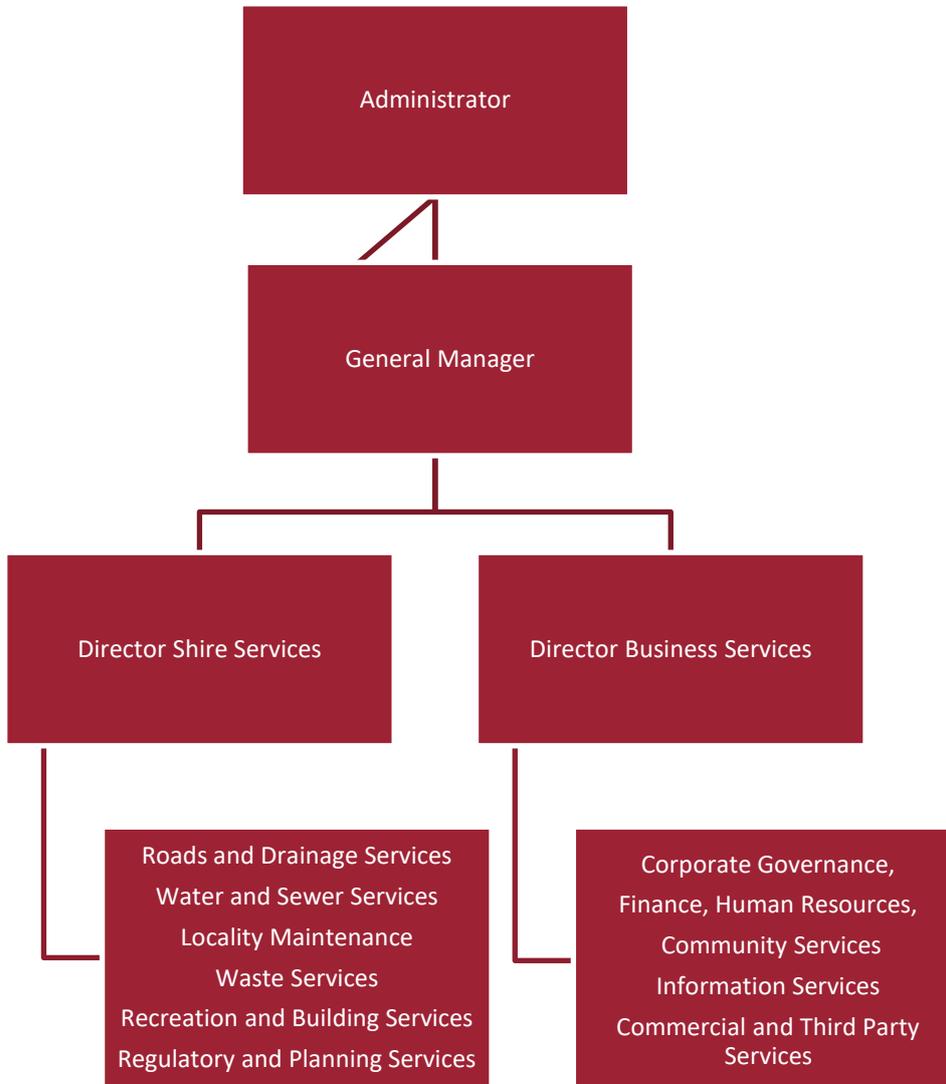
Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Councillors/ Administrator	Represent needs of community/shareholders, Allocate resources to meet the organisation's objectives in providing services while managing risks, Ensure organisation is financial sustainable.
General Manager	Endorse the development of asset management plans and provide the resources required to complete this task. Set high level priorities for asset management development and raise the awareness of this function among staff and contractors. Support the implementation of actions resulting from this plan and prepared to make changes to a better way of managing assets and delivering services. Support for an asset management driven budget and LTFP.
Finance Section	Consolidating the asset register and ensuring the asset valuations are accurate. Development of supporting policies such as capitalisation and depreciation. Preparation of asset sustainability and financial reports incorporating asset depreciation in compliance with current accounting standards.
Operational (Outdoor) Staff	Provide local knowledge level detail on all the transport assets. Verify the size, location and condition of assets. They can describe the maintenance standards deployed and the ability to meet technical and customer levels of service.
Asset Management Consultants	Provide support for the development of asset management plans and the implementation of effective asset management principles within Council.
External Parties	Community residents & businesses; Tourist and Visitors (as occasional users); Neighbouring councils; Emergency services; Utility companies;

Key Stakeholder	Role in Asset Management Plan
	Local Businesses and; Federal and State Government authorities & agencies

Our organisational structure for service delivery from infrastructure assets is detailed below,



2.2 Goals and Objectives of Asset Ownership

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,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

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

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

- International Infrastructure Management Manual 2015 ¹
- ISO 55000²

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

² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

During the development of the Community Strategic Plan in 2017, a Community Engagement Strategy was prepared and implemented by Council. The main source of engagement and feedback were hardcopy and online surveys, contacting key stakeholders and leaders in each community. Widespread distribution of surveys was available in common locations and advertising was conducted using various media outlets. A total of 52 surveys were received as part of the process.

Respondents were asked to rank in order of priority the services or facilities that were most important to them. The overall five high ranking services and facilities were:

1. Water
2. Youth facilities
3. Road construction and maintenance
4. Provision of aged care facilities
5. Waste management

At the time of the survey the community was experiencing severe drought, hence the importance attributed to water. With a relatively high population of children aged 5- 9 years (7.2%) and youth 10-14 years (7.0%) compared to the Australian average (6.3% and 6.4% respectively), it is not surprising that youth facilities are important. Road construction and maintenance was the third community priority.

3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Central Darling Shire vision, mission, goals and objectives.

Our vision is:

Central Darling will be a great place to live and visit.

Our mission is:

Realising quality opportunities for all in the Central Darling Shire through:

- *Effective leadership*
- *Community development through involvement, participation, partnership, ownership and collaborative approach*
- *Facilitation of services*
- *Community ownership*
- *Delivery of consistent, affordable and achievable services and facilities.*

Strategic goals have been set by Council and are outlined in the Draft Operational Plan 2020-21.

The relevant goals and objectives and how these are addressed in this Asset Management Plan are summarised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Improved infrastructure across the Shire	Safe and reliable network of roads throughout the Shire	This document outlines how Council will undertake the lifecycle activities, required to provide a safe and reliable road network.
	Maintain airports in acceptable condition	This document outlines how Council will undertake the lifecycle activities, required to maintain airports in an acceptable condition.
	Council and community assets are maintained and managed responsibly	This document describes how Council will make financially responsible and informed decisions, to manage transport assets in a sustainable manner.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the transport service are outlined in Table 3.3.

Table 3.3: 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 rules to be followed and responsibilities of users of the roads system and how the rules are enforced
Work Health and Safety Act 2011	This Act aims to secure and promote the health, safety and welfare of people at work and to protect people at a place of work against risks to health or safety arising out of the activities at work.
Environmental Planning and Assessment Act, 1979	Provides for the protection of the environment, established the Department of the Environment and defines its functions and powers
Australian Standards and RTA Traffic Control at Worksites Manual, 2010	Provides guidance for transport asset managers in use of transport services such as AS 1742; Manual of Uniform Traffic Control Devices
Australian Road Rules	The Australian Roads Rules are incorporated into State Traffic Regulations under the Road Traffic Act

3.4 Customer Values

Service levels are defined in three ways, customer values, customer levels of service and technical levels of service.

Customer Values indicate:

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

Table 3.4: Customer Values

Service Objective:			
Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Reliable roads, with a smooth surface, safe from hazards	Customer service requests, Accident reports	1 per month 1 per month	Expected to remain the same
Airports providing all weather access for planes, complying with aviation safety regulations	Customer service requests, adverse intervention from aviation regulator	1 per month	Expected to remain the same
Transport assets well maintained and managed responsibly	Customer service request	1 per month	Expected to remain the same

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

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?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

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

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget												
Condition	Condition of transport assets	Condition assessment performed for mandated valuation. Dates of inspections 3-6 August 2020.	The inspections undertaken on 6 August 2020 were undertaken following major storm damage restoration works, and the condition of unsealed roads was not representative of usual circumstances. A realistic condition profile is shown below:	Condition is likely to deteriorate												
			<table border="1"> <caption>Replacement Cost (CRC) by Condition Level</caption> <thead> <tr> <th>Condition Level</th> <th>Replacement Cost (CRC)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>\$10,000,000</td> </tr> <tr> <td>2</td> <td>\$15,000,000</td> </tr> <tr> <td>3</td> <td>\$95,000,000</td> </tr> <tr> <td>4</td> <td>\$48,000,000</td> </tr> <tr> <td>5</td> <td>\$2,000,000</td> </tr> </tbody> </table>		Condition Level	Replacement Cost (CRC)	1	\$10,000,000	2	\$15,000,000	3	\$95,000,000	4	\$48,000,000	5	\$2,000,000
Condition Level	Replacement Cost (CRC)															
1	\$10,000,000															
2	\$15,000,000															
3	\$95,000,000															
4	\$48,000,000															
5	\$2,000,000															
	Confidence levels		Medium (Professional judgement supported by data sampling) A sample of the assets only was inspected by the valuer.	Medium												
Function	Transport assets available for use as required by the community	Number of road and aerodrome closures following wet weather	Poor. Unsealed road and runway assets closed following wet weather.	Not likely to change. Unsealed assets unlikely to be sealed. No budget allocation.												
	Confidence levels		Medium	Medium												
Capacity	Transport assets have the capacity to meet community demand	Number of complaints requesting network augmentation (new footpaths, sealing of unsealed roads etc)	Low number of complaints	Likely to stay the same												
	Confidence levels		Medium	Medium												

3.6 Technical Levels of Service

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

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

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. 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. 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 provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition				
	Local roads	Upgrade local roads	\$700,000 grant funded	
	Regional roads	Upgrade regional roads	\$100,000 grant funded	
	All weather access to Pooncarie	Seal 60km of the Pooncarie Road 2020- 2022	Full external funding \$25M grant, equal parts NSW State Government and Australian Government funding.	
		Budget	\$8.8M 2021 and \$2022, \$800,000 future years	\$8.8M 2021 and \$2022, \$800,000 future years
Operation				
	Included with maintenance. No separate Operations budget allocation.			
Maintenance				
Sealed & Unsealed Roads	Maintain sealed and unsealed roads to meet user requirements	Maintenance grading Pothole sealing Shoulder grading Trees	As permitted within current budget allocation	

³ IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
		Edge break Drop off		
Kerb & Channel	Maintain K & C to required drainage service level	Minor K & C repairs stemming from inspections	General maintenance	Additional maintenance requirements
Airport Runways	Maintain airport & surrounds to meet level of service	Lighting, slashing, maintenance grading	General maintenance	Additional maintenance
Footpaths	Maintain Footpaths to desired service levels	Minor footpath repairs Grinding	\$50,660	\$100,000
Culverts small	Maintain small culverts to expected service levels	Culvert repairs	\$32,000	\$123,000
Bridges and Large Culverts	Maintain Bridges & Large culverts to expected service levels	Maintenance repairs	\$40,340	\$100,000
Carparks sealed and unsealed	Maintain carparks to expected service levels	Carpark maintenance	\$5,000	Maintenance and maintenance costs considered to be at an acceptable level \$5,000
Fences	Maintain Fences to expected service levels	Fence repairs	\$10,000	Fences have been upgraded and considered to be at an acceptable level \$10,000 at this point in time
		Budget	\$3,200,000	To be determined
Renewal				
Sealed & Unsealed Roads	Renew sealed and unsealed roads to meet user requirements	Reseals Capping Heavy Patching	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
Kerb & Channel	Renew K & C to required drainage service level	Replace damaged / deteriorated K & C	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
Airport Runways	Renew airport & surrounds to meet level of service	Reseals Patching Grinding Slashing	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
Footpaths	Renew Footpaths to desired service levels	Replace damaged sections	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
Culverts small	Reinstate small culverts to expected service levels	Replace degenerated culverts	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
Bridges and Large Culverts	Renew Bridges & Large culverts to current expected service levels	Renew degenerated bridges & culverts Painting Approach repairs	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
Carparks sealed and unsealed	Renew carparks to expected service levels	Reseals Grading Patching	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
Fences	Renew Fences to expected service levels	Renew fencing	As permitted within current budget	As required by the renewals plan, based on asset condition and updated remaining useful life
		Budget	<i>\$1,100,000</i>	<i>\$2,100,000</i>
Disposal	No disposals planned			

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

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.

4.0 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 have been identified and documented.

4.3 Demand Impact and Demand Management Plan

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

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 4.3. Further opportunities will be developed in future revisions of this Asset Management Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population	2018	Population decline	Slow population decline is expected to have minimal impact on the constant demand for improved transport infrastructure (in particular the sealing of key roads).	Monitor customer service requests and other feedback from the community to determine any new trends in community priorities.
Industry	Sheep, beef, cattle and grain farming, fruit and tree nut growing (Menindee)	Diversification: goat and meat sheep production, and more intensive horticulture (cotton, malting grains, grapes and stone fruit)	Diversification of agricultural activities may lead to increased demand for the transport infrastructure. In order for new crops to reliably reach the market, roads must be made accessible in all weather.	Monitor customer service requests and other feedback from the community to determine any new trends in community priorities. Liaison with industry.
Climate Change	Global warming evident	Increased rainfall intensity less annual rainfall.	Outcomes from storm events could be worse. More frequent flooding with increased adverse impacts	Monitor trends and plan asset lifecycle activities accordingly

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
			and damage to roads.	
Expectations	Limited expectations regarding Council's provision of roads	Higher expectations and levels of awareness	Community demands for improved roads in the Shire. Lengthy closures of unsealed roads following a flood event no longer considered acceptable by the community.	Community education explaining what Council can and cannot afford to do within the confines of available budget.

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit Central Darling Shire Council to 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 (Refer to Section 5).

4.5 Climate Change and Adaption

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

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

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

Opportunities identified to date for management of climate change impacts on existing assets are shown in Table 4.5.1

Table 4.5.1 Managing the Impact of Climate Change on Assets

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Global warming	Anticipated that rainfall patterns will change:	Potential for increased flooding, road and aerodrome closures following wet weather,	Monitor weather trends and act where possible to keep services available
	Anticipated that maximum and minimum temperatures will increase.	May impact the time of year suitable for lifecycle activities, such as road maintenance grading.	Plan road lifecycle activities to suit the new climate.

Projected changes sourced from the NSW Government, Office of Environment and Heritage, Far West Climate Snapshot 2014.

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

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

Central Darling Shire upgrades assets and constructs new assets when grant funds are available. For example, Council will be upgrading and sealing the Pooncarie Rd in 2021 and 2022. There is no internal funding available for upgrades. Annual upgrades to local and regional roads are 100% grant funded.

Councils asset new and upgrade construction needs include:

- Sealing sections of unsealed roads
- Construction of new kerb and channel – where major street stormwater drainage routes are identified without existing kerb and channel
- Reconstruction and sealing of gravel airport runways
- Construction of new footpaths where required in major pedestrian routes
- Minor carpark upgrades

Table 4.5.2 summarises some asset climate change resilience opportunities.

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
Sealing of unsealed roads	Climate change may increase the intensity of rainfall events. Unsealed roads may be closed following wet weather	Sealed roads are more robust and can remain operational following more intense rainfall events.
New kerb and channel	Climate change may increase the intensity of rainfall events. Kerb and channel prevent runoff ponding in the street after a rainfall event thus protecting the road pavement	Augmenting the kerb and channel network improved the resilience of road pavements
Sealing of airport runways	Climate change may increase the intensity of rainfall events. Grassed runways may be closed to use following wet weather	Sealed runways are more robust and can remain operational following more intense rainfall events
Construction of new footpaths	Climate change may increase the intensity of rainfall events. Nature strip may be impassable without a constructed footpath.	Footpaths to be constructed to drain freely and ensure that the nature strip is suitable for pedestrian traffic following rainfall.
Minor carpark upgrades	Climate change may increase the intensity of rainfall events.	Carpark upgrades to include cross fall and drainage to ensure that stormwater runoff can drain away promptly following a rainfall event.

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

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Central Darling Shire Council plans to manage and operate the assets at the agreed levels of service (Refer to 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 5.1.1.

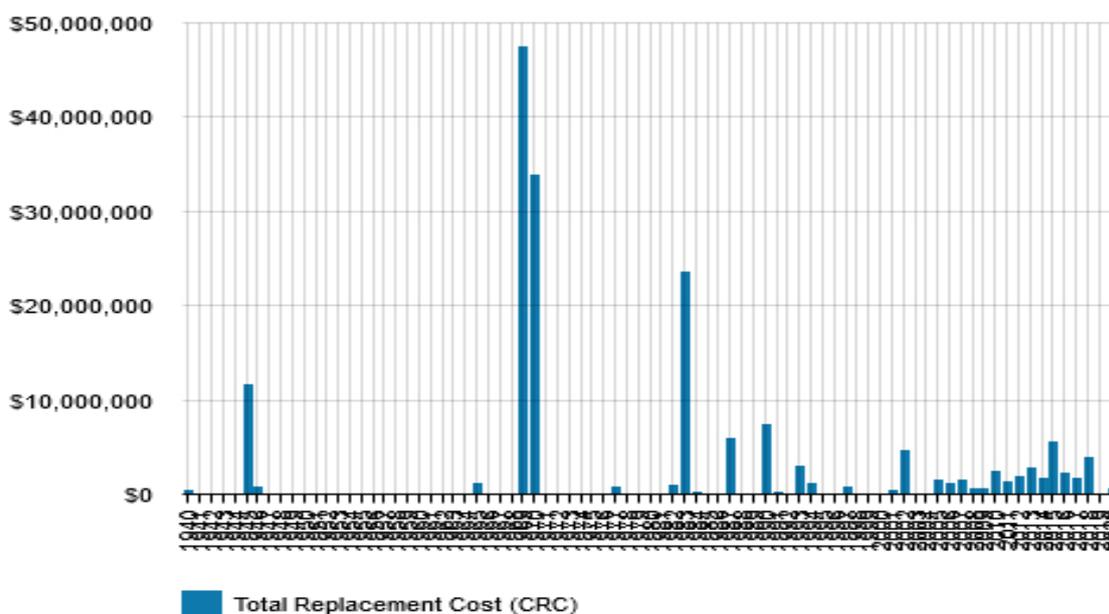
The assets in this plan are varied but all relate to Transport assets owned and maintained by the shire. Some assets are in very isolated locations which adds further cost to the maintenance and repair costs as repairs and maintenance arise.

The age profile of the assets included in this AM Plan are shown in Figure 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Roads	2400km	\$ 108,798,241
Aerodromes	6	\$ 13,750,516
Bridges and Major Culverts	23	\$ 19,510,000
Culverts	444	\$ 4,871,877
Footpath	12km	\$ 1,861,049
Kerb and Channel	17km	\$ 3,466,926
TOTAL		\$ 152,258,609

Figure 5.1.1: Asset Age Profile



All figure values are shown in current day dollars.

The data is based on year of acquisition from the asset register. As indicated by the graph, numerous assets were obtained in 1969, 1970 & 1983 and this could be due to a number of reasons. Firstly, the handover of Regional Roads and associated assets from the state government (RMS) including roads, formation, pavements, culverts and bridges. Secondly the year of acquisition was not known and the assets were lumped into estimated years of acquisition or perhaps the acquisition years were based on their current condition at the time of inspection.

The spike in 1969, 1970 & 1983 for asset acquisition suggests that many of these assets will require renewal as a group in the same financial year but in reality, the renewal process will be based on a condition assessment of these assets with some assets deteriorating at a faster rate than others.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Regional Roads	95% of Unsealed network is not all weather access, with less than 25mm of rain. 10% of Sealed network has substandard width. 5% of Sealed network has substandard pavement. 2 Stock grids with substandard widths.
Shire Roads	95% of Unsealed network is not all weather access, with less than 25mm of rain. 10% of Sealed network has substandard width. 5% of Sealed network has substandard pavement. 90% Stock Grids substandard (alignment, approaches, delineation and width)
Town and Village Streets	15% of Sealed network has substandard seal allowing moisture ingress into the pavement.
Footpaths	5% of Unpaved footpaths with erosion and evenness problems.
Kerb and Gutter	Isolated problems due to tree roots. Lack of conforming pram ramps.
Aerodrome	90% sealed Secure fencing is required at all aerodromes to keep kangaroos out, this is now 80% completed
Car park	90% sealed with isolated edge break and pot hole repair required
Bridges	All timber bridges have been replaced with concrete bridges and all bridges within the shire are of an acceptable standard but monitoring of the older concrete bridges is required.

The above service deficiencies were identified from inspections, the transport asset register, customer complaints, engineering standards, reports from staff, and the community.

Council conducts regular inspections of roads assets. Council officers, such as the overseer, assistant overseer and construction ganger inspect roads during their day to day tasks. The purpose of these inspections is to identify major defects and ascertain where reactive maintenance is required.

Weekly inspections are undertaken of all regional roads as part of the routine supervision of the grading contractor's crew. It is one of the agreed responsibilities of the overseers and gangers and it is documented in their job description. Any defects are noted. Council uses the "Reflect" software system to manage inspections.

Two types of inspections are undertaken by Council: defect and condition inspections.

- Defect Inspections – Records of the inspections are maintained in the inspecting officer’s diary with defects recorded in the Customer Service System on return to the office to facilitate attention to the defect in accordance with priorities assessed in the field.
- Condition inspections are applied to sealed roads to assess the state of the seal, to enable accurate and cost effective planning of road reseals, rehabilitation and reconstruction. Condition inspections can be undertaken by specialist contractors.

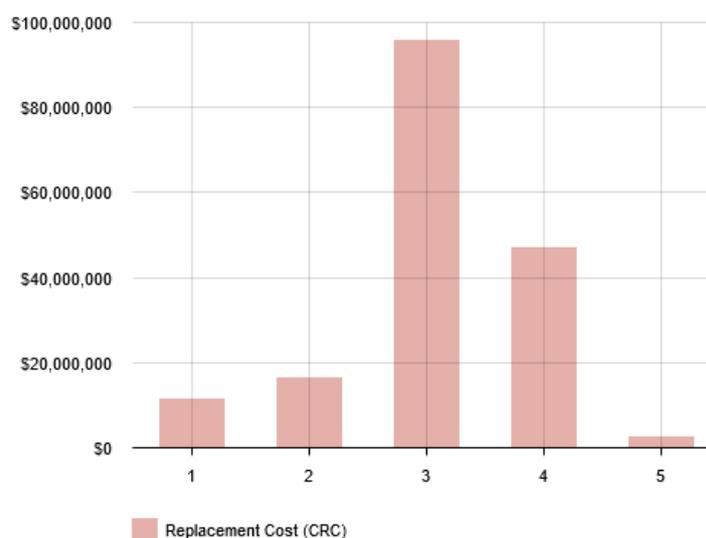
Classification	Frequency	
	Maintenance / Defect Inspections	Condition Inspections (sealed roads only)
Regional Roads Sealed	Annual	5 years
Regional Roads Unsealed	6 monthly	Not applicable
Local Roads Sealed	Annual	5 years
Local Roads Unsealed	Annual	Not applicable
Urban Roads Sealed	Annual	5 years
Urban Roads Unsealed	Annual	Not applicable

Condition is measured using a 1 – 5 grading system 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
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

The condition profile of our assets is shown in Figure 5.1.3.

Figure 5.1.3: Asset Condition Profile



The condition gradings are taken from 2018 information. Condition gradings documented in the 2020 valuation report reflect inspections on a small portion of the network only, after heavy expenditure on maintenance grading funded by storm damage restoration grants. The 2018 condition gradings are more representative of asset condition.

5.2 Operations and Maintenance Plan

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

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget \$	
	Regional Roads	Local Roads
2019/20	\$1.8M	\$1.6M
2020/21	\$1.4M	\$1.6M
2021/22	\$1.6M	\$1.6M

Maintenance budget levels do not provide the level of service requested by the community. The service consequences and service risks have been identified and are highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

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

Asset hierarchy

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

The service hierarchy is shown in Table 5.2.2.

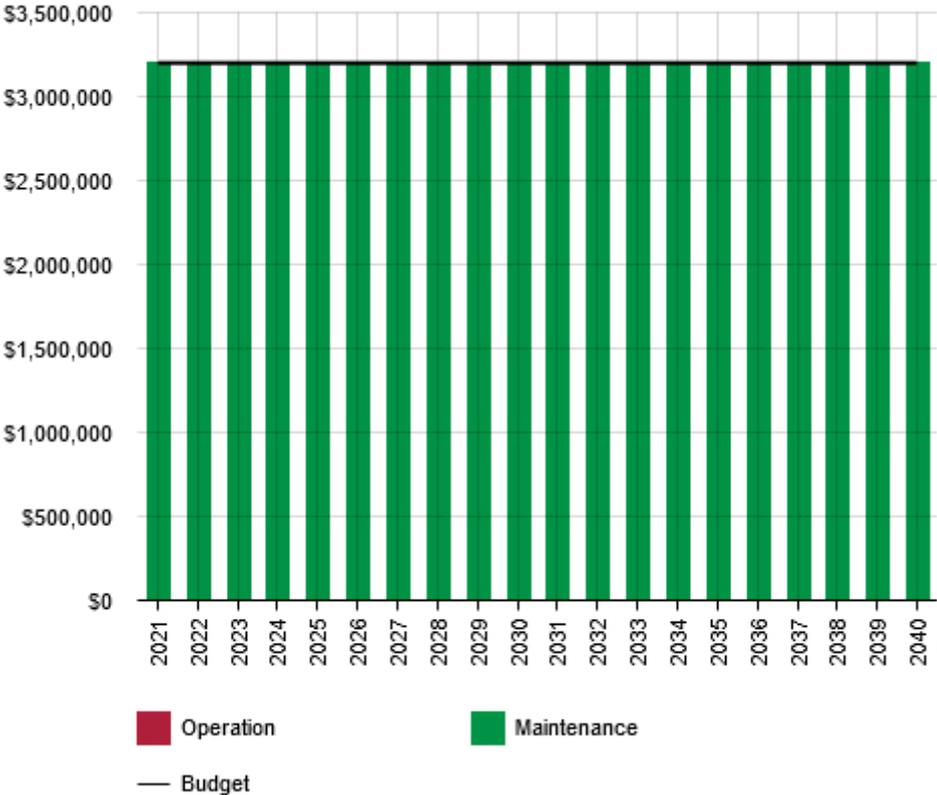
Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
State Roads	A classified road as determined by Transport for NSW and formally gazetted by the State Government. Under the care and control of the State Government. Main arterial road network for the State.
Regional Roads	A classified as determined by Transport for NSW and formally gazetted by the State Government. Council received State funding for the ongoing maintenance and improvements on the road. Regional Roads traverse geographic regions and link local government areas.
Local Roads	All roads within the shire, outside of the towns and villages, not State or Regional
Urban Roads	All roads within the urban areas of the towns and village and inside town limits, not State or Regional

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

5.3 Renewal Plan

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

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

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

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed on 30 June 2020

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Road formation	240 years
Road pavement base	20 (unsealed) or 80 (sealed) years
Road pavement sub base	60 (unsealed) or 240 (sealed) years
Road seal	15 years
Aerodrome carpark and sealed runway formation	300 years
Aerodrome carpark pavement base	80 years
Aerodrome carpark pavement sub base	240 years
Aerodrome carpark seal	15 years
Aerodrome fence	40 years
Aerodrome runway pavement base	50 years
Aerodrome runway pavement sub base	150 years
Aerodrome unsealed runway formation	100 years
Aerodrome unsealed runway pavement base	50 years
Bridges and major culverts	100 years
Footpaths	60 years
Kerb and channel	80 years
Culverts	80 years

The estimates for renewals in this Asset Management Plan were based on the asset register method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

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

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

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

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.3.1.

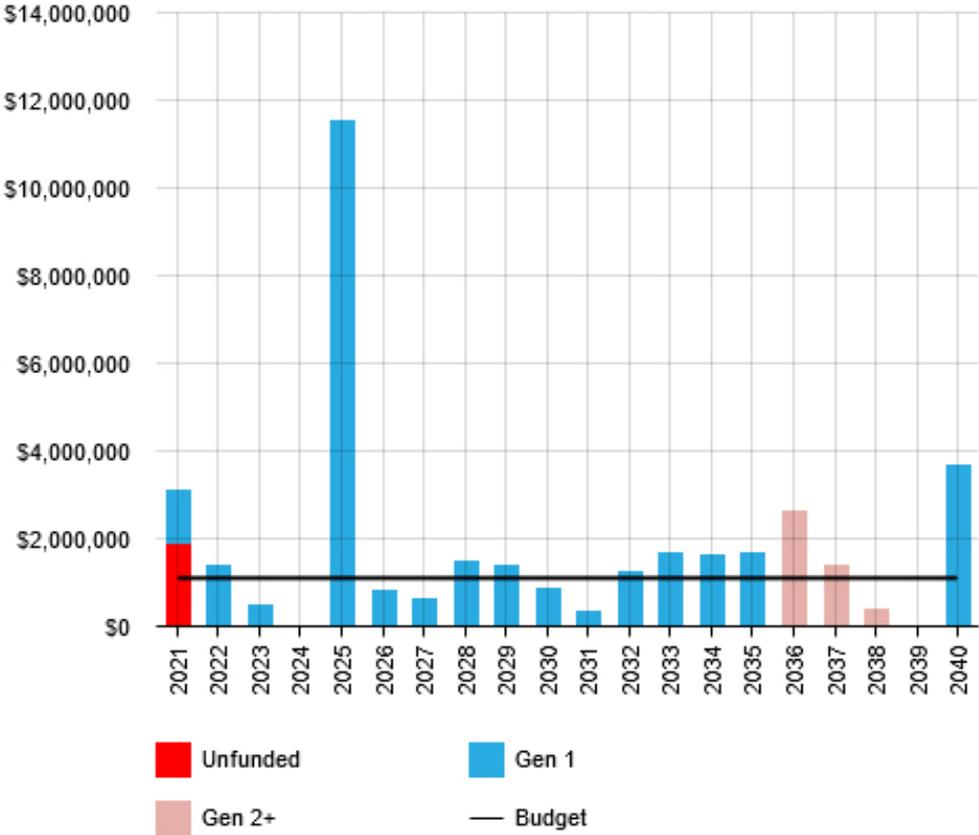
Table 5.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Hierarchy within asset category	20%
Condition assessment	50%
Geometry, safety, functional deficiency	10%
Economic performance	10%
Network strategy	10%
Total	100%

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time as upgrades to the road network are constructed. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

Council does not have adequate funds to renew transport assets in accordance with the renewal forecasts.

5.5 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity, such as the construction and sealing of an unsealed road pavement. Assets may also be donated to Central Darling Shire Council.

5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. The priority ranking criteria is detailed in Table 5.4.1.

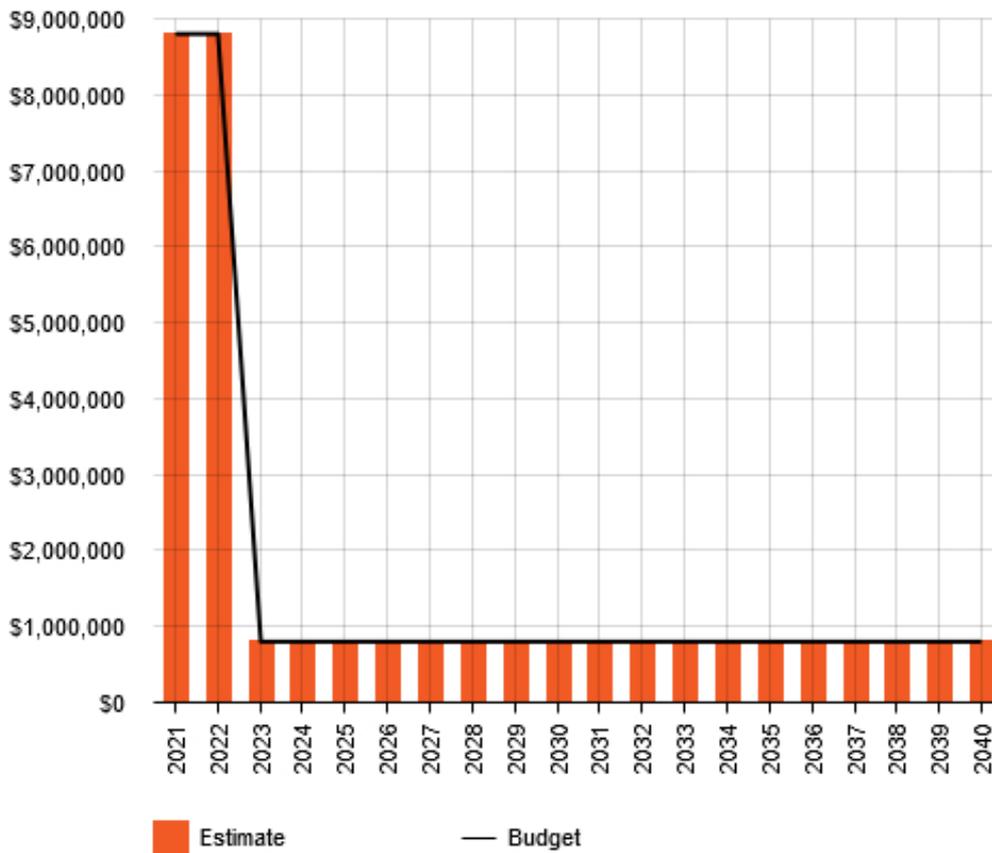
Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Hierarchy within asset category	30%
Condition assessment	10%
Geometry, safety, functional deficiency	10%
Economic performance	10%
Risk Cost	10%
Network strategy	30%
Total	100%

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarised in Figure 5.4.1 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

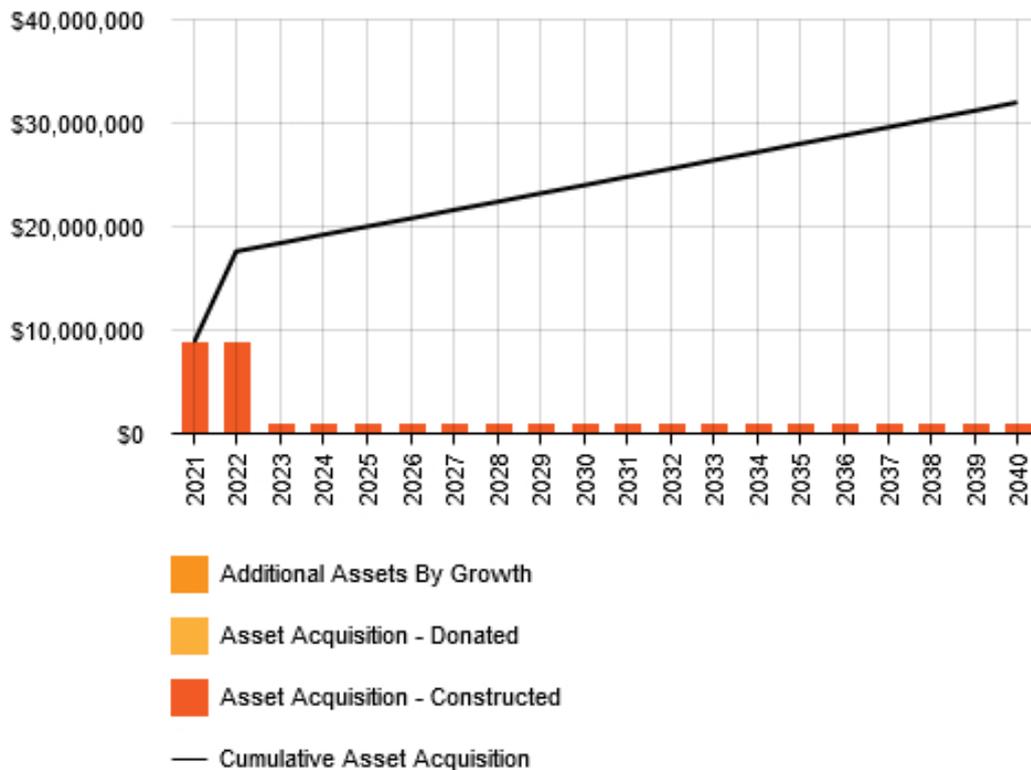
Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

When an Entity commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.4.2.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current 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 that there is available funding.

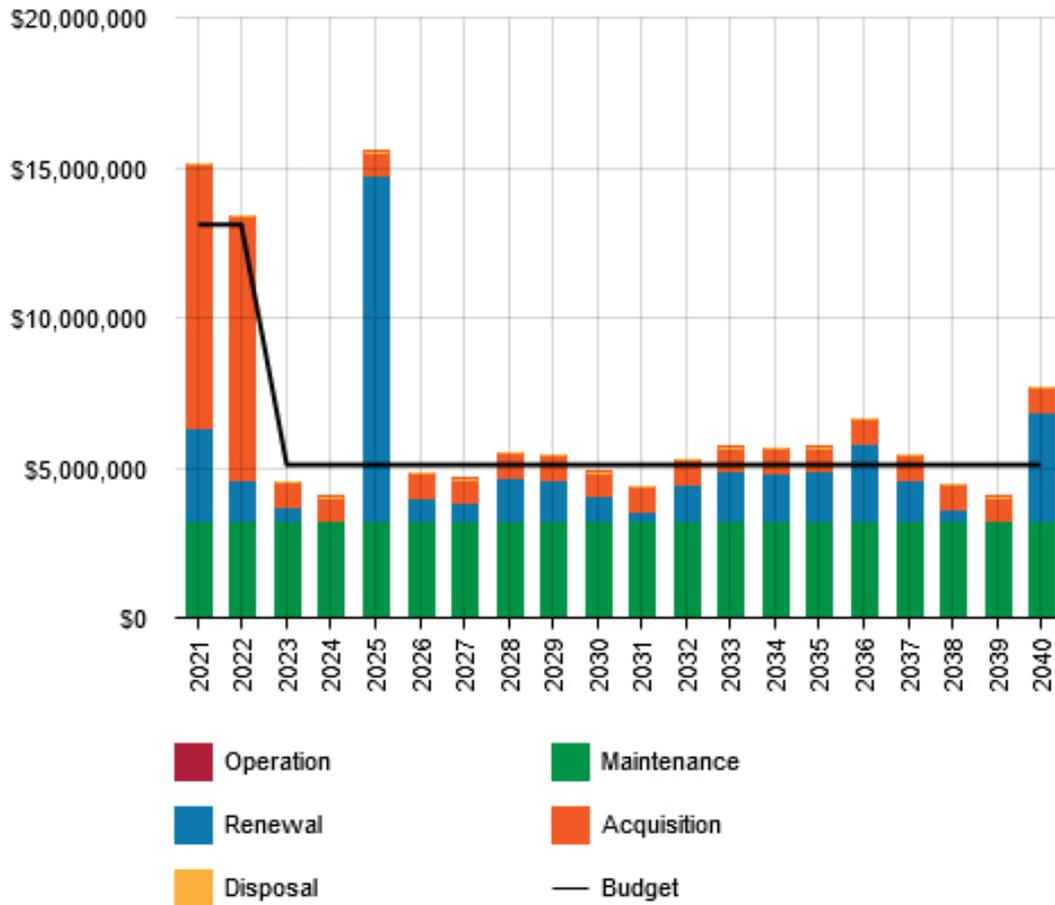
New works are undertaken when grant funds are available, and will increase the demand for maintenance and renewals over time.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.4.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

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

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

Council does not have adequate funds to meet the forecast maintenance and renewal costs.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Council does not intend to dispose of any transport assets.

Table 5.6: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
Nil				

6.0 RISK MANAGEMENT PLANNING

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

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’⁴.

An assessment of risks⁵ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Roads Sealed	Flooding/ Heavy Rain Event	Closed Roads- Failed service level
Roads Unsealed	Flooding/ Heavy Rain Event	Closed Roads- Failed service level
Runways Sealed	Flooding/ Heavy Rain Event	Closed Runways- Failed service level
Runways Unsealed	Flooding/ Heavy Rain Event	Closed Runways- Failed service level
Culverts small	Collapse	Serious accident- Failed service level
Bridges & Large Culverts	Collapse	Serious accident- Failed service level
Fences	Failure	Wildlife on runways - Failed service level
Roads Sealed	Flooding/ Heavy Rain Event	Closed Roads- Failed service level

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

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

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

⁴ ISO 31000:2009, p 2

⁵ Central Darling Shire does not have a Corporate or Infrastructure Risk Management Plan at present. This has been identified in the Improvement Plan under item 24

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

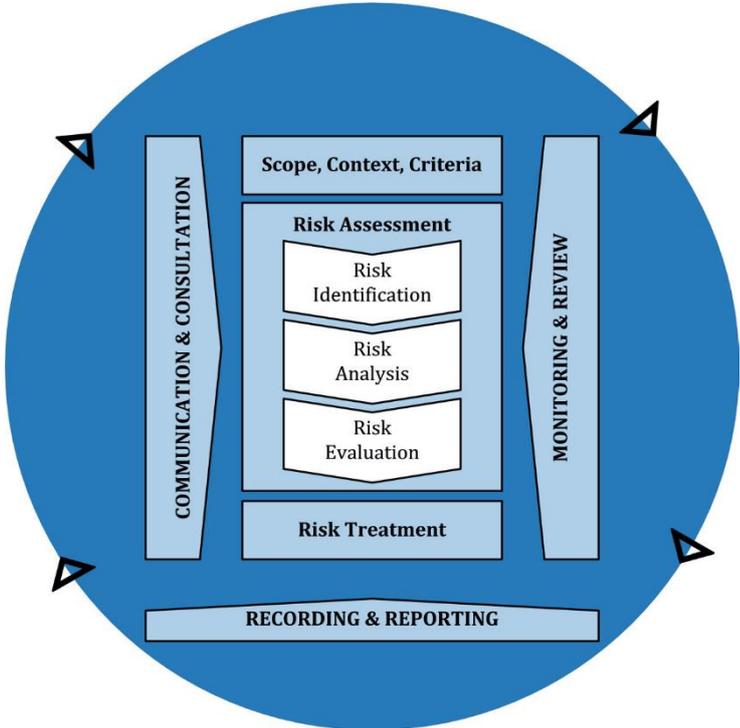


Fig 6.2 Risk Management Process – Abridged
 Source: ISO 31000:2018, Figure 1, p9

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

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

Critical risks are those assessed with ‘Very High’ (requiring immediate corrective action) and ‘High’ (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management and the Administrator/ Councillors.

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs (\$000)
Unsealed Road Network	Reduction in number of roads with all-weather access	H	Develop a road hierarchy, appropriate cyclic maintenance program (gravel re-sheeting). Match service levels to available funds.	M	\$100 per km

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs (\$000)
Sealed Road Network	Increase in pavement failures and road roughness due to wearing of sealed surfaces	H	Develop a road hierarchy, appropriate cyclic maintenance program (Bitumen Reseals, patching, heavy patching) to approach a 10 -15 year cycle. Match service levels to available funds.	L	\$800
Footpaths	Trips and Falls	H	Maintain defect data, determine priorities based on service and risk criteria, monitor prioritised program for defect rectification.	M	\$100
Aerodrome	Aerodrome assets deteriorate	H	Regular defect and condition assessment and monitoring	M	\$100
	Lack of control of animals	M	Install treatments (e.g. grids) and signage	L	\$20
	Inadequate airstrip capacity	M	Review and adjust design service standards	L	0
	Inadequate airstrip function	H	Review and adjust functional service standards	L	\$0
	Inadequate visibility	M	Implement an improvement program for visibility remedial work	L	\$50
Bridge	Bridge failure, such as a catastrophic collapse Bridge must be replaced temporarily with a sidetrack.	L	Conduct regular condition assessment, routine maintenance and renew deteriorating components as required.	L	\$100

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs (\$000)
	Bridge is unserviceable – a condition assessment reveals that condition is excessively deteriorated.	L	Conduct regular condition assessment, routine maintenance and renew deteriorating components as required. Where bridge is located on a road frequented by an industry that would be adversely affected by a load restriction, pursue opportunities to partner in the replacement of the structure.	L	\$20
	Bridge is in a degraded and weakened condition – a condition assessment indicates that a load restriction is appropriate for the structure	M	Conduct regular condition assessment, routine maintenance and renew deteriorating components as required.	L	\$10
	Component of the structure, such as a guardrail fails	M	Conduct regular condition assessment, routine maintenance and renew deteriorating components as required.	L	\$10
Car Park	Carpark assets deteriorate	H	Regular defect assessment / monitoring	L	\$2
	Carpark assets do not meet community needs	M	Monitor customer service requests against Levels of Service and adjust if required	L	\$2

Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented.

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to ‘withstand a given level of stress or demand’, and to respond to possible disruptions to ensure continuity of service.

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

Our current measure of resilience is shown in Table 6.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 6.3: Resilience

Threat / Hazard	Current Resilience Approach
Bushfire	Regular firebreak grading
Flooding	Levees
Inundation	Water main maintenance/ raise house floor levels
Heavy Rainfall	Raise house floor levels
Traffic Accident	Adequate emergency response levels
Bridge Failure	Maintain bridges/ regular inspections

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

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

- Reseals
- Reconstruction and sealing on unsealed roads
- Resheeting
- New Footpaths
- Unsealed runway sealing
- Unsealed carpark sealing
- Install new kerb & channel

6.4.2 Service trade-off

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

- Sealed roads will deteriorate
- Unsealed roads will not be trafficable during and after most rainfall events
- Un-sheeted roads will be impassable for long periods after rainfall events
- Runways- unsealed runways will not be capable of catering for emergency or scheduled Flying Doctor or regular air traffic landings
- Footpaths will not meet demand service levels or user expectations and requirements
- Some carparks will be unusable after heavy rainfall events
- Existing urban kerb & channel drainage assets will not be adequate drain towns effectively

6.4.3 Risk trade-off

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

- Sealed roads- increased risk of traffic accidents and vehicle damage
- Unsealed roads- increased risk of traffic accidents, vehicle damage and delays for locals, tourists and the heavy vehicle transport industry
- Un-sheeted roads- increased risk of traffic accidents, vehicle damage and delays for locals, tourists and the heavy vehicle transport industry
- Runways- unsealed runways incapable of emergency landings to fly injured people out or scheduled clinical visits
- Footpaths that are unformed may force users onto the road and are not fit for purpose
- Carparks that don't meet user requirements may cause reputational damage to council and may be safety liability

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

7.0 FINANCIAL SUMMARY

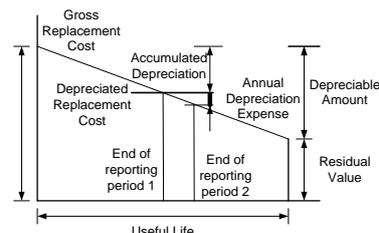
This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The 2018 estimate of the value of assets was used for modelling in this Asset Management Plan as shown below. The 2020 valuation was unsuitable for asset management purposes. The assets were valued on the basis of Fair Value in accordance with the Australian Accounting Standards AASB 116 Property, Plant and Equipment, and AASB 13 Fair Value Measurement.:

Replacement Cost (Current/Gross)	\$172,660,021
Depreciable Amount	\$172,660,021
Depreciated Replacement Cost ⁶	\$76,867,648
Depreciation	\$3,304,813.0



7.1.2 Sustainability of service delivery

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

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁷ 50.89%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 50.89% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

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

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

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$5,361,711 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$4,300,000 on average per year giving a 10 year funding shortfall \$-1,061,711 per year. This indicates that 80.2% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets.

⁶ Also reported as Written Down Value, Carrying or Net Book Value.

⁷ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

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

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) for the 10 year long-term financial plan.

Forecast costs are shown in 2020 dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2021	8800000	0	3200000	3113227	0
2022	8800000	0	3200000	1400000	0
2023	800000	0	3200000	478180	0
2024	800000	0	3200000	0	0
2025	800000	0	3200000	11510016	0
2026	800000	0	3200000	805680	0
2027	800000	0	3200000	617685	0
2028	800000	0	3200000	1462720	0
2029	800000	0	3200000	1386000	0
2030	800000	0	3200000	843600	0
2031	800000	0	3200000	357280	0
2032	800000	0	3200000	1250192	0
2033	800000	0	3200000	1668260	0
2034	800000	0	3200000	1638700	0
2035	800000	0	3200000	1656050	0
2036	800000	0	3200000	2620800	0
2037	800000	0	3200000	1400000	0
2038	800000	0	3200000	399220	0
2039	800000	0	3200000	0	0
2040	800000	0	3200000	3655000	0

7.2 Funding Strategy

The proposed funding for assets is outlined in Council's budget and Long-Term financial plan.

The financial strategy 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 various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this Asset Management Plan are:

- Asset componentisation, segmentation and condition information is based on 2018 information, which has been refined by referring to the 2020 road valuation report.
- The budget allocations between maintenance and renewal are based on engineering judgement

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale⁸ in accordance with Table 7.5.1.

Table 7.5.1: 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 $\pm 2\%$
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 $\pm 10\%$
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 $\pm 25\%$
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 $\pm 40\%$
E. Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	C	
Growth projections	B	
Acquisition forecast	C	Acquisition forecasts are dependent upon the availability of grant funding
Operation forecast	C	Operational costs are not clearly defined
Maintenance forecast	B	

⁸ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

Data	Confidence Assessment	Comment
Renewal forecast - Asset values	B	Asset componentisation and condition information is based on 2018 information, which has been refined by referring to the 2020 road valuation report.
- Asset useful lives	B	
- Condition modelling	B	
Disposal forecast	B	

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

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The source of the data is the Central Darling Shire Council Valuation of Road & Transport Infrastructure for Financial Reporting Purposes, by AssetVal, 30 June

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is Central Darling Shire Council Valuation of Road & Transport Infrastructure for Financial Reporting Purposes, by AssetVal, 30 June .

8.2 Improvement Plan

It is important that an entity recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Asset Management Plan is shown in Table 8.2.

The most significant factor limiting the reliability of forecasts from this AM Plan is the absence of a robust asset register. Because the 2020 valuation report was prepared for accounting compliance purposes only, the roads were not split into segments in the 2020 asset register, making the data unsuitable for asset management purposes. Asset componentisation, segmentation and condition information was therefore based on 2018 information, which has been refined by referring to the 2020 road valuation report.

The top three Improvement Tasks in Table 8.2 Improvement Plan, seek to address this issue.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
Improvement Actions Identified during the 2021 Asset Management Maturity Assessment				
1	Develop a consolidated, integrated, up to date asset register with appropriate components and the required functionality to ensure security and data integrity, which includes all information about each asset sorted by asset group.	Director Shire Services	CDSC Staff	
2	Define and document internal procedures for determining asset replacement and treatment unit rates, not dependent on third parties. Unit rates to be determined by Council to suit local conditions.	Director Shire Services	CDSC Staff	
3	Document methodologies used to carry out consistent asset condition surveys and defect identification assessments, in a Condition Rating Assessment Manual, for each asset class. Asset condition assessment should not be limited to the small sample of assets inspected by the third parties every four years for accounting compliance purposes.	Director Shire Services	CDSC Staff	

Task	Task	Responsibility	Resources Required	Timeline
Outstanding Improvement Actions identified in the 2018 Transport Asset Management Plan				
Task No	Task	Responsibility	Resources Required	Timeline
1	Customer Service Requests received by council to be reviewed to determine areas of concern or complaints relative to assets covered by the Transport AM Plan.	Roads & Assets Engineer/ Customer Service Staff	CDSC Staff	Weekly
2	Continue to monitor any legislative changes applicable to the management of roads and other transport assets.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	Monthly/ Annually
3	Monitor the delivery of Levels of Service. Compare actual performance with target performance. Gather data to ensure that future versions of this Plan are truly reflective of reality.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	Annually
4	Continue to monitor any significant population decline and demographic changes, note any impacts on assets and services	Planning Department/ Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	Annually
5	Consider further changes in technology and how this may impact, both positively and negatively, on roads and other transport assets.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually
6	Consider what demand management strategies council currently uses to shape the use of assets and services or otherwise minimise costs of services relative to transport assets.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually
7	Continue to investigate demand management strategies such as facilitating more efficient use of existing road assets or rationalising the asset portfolio in alignment with agreed levels of service	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	Annually
8	Review existing expenditures for operations and maintenance on the roads and transport	Finance Department/	CDSC Staff	Annually

Task	Task	Responsibility	Resources Required	Timeline
	network and develop a base model of recurrent expenditures that will be required to satisfactorily service any growth or changes to service levels (For example consider \$/asset in the case the aerodrome and other discrete assets). Consider the potential growth in risk inspection activities as a consequence of any increases in the asset base.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer / Works Engineer		
9	Review the impact of asset upgrades on staff numbers, training needs, facilities, resources and equipment, (maintenance vehicles or other specialist equipment). For example, more sealed roads may lead to higher maintenance needs and costs	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	As required/ Annually
10	Improve the capture of details of all assets and improvements in the transport assets inventory. New assets to be added to inventory	Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually
11	Condition rating to be undertaken on all assets in the asset inventory and remaining useful life noted	Roads & Assets Engineer/ Roads Officers/ Administration Officers	CDSC Staff	Bi Annually
12	Identify and record where major service deficiencies exist in the road network.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	As they arise/ Annually
13	Record any high-risk assets that have not already been identified for renewal, replacement or disposal in the current year capital works program.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer	CDSC Staff	Annually
14	Review existing service specifications with respect to response times and desired levels of service	Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually
15	Consider the standards and specifications that are applicable to the replacement and renewal of assets and improvements within road and transport network.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually
16	Rigorously review of the program of capital works proposed with consideration of the renewal demands facing the road network.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually

Task	Task	Responsibility	Resources Required	Timeline
17	Review of processes for update of asset information as a result of asset renewals and disposals addressing both asset inventory and financial data.	Roads & Assets Engineer/ Works Engineer	CDSC Staff	Annually
18	Financial variables, (e.g. unit rates, economic lives, residual values, depreciation schedules and models), to be reviewed and updated for each asset class and sub-category.	Finance Department/ Roads & Assets Engineer	CDSC Staff/ Finance Department	Annually
19	Purchase and implement Asset Management Software to generate a more accurate asset register and associated financial details, work schedules, long term maintenance programmes	Finance Department/ Administration Officers/ Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer/ Roads Officers	CDSC Staff/ Contractor	Software has been purchased and training for staff is ongoing. 1 st July 2018
20	Review acquisition years in the Transport Asset Register and update any discovered oversights in renewals	Roads & Assets Engineer	CDSC Staff	Annually
21	Update condition ratings by inspection of individual assets in the existing Transport Asset Register	Roads & Assets Engineer/ Road Officers	CDSC Staff	Annually
22	Investigate customer service expectations and expected levels of service for future updates of the asset management plan	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer/ Admin Staff	CDSC Staff	Annually
23	Identify and document specific critical assets within the shire.	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer/	CDSC Staff	Outstanding
24	Develop a Corporate & Infrastructure Risk Management Plan	Director Shire Services/Deputy Director Shire Services/ Roads & Assets Engineer/ Works Engineer/	CDSC Staff	Outstanding

8.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of each Council election..

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures 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, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 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.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Central Darling Shire Community Strategic Plan 2017-2023
- Central Darling Shire Delivery Program 2018-21 and Draft Operational Plan 2020-21

10.0 APPENDICES

Appendix A Acquisition Forecast

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2021	8800000	0	0
2022	8800000	0	0
2023	800000	0	0
2024	800000	0	0
2025	800000	0	0
2026	800000	0	0
2027	800000	0	0
2028	800000	0	0
2029	800000	0	0
2030	800000	0	0
2031	800000	0	0
2032	800000	0	0
2033	800000	0	0
2034	800000	0	0
2035	800000	0	0
2036	800000	0	0
2037	800000	0	0
2038	800000	0	0
2039	800000	0	0
2040	800000	0	0

Appendix B Operation Forecast

Operations Forecasts are included in the Maintenance Forecasts

Appendix C Maintenance Forecast

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2021	3200000	0	3200000
2022	3200000	0	3200000
2023	3200000	0	3200000
2024	3200000	0	3200000
2025	3200000	0	3200000
2026	3200000	0	3200000
2027	3200000	0	3200000
2028	3200000	0	3200000
2029	3200000	0	3200000
2030	3200000	0	3200000
2031	3200000	0	3200000
2032	3200000	0	3200000
2033	3200000	0	3200000
2034	3200000	0	3200000
2035	3200000	0	3200000
2036	3200000	0	3200000
2037	3200000	0	3200000
2038	3200000	0	3200000
2039	3200000	0	3200000
2040	3200000	0	3200000

Appendix D Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2021	3113227	1100000
2022	1400000	1100000
2023	478180	1100000
2024	0	1100000
2025	11510016	1100000
2026	805680	1100000
2027	617685	1100000
2028	1462720	1100000
2029	1386000	1100000
2030	843600	1100000
2031	357280	1100000
2032	1250192	1100000
2033	1668260	1100000
2034	1638700	1100000
2035	1656050	1100000
2036	2620800	1100000
2037	1400000	1100000
2038	399220	1100000
2039	0	1100000
2040	3655000	1100000

Appendix E Disposal Summary

Council does not plan to dispose of any transport assets

Appendix F Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2021	880000	0	320000	110000	0	1310000
2022	880000	0	320000	110000	0	1310000
2023	80000	0	320000	110000	0	510000
2024	80000	0	320000	110000	0	510000
2025	80000	0	320000	110000	0	510000
2026	80000	0	320000	110000	0	510000
2027	80000	0	320000	110000	0	510000
2028	80000	0	320000	110000	0	510000
2029	80000	0	320000	110000	0	510000
2030	80000	0	320000	110000	0	510000
2031	80000	0	320000	110000	0	510000
2032	80000	0	320000	110000	0	510000
2033	80000	0	320000	110000	0	510000
2034	80000	0	320000	110000	0	510000
2035	80000	0	320000	110000	0	510000
2036	80000	0	320000	110000	0	510000
2037	80000	0	320000	110000	0	510000
2038	80000	0	320000	110000	0	510000
2039	80000	0	320000	110000	0	510000
2040	80000	0	320000	110000	0	510000