

# CENTRAL DARLING SHIRE COUNCIL



## STORMWATER

## Asset Management Plan



Version 1.0

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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 efficient drainage of stormwater run-off following rainfall events.

### **1.2 Asset Description**

The stormwater network comprises:

- Pipes
- Pits
- Outlets
- Gross Pollutant Traps
- Culverts

The above infrastructure assets have significant total renewal value estimated at \$1,379,427. Valuation for Accounting Compliance Purposes, Stormwater and Other Structures by AssetVal, Property, Plant, Equipment and Infrastructure Consultants 30 June 2019.

### **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.

As a consequence of the Planned Budget, Council may be unable to provide:

- Stormwater services that meet the applicable standards and are reliable and functional
- Replacement of stormwater assets before they reach end of life

### **1.4 Future Demand**

The main demands for new services are created by:

- Climate Change
- Population Change
- Community Expectations
- Increased Regulations

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. Council will consider the following options:

- Reduction of service level
- Education of customers to deal with possible asset failures
- Transfer of management/ownership of assets to other entities

## 1.5 Lifecycle Management Plan

### 1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the stormwater services to the communities of Wilcannia and Menindee is estimated as \$357,500 or \$35,750 on average per year.

## 1.6 Financial Summary

### 1.6.1 What we will do

Estimated available funding for the 10 year period is \$292,000 or \$29,200 on average per year as per the Long-Term Financial plan or Planned Budget. This is 81.68% 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 stormwater services leaves a shortfall of \$6,550 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**

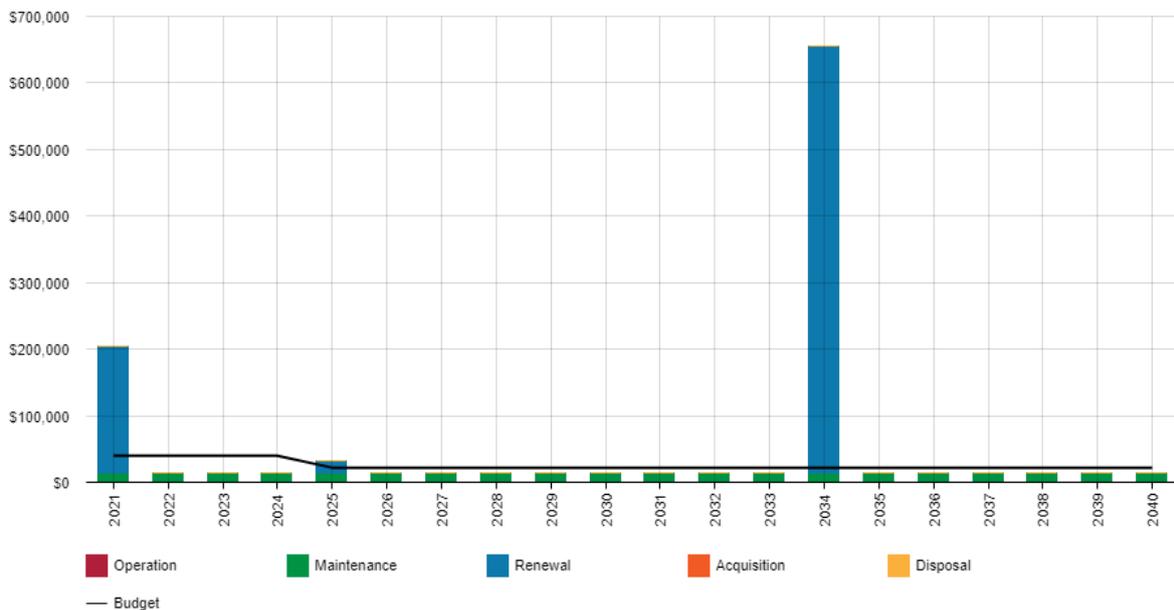


Figure Values are in current dollars.

We plan to provide stormwater services for the following:

- Operation, maintenance, renewal and upgrade of pipes, culverts, pits, outlets and gross pollutant traps as achievable within the annual budgets.
- Upgrade the dilapidated stormwater outlets in Wilcannia.

### 1.6.2 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:

- Replace and/or upgrade the existing pipes, pits, culverts and gross pollutant traps before they reach end of life.
- Install new stormwater drainage in Menindee

### 1.6.3 Managing the Risks

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

The main risk consequences are:

- Failure of stormwater infrastructure
- Interruption to stormwater system from asset failures.

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

- Inspect and monitor all stormwater assets regularly, prioritise and repair defects in accordance with our inspection schedule to ensure functionality and safety.
- Review and update the Stormwater Management Plan.

## 1.7 Asset Management Practices

Our systems to manage assets include:

- Civica/ Practical Financial System
- AssetFinda

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model. The Asset Register was used to forecast the renewal life cycle costs for this Asset Management Plan.

## 1.8 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 the asset register
- Separate job cost numbers in Councils financial system. Split maintenance and operations. Split capital into renewal and acquisition. This change was made July 1 2020, to improve how Council accounts for asset lifecycle expenditures. System to be implemented by all staff and compliance monitored. This will improve financial data for the next version of this AM Plan.
- Undertake customer satisfaction survey to consult with the community and identify the desired level of service. This is planned for mid 2021 with plans to employ a community consultation officer at Council

## 2.0 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 with the other planning documents. This should include the Asset Management Policy and Asset Management Strategy where these have been developed 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
- Central Darling Shire Stormwater Management Plan

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide a safe, reliable stormwater supply and demonstrate compliance with the regulatory requirements.

**Table 2-1: Assets Covered by this Plan**

Asset Category	Dimension or No#	Replacement Value
225mm dia PVC pipe	288m	\$38,880
300mm dia PVC Pipe	203m	\$35,525
450mm dia concrete pipe	871m	\$348,400
750mm dia concrete pipe	562m	\$435,550
900x600 concrete box culvert	33m	\$37,950
Grated inlet pits (Concrete)	27	\$59,400
Gross pollutant trap	7	\$337,350
Headwall (concrete) 300 mm	3	\$5,211
Headwall (concrete) 450 mm	15	\$8,685
Junction pit (concrete)	20	\$47,600
Junction pit (concrete) 1.05M	1	\$1,700
Kerb inlet pits (concrete) 900mm	8	\$17,160
Outlet headwall and integral energy dissipator	8	\$6,016
		\$1,379,427

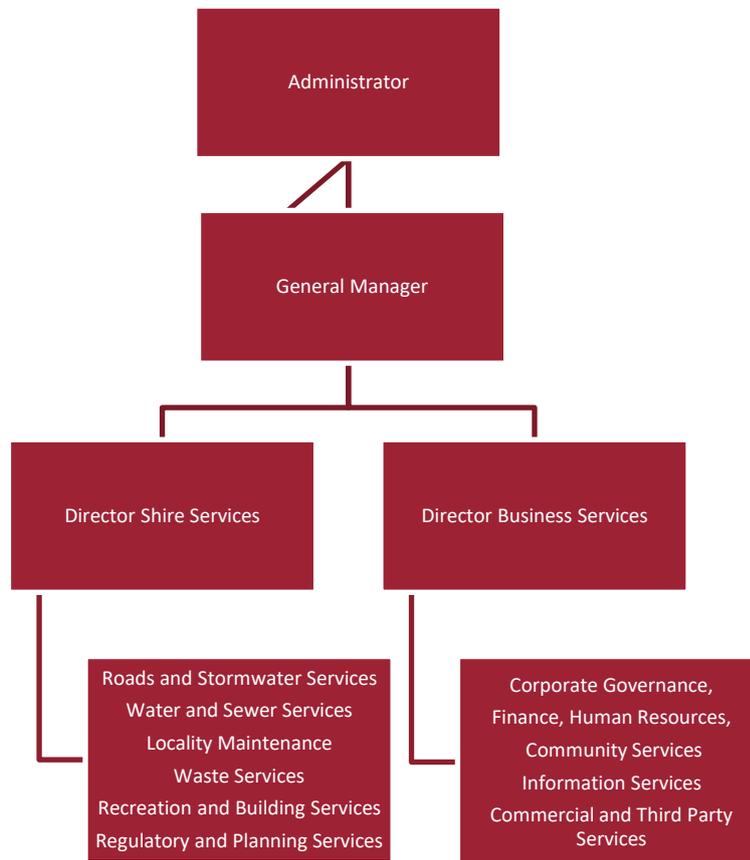
These assets are used to provide safe and efficient stormwater capturing throughout the shire network. The infrastructure assets included in this plan have a total replacement value of insert \$1,379,427.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.2.

**Table 2-2: Key Stakeholders in the 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 on all the stormwater 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 Council's; Emergency services; Utility companies; Local Businesses and; Federal and State Government authorities & agencies

Our organisational structure for service delivery from infrastructure assets is detailed on the following page.



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

Key elements of the planning framework are

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

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

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

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

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

### 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 3.1.

**Table 3-1: Goals and how these are addressed in this Plan**

Goal	Objective	How Goal and Objectives are addressed in AM Plan
<b>Environment</b> A protected and enhanced natural and built environment	Stormwater drainage meet acceptable standards	Stormwater AM Plan shows how Council plans to maintain and operate a stormwater network that benefits its residents. Development of a Stormwater AM plan is best practice in the sustainable management of a stormwater drainage network.
<b>Civic Leadership</b> A consultative and professional organisation providing a high standard and efficient delivery of service	Effective communication and consultation with our community	The Stormwater AM Plan is a transparent and open document that explains Council's intentions in maintaining and operating a stormwater network. It explains the funding needs of the stormwater network to Councillors and the community.
	Effective strategic and business planning processes	The Stormwater AM Plan allows Council to plan for the management of the stormwater network, rather than simply waiting until the infrastructure fails before it is repaired or replaced. Assets reaching the end of their useful life are identified and prioritised.
	Improved management and delivery of Council services	The Stormwater AM Plan will enable better delivery of stormwater services to the community through the more efficient allocation of limited funds to Stormwater projects. It will allow Council to obtain better value for money, through improved project prioritisation and planning.

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

### 3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Stormwater service are outlined in Table 3.2.

**Table 3-2: Legislative Requirements**

Legislation	Requirement
Local Government Act, 1993	This is the Act that provides for local government in NSW. It provides the legal framework for an effective, environmentally responsible and open system of local government in the State.
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.
Native Vegetation Act 2003	This act relates to the sustainable management and conservation of native vegetation. It aims to protect native vegetation of high conservation value and encourage revegetation and rehabilitation of land with appropriate vegetation.
Environmental Planning and Assessment Act 1997	This Act institutes a system of environmental planning and assessment in the State of NSW.

### 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
Stormwater is managed throughout each community	Stormwater drainage system functions to an acceptable standard. Number of customer service requests.	Less than 1 per month	Expected to remain the same
	Council maintains a network of kerb, gutter and stormwater drainage to an appropriate standard. Number of customer service requests	Less than 1 per month	Expected to remain the same

Customer values from *Community Strategic Plan 2017-27, Goal 3: Strategic Focus – Environment.*

### 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 3.4 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 3-3: Customer Level of Service Measures**

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
<b>Condition</b>	Condition of stormwater assets	Condition assessment performed for mandated valuation. Dates of inspections 3-5 June 2019		With limited budget for stormwater asset renewal, condition is likely to deteriorate.

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
	<b>Confidence levels</b>		Medium (Professional judgement supported by data sampling A sample of the assets only was inspected by the valuer.	Medium (Professional judgement supported by data sampling)
<b>Function</b>	Stormwater drainage system functions to an acceptable standard.	Number of flooding and adverse ponding occurrences following wet weather. Number of complaints/customer service requests.	Poor. Issues at known problem locations following rainfall events.	Not likely to change. No budget to rectify defects or upgrade the network.
	<b>Confidence levels</b>		Medium Professional judgement supported by data sampling	Medium Professional judgement supported by data sampling
<b>Capacity</b>	Stormwater assets have the capacity to meet community demand	Number of complaints where the optimum solution to the problem would be network augmentation	Low number of complaints, mainly relating to flooding of private property.	Likely to stay the same
	<b>Confidence levels</b>		Medium Professional judgement supported by data sampling	Medium Professional judgement supported by data sampling

### 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.

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**
<b>TECHNICAL LEVELS OF SERVICE</b>				
<b>Acquisition</b>	Upgrade stormwater assets to increase capacity to better handle stormwater flows	Reduction in flooding and ponding following rainfall events	No network upgrades planned	Systematic program of upgrades
		<b>Budget</b>	<i>Nil</i>	<i>To be determined</i>
<b>Operation and Maintenance (combined)</b>	Keeps the stormwater system in service	Stormwater system is reliable and functional. Number of unplanned reactive repairs.	Inspection and monitoring of stormwater assets, with defects prioritised and repaired as achievable within budget	Review and update Council's Stormwater Management Plan, to enable strategic, systematic and planned management of the stormwater networks in each community.
		<b>Budget</b>	<i>\$15,000 per year</i>	<i>\$30,000 one off in addition to \$15,000 per year</i>
<b>Renewal</b>	Replace aging stormwater assets before they reach end of life and fail.	Value of assets at condition 4 or 5	Limited renewal possible within current budget	There are stormwater assets in Menindee that have reached end of life. They require replacement in the short term
	Replace headwalls in Wilcannia	Replacement of failed headwalls will prevent erosion of riverbank. No# replaced.	Four headwalls constructed in 1974 to be replaced at a rate of one per year, at a cost of \$25,000 each	Four headwalls constructed in 1974 to be replaced at a rate of one per year, at a cost of \$25,000 each
		<b>Budget</b>	<i>\$100,000 over 4 years for headwalls + \$7000 per year for general renewals in subsequent years.</i>	<i>\$90,000 to stormwater assets with condition grade 5 in Menindee. In addition to \$100,000 over 4 years for headwalls and \$7000 per year for general renewals.</i>
<b>Disposal</b>	Council does not dispose of stormwater assets			

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, 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	Estimated resident population in 2019 (ABS) was 1,839 persons.	Population decline	Slow population decline is expected to have minimal impact on the demand for stormwater services	Monitor customer service requests and other feedback from the community to determine any new trends in community priorities.
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. Stormwater network may be unable to cope.	Monitor trends and plan asset lifecycle activities accordingly
Expectations	Limited expectations regarding Council's provision of stormwater services	Higher expectations and levels of awareness	Community demands for improved stormwater service. Prolonged ponding of stormwater runoff following a rainfall 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.
Regulation	Council's stormwater assets may not satisfy current standard.	Higher standards imposed on Council by regulators	Council may need to upgrade stormwater assets to meet new standards.	Review and update Council's Stormwater Management Plan, to identify potential issues Council may be facing.

### 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 the 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 and ponding of run-off following rainfall events, due to limited capacity of the network.	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 CCTV inspection of pipe assets.	Plan stormwater lifecycle activities to suit the new climate.

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

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
Increase capacity of stormwater network at key locations	Climate change may increase the intensity of rainfall events resulting in increased run-off at peak times	Increasing the capacity of pipes and drainage structures will enable the network to cope with anticipated additional flows. Investigate further in Stormwater Management Plan.

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed 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.

Central Darling Shire Council provides a stormwater services to all towns and villages within the Shire. The majority of assets covered in this plan refer to Wilcannia and Menindee. Whilst Ivanhoe, Menindee, Sunset Strip and Tilpa have minor culverts, kerb and gutter and headwall outlets no significant infrastructure exists such as Gross Pollutant Traps, Pits and pipes.

Outlets at Wilcannia and Menindee discharge into the Darling River. Ivanhoe and White Cliffs limited outlets discharge into local catchment areas and dams. Dams are not considered as part of this plan.

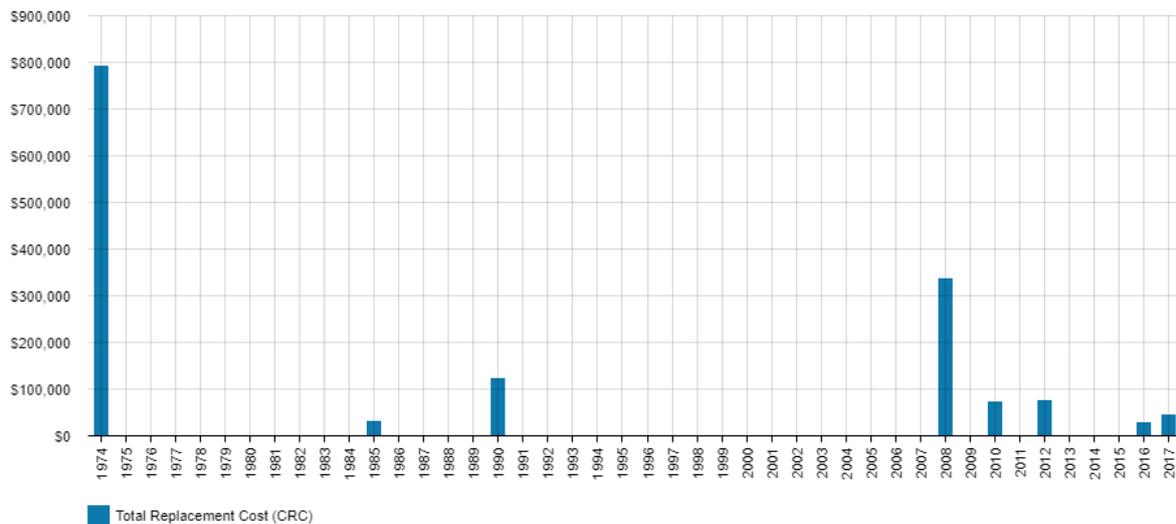
The age profile of the assets included in this AM Plan are shown in Figure 5.1.1.

**Table 5.1.1: Assets covered by this Plan**

Asset Category	Dimension	Replacement Value
<b>Menindee</b>		
300mm dia PVC Pipe	203m	\$35,525
450mm dia concrete pipe	379m	\$151,600
Gross pollutant trap	2	\$63,700
Headwall (concrete) 300 mm	3	\$5,211
Headwall (concrete) 450 mm	15	\$8,685
Junction pit (concrete)	13	\$35,700
Outlet Headwall and integral energy dissipator	3	\$1,737
<b>Wilcannia</b>		
225mm dia PVC pipe	288m	\$38,880
450mm dia concrete pipe	492m	\$196,800
750mm dia concrete pipe	562m	\$435,550
900x600 concrete box culvert	33m	\$37,950
Grated inlet pits (Concrete)	27	\$59,400
Gross pollutant trap	5	\$273,650
Junction pit (concrete)	7	\$11,900

Asset Category	Dimension	Replacement Value
Junction pit (concrete) 1.05M	1	\$1,700
Kerb inlet pits (concrete) 900mm	8	\$17,160
Outlet headwall and integral energy dissipator	5	\$4,279
	Total	\$1,379,427

Figure 5.1.1: Asset Age Profile



All figure values are shown in current day dollars.

The stormwater network provided by Central Darling Shire Council is ageing. The majority of Stormwater assets were built under the “Red Scheme” in 1974.

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. 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
Wilcannia	The majority of assets are in fair condition except the stormwater outlets into the Darling River. High river levels, erosion and scouring have undermined the outlet structures and failed. Upgrade/ replacements of 4 structures are planned and funded.
Menindee	Local flooding occurs from Menindee St to Candilla street following heavy rainfall events. The existing stormwater assets are not functioning and new pipes and pits are required to manage stormwater runoff.

These service deficiencies were identified from local knowledge and Engineering staff condition assessments.

### 5.1.3 Asset condition

Condition is monitored annually by Council staff and by professional asset valuers every 4 years. Additional asset condition assessments have recently been completed by Engineering staff.

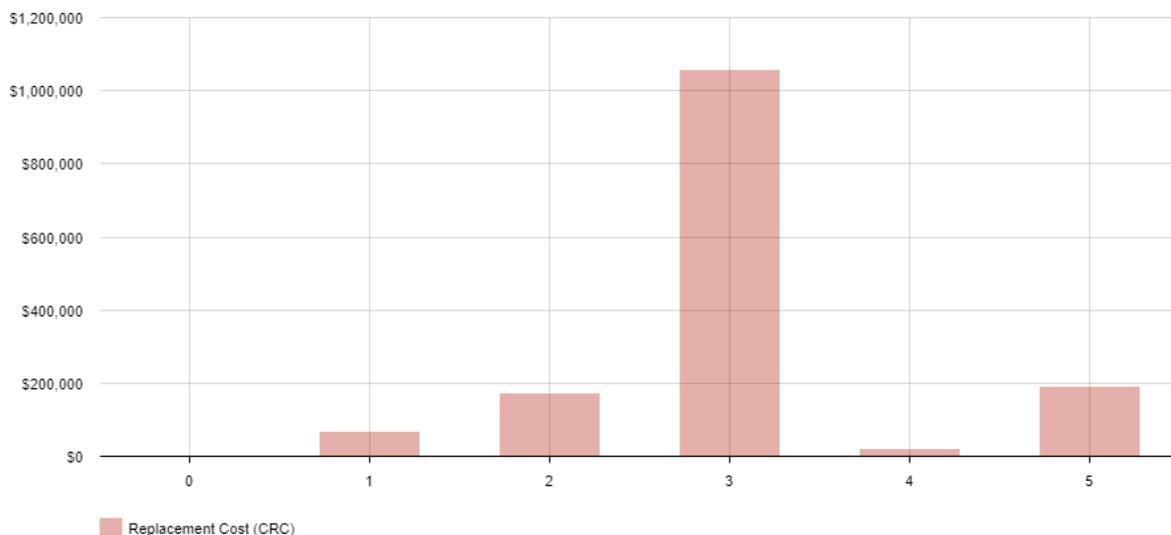
Condition is measured using a 1 – 5 grading system<sup>3</sup> as detailed in Table 5.1.3. It is important that consistent condition grades be used in reporting various assets across an organisation. This supports effective communication. At the detailed level assets may be measured utilising different condition scales, however, for reporting in the AM plan they are all translated to the 1 – 5 grading scale.

**Table 5.1.3: Simple Condition Grading Model**

Condition Grading	Description of Condition
1	<b>Very Good:</b> only planned maintenance required
2	<b>Good:</b> minor maintenance required plus planned maintenance
3	<b>Fair:</b> significant maintenance required
4	<b>Poor:</b> significant renewal/rehabilitation required
5	<b>Very Poor:</b> 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**



Council has plans in place to renew the headwalls in Wilcannia with a condition 5 rating in the next 5 years.

All figure values are shown in current day dollars.

## 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.

<sup>3</sup> IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

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 \$
2019/20	\$15,000
2020/21	\$15,000
2021/22	\$15,000

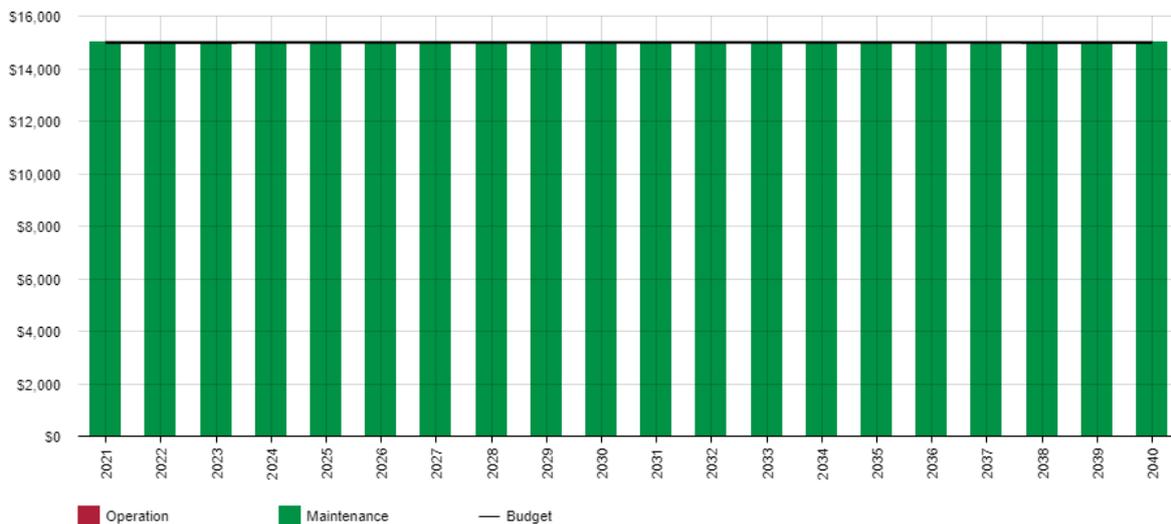
Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified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

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

**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.

Council undertakes routine maintenance activities to provide a level of service within allocated budget constraints in the most cost-effective manner. Reactive maintenance resulting from asset failures can, sometimes, exceed allocated budget constraints.

### 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 5 June 2019

**Table 5.3: Useful Lives of Assets**

Asset (Sub)Category	Useful life
PVC pipe 225mm and 300mm dia	70
Concrete pipe 450mm and 750mm dia	60
Concrete box culvert 900x600	70
Grated inlet pits (Concrete)	60
Gross pollutant trap	40
Headwall (concrete)	70
Junction pit (concrete)	70
Kerb inlet pits (concrete) 900mm	60
Outlet headwall and integral energy dissipator	60

The estimates for renewals in this Asset Management Plan were based on the asset register method. Some of these useful lives may be too low. For instance, for concrete pipes, pits and culverts a useful life of 80 years may be more appropriate. With more robust condition assessment information, it may be possible to extend asset useful lives.

#### 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 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).<sup>4</sup>

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

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

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

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
Criticality	40%
Condition	40%
Asset Age	10%
Cost Benefit	10%
Total	100%

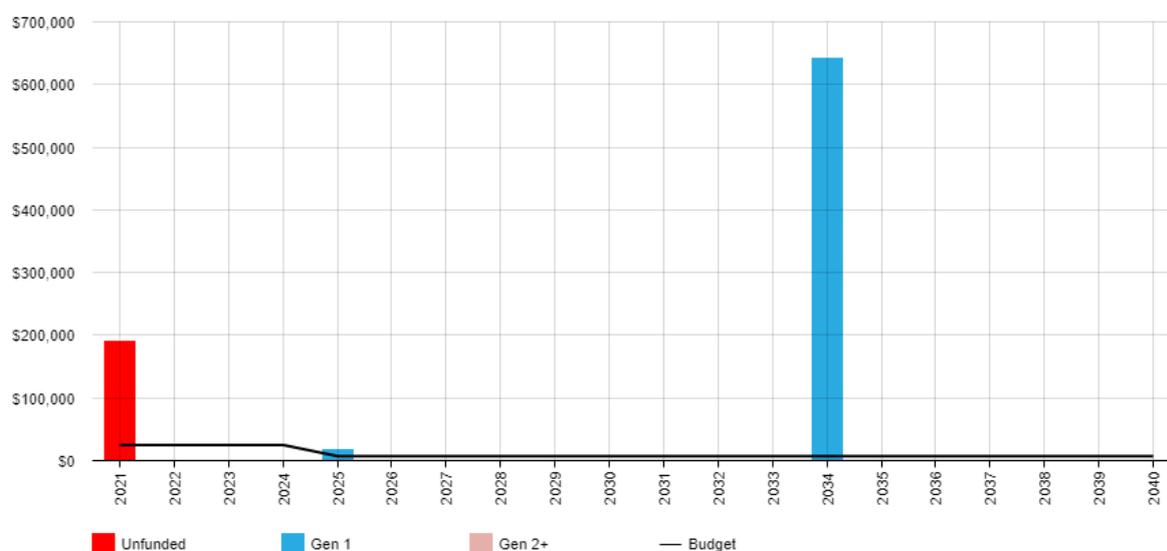
#### 5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. 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.

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

**Figure 5.4.1: Forecast Renewal Costs**



All figure values are shown in current day dollars.

The peak in 2021 represents the assets that are presently and condition grade 5, which require replacement now as they have reached end of life. They are the outlet headwalls and integral energy dissipators in Wilcannia and five pipelines in Menindee. The four outlets in Wilcannia will be funded from Council’s budget and will be replaced at a rate of one per year starting in 2020/21. At this time there is no renewal budget allocated for the Menindee pipelines.

The renewal figure is very lumpy with a considerable peak shown in 2034. It is not realistic that the overwhelming bulk of Council’s stormwater assets will reach end of life in the same year, even if they were constructed at the same time (1974). Assets deteriorate at different rates as they are exposed to a range of varying factors over their useful life. For example, many concrete pipe culverts may in reality have a useful life that exceeds that shown in the asset register. It is recommended that the remaining useful lives of pipe culverts be extended, informed by more robust condition information. When Council’s valuers prepared an updated valuation of Council’s stormwater assets in 2019, they only inspected a small sample of assets. These are likely to be the small number of assets now with condition grades other than 3 (fair). To obtain a more robust asset register, with reliable useful lives that can be used with confidence to predict renewal needs, more asset condition data is required.

## 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. They may result from growth, demand, social or environmental needs. Assets may also be donated to the 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. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

**Table 5.5.1: Acquired Assets Priority Ranking Criteria**

Criteria	Weighting
Criticality	40%
Condition	40%
Asset Age	10%
Cost Benefit	10%
Total	100%

**Summary of future asset acquisition costs**

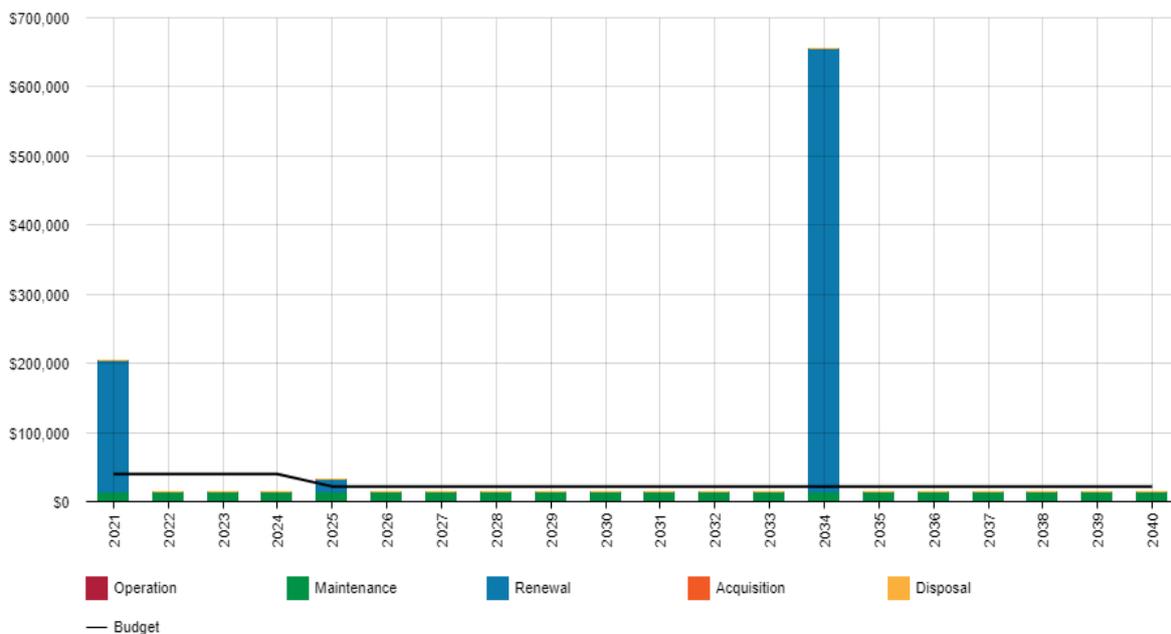
Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding. **No acquisitions are planned at this time.**

**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

Renewals are to be funded through Council’s capital works program and grant income where available. The spike in year 2034 renewals is due to the majority of Stormwater assets reaching end of useful life, they were built in 1974 with a 60 year useful life. Note, further condition assessments and confidence in data may change this.

## 6.0 RISK MANAGEMENT PLANNING

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

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

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

### 6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. 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
Pipes, Pits, Outlets, GPT’s, Culverts	Breakdown and failure, joint displacements, blockages.	Local flooding and surcharge of stormwater, erosion, property damage.

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

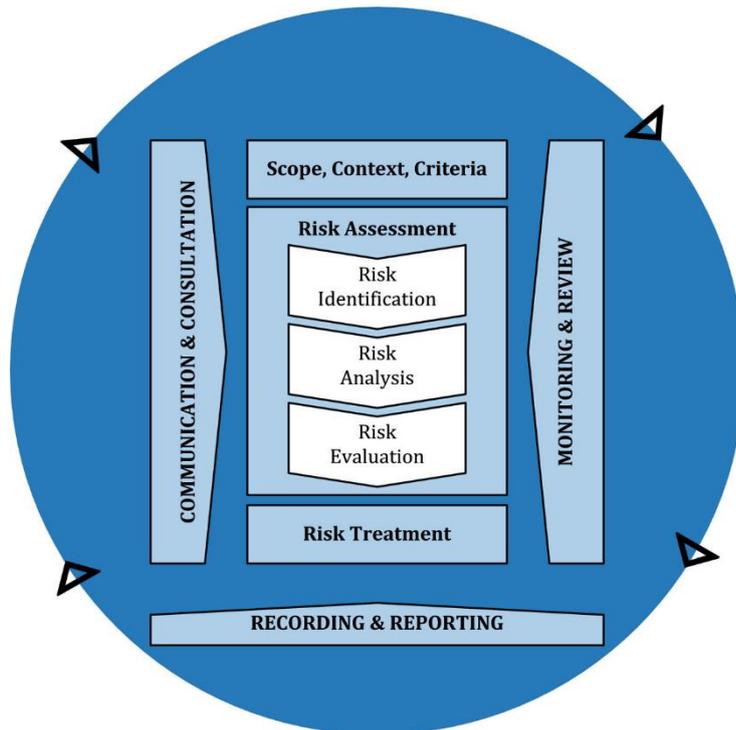
The risk management process used is shown in Figure 6.2 below.

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.

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

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



**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
Pipe	Breakdown failure, joint displacement. Blockage caused by siltation, debris, tree roots and other services such as Telstra	H	Replacement, repair, realignment  Cleaning and root cutting  Relocation of other services	M - H	\$5,000
Pits	Blockage, Failure, Breach, Grate failure	H	Cleaning, Repair/Renewal	M - H	\$5,000
Water Quality Improvement Devices (GPT)	Failure, Breach, Breakdown, Vandalism	H	Repair, replacement renewal	M	\$8,000
Open table drains	Design capacity reduction due to siltation	H	Regular removal vegetation and re-excavation if required.	M	\$6,000
Outlets and Dissipaters	Erosion and asset failure	H	Replacement	M	\$25,000

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', 1 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
Stormwater asset failure	Asset condition assessments to identify and prioritise repairs, replacements and upgrades.

## **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:

- Replacement/ Upgrade of the existing pipes, pits, culverts and GPT's

### **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:

- Service disruption to users from stormwater asset breaks and blockages

### **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:

- Risk of property damage
- Risk of stormwater service disruption

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

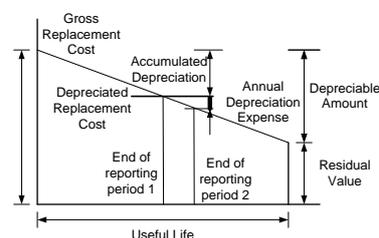
#### 7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. The assets are valued at Fair Value in accordance with:

- Australian Accounting Standards – AASB 116 Property, Plant and Equipment;
- Australian Accounting Standards – AASB 13 Fair Value Measurement; and
- The Australian Property Institute’s practice standards.

By AssetVal Property, Plant and Equipment Consultants 30 June 2019.

Current (Gross) Replacement Cost	\$1,379,427
Depreciable Amount	\$1,379,427
Depreciated Replacement Cost <sup>7</sup>	\$575,332
Depreciation	\$25,388



#### 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 Ratio<sup>8</sup> 68%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 63% 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.

<sup>7</sup> Also reported as Written Down Value, Carrying or Net Book Value.

<sup>8</sup> AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$35,750 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$29,200 on average per year giving a 10 year funding shortfall or funding excess of \$6,550 per year. This indicates that 82% of the forecast costs needed to provide the services documented in this Asset Management Plan are accommodated in the proposed budget. This excludes acquired assets.

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	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Budget
2021	\$0	\$0	\$15,000	\$190,000	\$40,000
2022	\$0	\$0	\$15,000	\$0	\$40,000
2023	\$0	\$0	\$15,000	\$0	\$40,000
2024	\$0	\$0	\$15,000	\$0	\$40,000
2025	\$0	\$0	\$15,000	\$17,500	\$22,000
2026	\$0	\$0	\$15,000	\$0	\$22,000
2027	\$0	\$0	\$15,000	\$0	\$22,000
2028	\$0	\$0	\$15,000	\$0	\$22,000
2029	\$0	\$0	\$15,000	\$0	\$22,000
2030	\$0	\$0	\$15,000	\$0	\$22,000
2031	\$0	\$0	\$15,000	\$0	\$22,000
2032	\$0	\$0	\$15,000	\$0	\$22,000
2033	\$0	\$0	\$15,000	\$0	\$22,000
2034	\$0	\$0	\$15,000	\$640,930	\$22,000
2035	\$0	\$0	\$15,000	\$0	\$22,000
2036	\$0	\$0	\$15,000	\$0	\$22,000

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Budget
2037	\$0	\$0	\$15,000	\$0	\$22,000
2038	\$0	\$0	\$15,000	\$0	\$22,000
2039	\$0	\$0	\$15,000	\$0	\$22,000
2040	\$0	\$0	\$15,000	\$0	\$22,000

## 7.2 Funding Strategy

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

The financial strategy of the entity 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 if additional assets are added to service.

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 register information has been based on 2019 stormwater asset revaluation undertaken by AssetVal, Property, Plant, Equipment and Infrastructure Consultants.
- However, asset identified by AssetVal as condition grade 5, have had the remaining useful life adjusted to show that the assets have reached end of life and have no service potential remaining.
- Budget information interpreted from Council spreadsheet "Copy of SS Budget 2021 ReeceV5 100052020", showing actual April 2020 and 2019 and budget 2021.

## 7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale<sup>9</sup> in accordance with Table 7.5.1.

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

**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	
Renewal forecast		
- Asset values	B	
- Asset useful lives	C	Asset useful lives reflect age not condition, which is not ideal.
- Condition modelling	C	Asset condition data based on a sample of assets only.
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 Valuation for Accounting Compliance Purposes, Stormwater Infrastructure and Other Assets, undertaken by AssetVal, Property, Plant, Equipment and Infrastructure Consultants, for 30 June 2019.

#### 8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is the Valuation for Accounting Compliance Purposes, Stormwater Infrastructure and Other Assets, undertaken by AssetVal, Property, Plant, Equipment and Infrastructure Consultants, for 30 June 2019.

### 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 for stormwater assets.

Because the 2019 valuation report was prepared for accounting compliance purposes only, asset useful lives were based upon age, not condition. Asset condition was determined by condition assessment of a very small sample of Central Darling Shire stormwater assets and the remainder vis desktop assessment. There is room for improvement in the procedures used to collect and store stormwater asset data

The top three Improvement Tasks in Table 8.2 Improvement Plan, seek to address this issue. Note the similarity between the highest priority tasks in 2021 and 2018.

**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 Stormwater Asset Management Plan				
4.	Audit the Stormwater Assets register and breakdown the large assets into individual components	DSS	staff, consultant	12 months
5.	Update the asset register and add any unregistered assets	DSS	Staff, consultant	12 months
6.	Inspect and assess the condition of the stormwater assets in order to estimate the remaining useful life and reassess the useful life of assets	DSS	Staff, consultant	12 months
7.	Establish a reporting system to update the asset register with feedback from the field including new assets, replaced assets, renewed assets etc.	DSS, DBS	Staff, IT	12 months
8.	Separate stormwater related job costs. Maintenance job costs should be split into reactive, planned and cyclic. Capital job costs into: renewal, upgrade and new.	DSS, DBS, Senior Accountant	Civica guidance	Complete for Capital costs
9.	Undertake a customer satisfaction survey and consult with the community to identify the desired levels of service.	DSS, GM	Administration, possibly consultant	12 months
10	Install all Asset data on AssetFinda and dedicate staff to its continued use, monitoring and upkeep.	DSS, DBS	staff	12 months

### 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](http://www.ipwea.org/IIMM)
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, [www.ipwea.org/namsplus](http://www.ipwea.org/namsplus).
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- 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*

Council does not plan to acquire any new stormwater assets.

## **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	\$15,000		\$15,000
2022	\$15,000		\$15,000
2023	\$15,000		\$15,000
2024	\$15,000		\$15,000
2025	\$15,000		\$15,000
2026	\$15,000		\$15,000
2027	\$15,000		\$15,000
2028	\$15,000		\$15,000
2029	\$15,000		\$15,000
2030	\$15,000		\$15,000
2031	\$15,000		\$15,000
2032	\$15,000		\$15,000
2033	\$15,000		\$15,000
2034	\$15,000		\$15,000
2035	\$15,000		\$15,000
2036	\$15,000		\$15,000
2037	\$15,000		\$15,000
2038	\$15,000		\$15,000
2039	\$15,000		\$15,000
2040	\$15,000		\$15,000

## Appendix D Renewal Forecast Summary

*Table D3 - Renewal Forecast Summary*

Year	Renewal Forecast	Renewal Budget
2021	\$190,000	\$25,000
2022	\$0	\$25,000
2023	\$0	\$25,000
2024	\$0	\$25,000
2025	\$17,500	\$7,000
2026	\$0	\$7,000
2027	\$0	\$7,000
2028	\$0	\$7,000
2029	\$0	\$7,000
2030	\$0	\$7,000
2031	\$0	\$7,000
2032	\$0	\$7,000
2033	\$0	\$7,000
2034	\$640,930	\$7,000
2035	\$0	\$7,000
2036	\$0	\$7,000
2037	\$0	\$7,000
2038	\$0	\$7,000
2039	\$0	\$7,000
2040	\$0	\$7,000

## D.4 –Renewal Plan

Detail output from NAMS+ Report for the Register Method

### Appendix 10 Year Report

Category	Asset Name	Town	Remaining Life	Register Renewal Year	Forecast Renewal Year	Renewal Cost	Useful Life
outlet Headwall and integral energy dissipator	Cleaton Street	Wilcannia	-1	2020	2021	\$923	46
outlet Headwall and integral energy dissipator	Martin Street	Wilcannia	-1	2020	2021	\$923	46
outlet Headwall and integral energy dissipator	Field Street	Wilcannia	-1	2020	2021	\$587	46
outlet Headwall and integral energy dissipator	Byrnes Street	Wilcannia	-1	2020	2021	\$923	46
450mm dia concrete pipe	Perry St	Menindee	-1	2020	2021	\$22,400	30
450mm dia concrete pipe	Perry St	Menindee	-1	2020	2021	\$10,000	30
450mm dia concrete pipe	Yartla St	Menindee	-1	2020	2021	\$7,600	30
450mm dia concrete pipe	Darling St	Menindee	-1	2020	2021	\$41,200	30
450mm dia concrete pipe	Perry St	Menindee	-1	2020	2021	\$8,800	30
300mm Dia PVC Pipe	Menindee St	Menindee	4	2025	2025	\$17,500	35
750mm dia concrete pipe	Byrnes Street	Wilcannia	13	2034	2034	\$74,400	60
750mm dia concrete pipe	Myers Street	Wilcannia	13	2034	2034	\$113,150	60
750mm dia concrete pipe	Cleaton Street	Wilcannia	13	2034	2034	\$82,150	60
750mm dia Concrete Pipe	Martin Street	Wilcannia	13	2034	2034	\$165,850	60
450mm dia concrete pipe	Field Street	Wilcannia	13	2034	2034	\$196,800	60
Kerb inlet pits (concrete) 900mm	Cleaton Street	Wilcannia	13	2034	2034	\$4,290	60
Kerb inlet pits (concrete) 900mm	Martin Street	Wilcannia	13	2034	2034	\$4,290	60
Junction pit (concrete) 1.05M	Field Street	Wilcannia	23	2044	2044	\$1,700	70
Junction pit (concrete)	Byrnes Street	Wilcannia	23	2044	2044	\$5,100	70
Junction pit (concrete)	Myers Street	Wilcannia	23	2044	2044	\$5,100	70
Junction pit (concrete)	Martin Street	Wilcannia	23	2044	2044	\$1,700	70
900x600 concrete box culvert	Byrnes Street	Wilcannia	23	2044	2044	\$37,950	70
Grated inlet pits (Concrete)	Field Street	Wilcannia	24	2045	2045	\$8,800	60
Grated inlet pits (Concrete)	Byrnes Street	Wilcannia	24	2045	2045	\$11,000	60
Grated inlet pits (Concrete)	Myers Street	Wilcannia	24	2045	2045	\$11,000	60
Gross pollutant trap	Field Street	Wilcannia	27	2048	2048	\$31,850	40
Gross pollutant trap	Byrnes Street	Wilcannia	27	2048	2048	\$60,450	40
Gross pollutant trap	Myers Street	Wilcannia	27	2048	2048	\$60,450	40
Gross pollutant trap	Cleaton Street	Wilcannia	27	2048	2048	\$60,450	40
Gross pollutant trap	Martin Street	Wilcannia	27	2048	2048	\$60,450	40
Gross pollutant trap	Yartla St	Menindee	27	2048	2048	\$31,850	40
Gross pollutant trap	Perry St	Menindee	27	2048	2048	\$31,850	40
Junction pit (concrete)	Perry St	Menindee	39	2060	2060	\$1,700	70
Junction pit (concrete)	Yartla St	Menindee	39	2060	2060	\$1,700	70
Junction pit (concrete)	Perry St	Menindee	39	2060	2060	\$1,700	70
300mm Dia PVC Pipe	Menindee St	Menindee	39	2060	2060	\$3,325	70
Junction pit (concrete)	Menindee St	Menindee	39	2060	2060	\$6,800	70
450mm dia concrete pipe	Haberfield St	Menindee	49	2070	2070	\$10,000	60
450mm dia concrete pipe	Yartla St	Menindee	49	2070	2070	\$12,000	60

Category	Asset Name	Town	Remaining Life	Register Renewal Year	Forecast Renewal Year	Renewal Cost	Useful Life
450mm dia concrete pipe	Haberfield St	Menindee	49	2070	2070	\$12,000	60
450mm dia concrete pipe	Haberfield St	Menindee	49	2070	2070	\$12,000	60
Grated inlet pits (Concrete)	Cleaton Street	Wilcannia	51	2072	2072	\$4,400	60
Grated inlet pits (Concrete)	Martin Street	Wilcannia	51	2072	2072	\$24,200	60
Kerb inlet pits (concrete) 900mm	Field Street	Wilcannia	51	2072	2072	\$8,580	60
450mm dia concrete pipe	Nora St	Menindee	55	2076	2076	\$9,600	60
450mm dia concrete pipe	Darling St	Menindee	55	2076	2076	\$6,000	60
outlet Headwall and integral energy dissipator	Myers Street	Wilcannia	59	2080	2080	\$923	70
225mm dia PVC pipe	Martin Street	Wilcannia	61	2082	2082	\$38,880	70
Headwall (concrete) 450 mm	Nora St	Menindee	65	2086	2086	\$7,527	70
Junction pit (concrete)	Darling St	Menindee	65	2086	2086	\$3,400	70
Headwall (concrete) 450 mm	Haberfield St	Menindee	66	2087	2087	\$1,158	70
Junction pit (concrete)	Haberfield St	Menindee	66	2087	2087	\$3,400	70
300mm Dia PVC Pipe	Wilcannia St	Menindee	66	2087	2087	\$5,775	70
Junction pit (concrete)	Wilcannia St	Menindee	66	2087	2087	\$15,300	70
headwall (concrete) 300 mm	Wilcannia St	Menindee	66	2087	2087	\$5,211	70
300mm Dia PVC Pipe	Holding St	Menindee	66	2087	2087	\$3,675	70
outlet Headwall and integral energy dissipator	Holding St	Menindee	66	2087	2087	\$579	70
300mm Dia PVC Pipe	Pruella St	Menindee	66	2087	2087	\$2,625	70
Junction pit (concrete)	Pruella St	Menindee	66	2087	2087	\$1,700	70
300mm Dia PVC Pipe	Pruella St	Menindee	66	2087	2087	\$2,625	70
outlet Headwall and integral energy dissipator	Pruella St	Menindee	66	2087	2087	\$579	70
outlet Headwall and integral energy dissipator	Pruella St	Menindee	66	2087	2087	\$579	70

## **Appendix E    Disposal Summary**

Council does not plan to dispose of any stormwater assets.

## Appendix F Budget Summary by Lifecycle Activity

Describe the assumptions and include relevant information relating to the Planned Budget estimates.

*Table F1 – Budget Summary by Lifecycle Activity*

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2021	\$48,000	\$0	\$15,000	\$93,356	\$0	\$70,000
2022	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2023	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2024	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2025	\$0	\$0	\$15,000	\$17,500	\$0	\$22,000
2026	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2027	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2028	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2029	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2030	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2031	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2032	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2033	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2034	\$0	\$0	\$15,000	\$640,930	\$0	\$22,000
2035	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2036	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2037	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2038	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2039	\$0	\$0	\$15,000	\$0	\$0	\$22,000
2040	\$0	\$0	\$15,000	\$0	\$0	\$22,000