



Stormwater Asset Management Plan



Scenario 2 Version 1

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1. EXECUTIVE SUMMARY

Context

The Berri Barmera Council’s Stormwater Drainage Infrastructure are mainly located through the Council township areas to mitigate risks associated with flooding to protect private property and personal safety of its residents.

The major issue with stormwater drainage are frequently blockage of pipes, pipes and stormwater ponds under capacity and uncertainty of condition and remaining useful lives of stormwater drainage infrastructure.

These issues may cause flooding of properties, damages to other infrastructure services, such as road and footpath, or even personal injuries.

The Stormwater drainage Infrastructure Service

The Stormwater infrastructure network comprises:

- Spoon Drains
- Concrete Pipes
- Plastram Pipes
- PVC Pipes
- Ribloc Pipes
- Box Culverts
- Grated Inlet Pits
- Side Entry Pits
- Maintenance Holes
- Gross Pollutant Traps
- Valves
- Headwalls
- Junction Boxes
- Pump Sumps
- Pumps

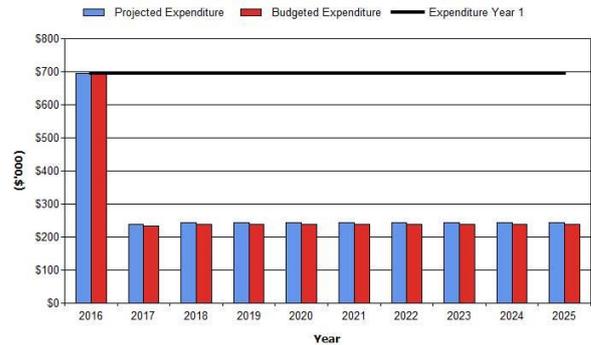
These infrastructure assets have a replacement value of \$12,995,000.

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is \$2,882,000 or \$288,000 on average per year, with the estimated available funding each year being + or - 2% of the required outlay.

Projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan are shown in the graph below.

Berri Barmera - Projected and Budget Expenditure for (Stormwater_S2_V1)



What we will do

We plan to provide stormwater drainage services for the following:

- Operation, maintenance, renewal and upgrade of stormwater drainage network to meet service levels set in annual budgets.
- Upgrade and renew Coneybeer St and Jarvis St stormwater pipe within the 10 year planning period.

What we cannot do

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

- Renewal all stormwater drainage infrastructures at the end of useful lives as stored in current asset register.
- Monitoring of the quality and treatment of all storm water being discharged to current EPA Water Quality Standards.

Managing the Risks

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

- Stormwater drainage blockage.
 - Flooding property.
 - Retention pond overflow
 - Flooding obstructing roads and footpath
- We will endeavour to manage these risks within available funding by:
- Inspecting stormwater drainage infrastructure
 - Cleaning inlet pits
 - Cleaning Gross Pollution Trap(GPT)
 - Upgrade retention pond or provide spillway

The Next Steps

The actions resulting from this asset management plan are:

- Prioritise stormwater drainage infrastructure and allocate resources according to priorities.
- Renew or/and upgrade stormwater drainage infrastructure in poor condition.
- Continue to harvest and reuse stormwater for irrigation purpose
- Updating stormwater drainage infrastructure data in Council's GIS and Asset Register

Questions you may have

What is this plan about?

This asset management plan covers the infrastructure assets that serve the Berri, Barmera, Cobdogla, Monash, and Glossop township community's stormwater drainage needs. These infrastructures, including side entry pit, drainage pipes, spoon drains and box culverts, provide the community with infrastructures to transfer stormwater to receiving bodies such as River Murray, Lake Bonney, and stormwater detention and retention ponds to minimise flooding and capture stormwater for re-use.

What is an Asset Management Plan?

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

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

Why is there a funding shortfall?

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

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

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

What options do we have?

Resolving the funding shortfall involves several steps:

1. Improving asset knowledge so that data accurately records the asset inventory, how assets are performing and when assets are not able to provide the required service levels,
2. Improving our efficiency in operating, maintaining, renewing and replacing existing assets to optimise life cycle costs,
3. Identifying and managing risks associated with providing services from infrastructure,

4. Making trade-offs between service levels and costs to ensure that the community receives the best return from infrastructure,
5. Identifying assets surplus to needs for disposal to make saving in future operations and maintenance costs,
6. Consulting with the community to ensure that stormwater drainage services and costs meet community needs and are affordable,
7. Developing partnership with other bodies, where available to provide services,
8. Seeking additional funding from governments and other bodies to better reflect a 'whole of government' funding approach to infrastructure services.

What happens if we don't manage the shortfall?

It is likely that we will have to reduce service levels in some areas, unless new sources of revenue are found. For stormwater drainage infrastructure, the service level reduction may include reducing the capacity of draining, lower Annual Recurrence Interval (ARI) standard and higher risk of flooding.



(Stormwater problem at this site had been solved.)

What can we do?

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

What can you do?

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

2. INTRODUCTION

2.1 Background

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

The asset management plan follows the format for AM Plans recommended in Section 4.2.6 of the International Infrastructure Management Manual¹.

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

- Berri Barmera Council Strategic and Corporate Plan 2015-2020

This infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide stormwater drainage services to the community.

Table 2.1: Assets covered by this Plan

Asset Category	Dimension	Unit	Replacement Value
100mm PVC SW Pipe Type	50.83	m	\$ 6,607.90
1050mm Concrete SW Pipe Type	903.65	m	\$ 704,847.00
1200mm Concrete SW Pipe Type	242.23	m	\$ 237,385.40
1350mm Concrete SW Pipe Type	282.96	m	\$ 333,892.80
1500mm Concrete SW Pipe Type	49.3	m	\$ 69,020.00
150mm PVC SW Pipe Type	783.19	m	\$ 117,478.50
1650mm Concrete SW Pipe Type	327.59	m	\$ 524,144.00
1800mm Concrete SW Pipe Type	25.03	m	\$ 48,057.60
180mm Concrete SW Pipe Type	25.78	m	\$ 4,382.60
200mm PVC SW Rising Main Pipe Type	535.18	m	\$ 112,387.80
225mm Concrete SW Pipe Type	752.18	m	\$ 127,870.60
225mm PVC SW Pipe Type	254.81	m	\$ 53,510.10
225mm Ribloc SW Pipe Type	130.43	m	\$ 19,564.50
300mm Concrete SW Pipe Type	4569.54	m	\$ 845,364.90
300mm Plastream SW Pipe Type	7.3	m	\$ 1,613.30
300mm PVC SW Pipe Type	264.45	m	\$ 62,145.75
300mm Ribloc SW Pipe Type	706.13	m	\$ 112,980.80
375mm Concrete SW Pipe Type	2960.19	m	\$ 592,038.00
375mm Ribloc SW Pipe Type	10.84	m	\$ 1,951.20
400mm Concrete SW Pipe Type	7204.65	m	\$ 1,440,930.00
400mm PVC SW Pipe Type	144.86	m	\$ 34,042.10
425mm Concrete SW Pipe Type	3889.15	m	\$ 777,830.00
425mm Ribloc SW Pipe Type	279.2	m	\$ 61,424.00

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

450mm Concrete SW Pipe Type	737.35	m	\$	176,964.00
450mm Ribloc SW Pipe Type	34.8	m	\$	10,718.40
475mm Concrete SW Pipe Type	421.39	m	\$	126,417.00
525mm Concrete SW Pipe Type	1704.15	m	\$	511,245.00
600mm Concrete SW Pipe Type	1721.34	m	\$	688,536.00
600mm Ribloc SW Pipe Type	207.92	m	\$	64,455.20
675mm Concrete SW Pipe Type	696.67	m	\$	330,918.25
750mm Concrete SW Pipe Type	181.73	m	\$	94,499.60
750mm Ribloc SW Pipe Type	34.29	m	\$	16,630.65
825mm Concrete SW Pipe Type	348.89	m	\$	205,845.10
900mm Concrete SW Pipe Type	1328.84	m	\$	863,746.00
90mm PVC SW Pipe Type	16.86	m	\$	2,191.80
225mm x 150mm SW Box Culvert Type	50.66	m	\$	11,094.54
250mm x 1200mm SW Box Culvert Type	12.1	m	\$	10,478.60
300mm x 150mm SW Box Culvert Type	107.17	m	\$	24,113.25
400mm x Unspecified Width SW Box Culvert Type	11.97	m	\$	4,141.62
450mm x 150mm SW Box Culvert Type	34.23	m	\$	10,542.84
600mm x 150mm SW Box Culvert Type	19.93	m	\$	8,350.67
900mm x 300mm SW Box Culvert Type	17.8	m	\$	4,474.39
1800mm x 600mm <1.5m cover SW Side Entry Pit Type	144	-	\$	504,000.00
1800mm x 600mm >=1.5m and <=2.5m cover SW Side Entry Pit Type	46	-	\$	207,000.00
1800mm x 600mm >2.5m cover SW Side Entry Pit Type	2	-	\$	13,515.14
2700mm x 600mm <1.5m cover SW Side Entry Pit Type	9	-	\$	44,100.00
2700mm x 600mm >=1.5m and <=2.5m cover SW Side Entry Pit Type	2	-	\$	12,460.00
900mm x 1200mm <1.5m cover SW Side Entry Pit Type	1	-	\$	2,732.27
900mm x 450mm <1.5m cover SW Side Entry Pit Type	15	-	\$	24,000.00
900mm x 450mm >2.5m cover SW Side Entry Pit Type	1	-	\$	1,900.00
900mm x 600mm <1.5m cover SW Side Entry Pit Type	211	-	\$	390,350.00
900mm x 600mm >=1.5m and <=2.5m cover SW Side Entry Pit Type	11	-	\$	31,350.00
900mm x 600mm >2.5m cover SW Side Entry Pit Type	2	-	\$	6,600.00
1200mm x 600mm <1.5m cover SW Junction Box Type	4	-	\$	11,600.00
1200mm x 1200mm <1.5m cover SW Junction Box Type	7	-	\$	26,320.00
1200mm x 1200mm >=1.5m and <=2.5m cover SW Junction Box Type	1	-	\$	9,379.93
1500mm x 1500mm <1.5m cover SW Junction Box Type	3	-	\$	10,350.00
1500mm x 1500mm >=1.5m and <=2.5m cover SW Junction Box Type	3	-	\$	22,709.82
1500mm x 1500mm >2.5m cover SW Junction Box Type	1	-	\$	10,669.92
1500mm x 900mm <1.5m cover SW Junction Box Type	2	-	\$	7,300.00
1500mm x 900mm >2.5m cover SW Junction Box Type	7	-	\$	89,179.30
1800mm x 1200mm >2.5m cover SW Junction Box Type	1	-	\$	6,900.00
2000mm x 2000mm >=1.5m and <=2.5m cover SW Junction Box Type	1	-	\$	16,369.88
450mm x 450mm <1.5m cover SW Junction Box Type	1	-	\$	1,550.00
600mm x 450mm <1.5m cover SW Junction Box Type	3	-	\$	5,445.00

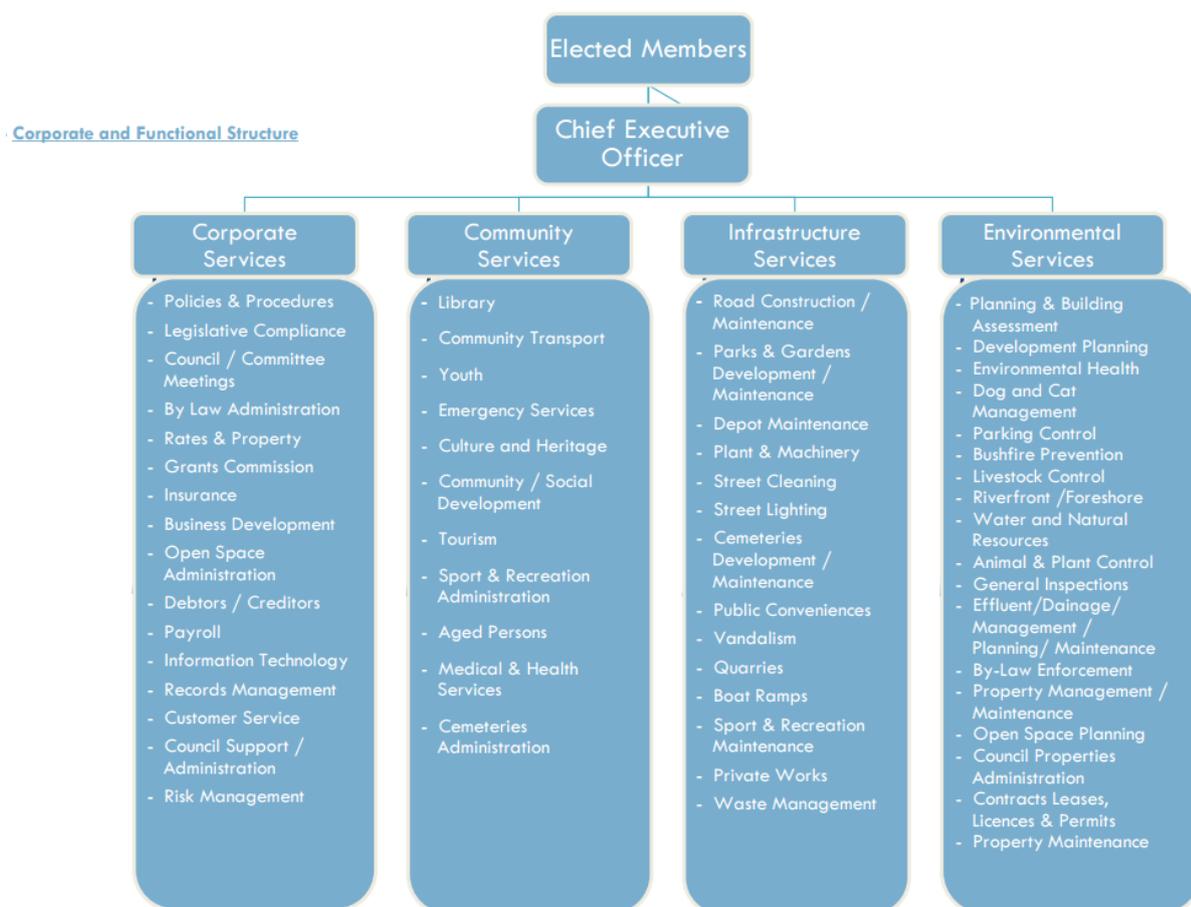
600mm x 450mm >=1.5m and <=2.5m cover SW Junction Box Type	1	-	\$	2,410.00
600mm x 600mm <1.5m cover SW Junction Box Type	67	-	\$	120,600.00
600mm x 600mm >=1.5m and <=2.5m cover SW Junction Box Type	11	-	\$	25,300.00
600mm x 600mm >2.5m cover SW Junction Box Type	2	-	\$	9,000.00
750mm x 750mm <1.5m cover SW Junction Box Type	3	-	\$	8,880.00
900mm x 900mm <1.5m cover SW Junction Box Type	14	-	\$	34,720.00
900mm x 900mm >=1.5m and <=2.5m cover SW Junction Box Type	3	-	\$	10,950.00
1500mm x 900mm >=1.5m and <=2.5m cover SW Maintenance Hole Type	1	-	\$	5,200.00
2500mm x 2000mm >2.5m cover SW Maintenance Hole Type	1	-	\$	6,800.00
900mm x 900mm <1.5m cover SW Maintenance Hole Type	80	-	\$	236,800.00
900mm x 900mm >=1.5m and <=2.5m cover SW Maintenance Hole Type	53	-	\$	192,920.00
900mm x 900mm >2.5m cover SW Maintenance Hole Type	16	-	\$	72,000.00
1050mm SW Headwall Type	2	-	\$	4,300.00
1800mm SW Headwall Type	1	-	\$	2,150.00
300mm SW Headwall Type	10	-	\$	5,860.00
375mm SW Headwall Type	1	-	\$	586.00
400mm SW Headwall Type	30	-	\$	17,580.00
425mm SW Headwall Type	4	-	\$	2,344.00
525mm SW Headwall Type	1	-	\$	830.00
600mm SW Headwall Type	3	-	\$	2,490.00
750mm SW Headwall Type	1	-	\$	1,150.00
1200mm x 1200mm <1.5m cover SW Grated Inlet Pit Type	2	-	\$	7,060.00
600mm x 600mm <1.5m cover SW Grated Inlet Pit Type	34	-	\$	51,680.00
600mm x 600mm >=1.5m and <=2.5m cover SW Grated Inlet Pit Type	1	-	\$	2,160.00
900mm x 600mm <1.5m cover SW Grated Inlet Pit Type	1	-	\$	2,120.00
900mm x 900mm <1.5m cover SW Grated Inlet Pit Type	1	-	\$	2,510.00
900mm x 900mm >=1.5m and <=2.5m cover SW Grated Inlet Pit Type	1	-	\$	2,713.30
1050mm x 1050mm SW Gross Pollutant Trap Type	1	-	\$	14,029.90
ECOSOL 4900 SW Gross Pollutant Trap Type	1	-	\$	85,000.00
1800mm x 3700mm SW Pump Sump Type	1	-	\$	44,839.00
900mm x Unspecified Depth SW Pump Sump Type	1	-	\$	12,511.00
Concrete SW Spoon Drain Type	198.76	m	\$	31,801.60
150mm SW Valve Type	1	-	\$	3,450.00
2 Coat Spray Seal SW Swale Type	1108	-	\$	14,248.88
50 l/s 12m Head Submersible SW Pump Type	2	-	\$	28,500.00
Natural (Valued) SW Swale Type	240.5	-	\$	39,302.51
Stormwater Pond	7	-	\$	979,262.79
Total			\$	12,994,672.00

Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.1.1.

Table 2.1.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none"> • Represent needs of community/shareholders, • Allocate resources to meet the organisation’s objectives in providing services while managing risks, • Ensure organisation is financial sustainable.
CEO	<ul style="list-style-type: none"> • TBA
Manager Corporate Services	<ul style="list-style-type: none"> • Prepare 10 year LTFP in line with statutory requirements and community needs • Review and update assumptions in consultation with Audit Committee • Review and amend where appropriate key financial performance targets • Amend the LTFP to ensure consistent integration with Asset Management Plans • Review and update existing policies in particular Contracts and Tendering Policy, Asset Management and Asset Accounting Policies. • Develop policy regarding budget preparation, review and reporting outcomes • Develop policy for Internal Financial Control Systems • Develop suite of documented Internal Financial Control processes.
Manager Infrastructure Services	<ul style="list-style-type: none"> • Overall management of the assets from operation, maintenance, updating and capital works • Review and update Asset Management Plan for Infrastructure assets (roads, footpaths and kerbing) ensuring it includes – <ul style="list-style-type: none"> ➢ Annual and future capital works programmes and costing for minimum of 10 years for all asset replacements, upgrades and disposals. ➢ Ensure data is systematically recorded to enable sound asset management decision making. ➢ Determination of service levels provided by Council. ➢ Determine labour requirements regarding Council staff and sub-contractors as an outcome of future capital works requirements. ➢ Financial data such as valuations and annual depreciation are recorded. • Develop Asset Management Plan for Stormwater assets ensuring it includes – <ul style="list-style-type: none"> ➢ Annual and future capital works programmes and costing for minimum of 10 years for all asset replacements, upgrades and disposals. ➢ Ensure data is systematically recorded to enable sound asset management decision making. ➢ Determination of service levels provided by Council. ➢ Determine labour requirements regarding Council staff and sub-contractors as an outcome of future capital works requirements. ➢ Financial data such as valuations and annual depreciation are recorded. ➢ Infrastructure risk management

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



2 Goals and Objectives of Asset Management

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

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

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.²

2.3 Plan Framework

Key elements of the plan are

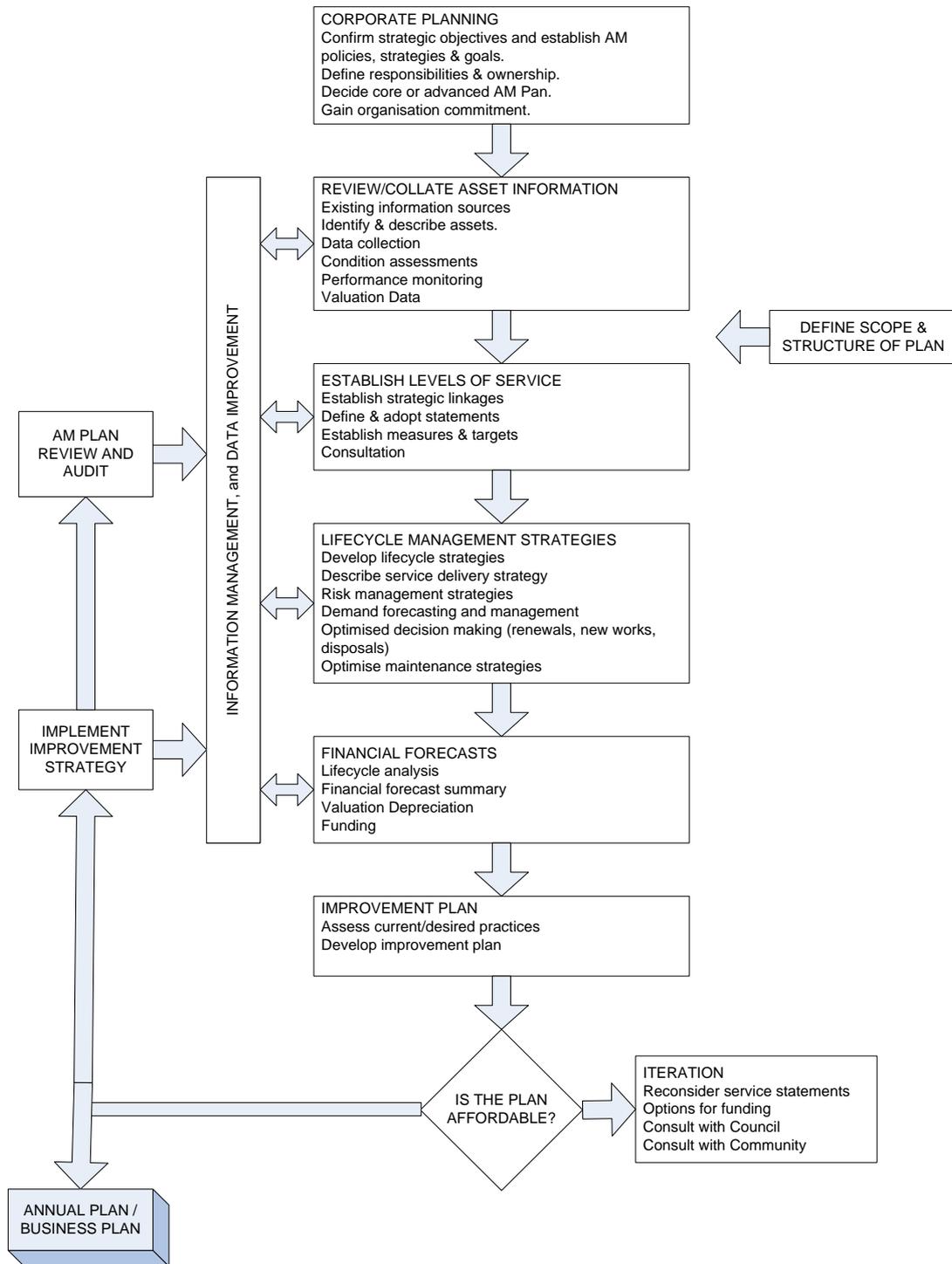
² Based on IPWEA, 2011, IIMM, Sec 1.2 p 1|7.

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

A road map for preparing an asset management plan is shown below.

Road Map for preparing an Asset Management Plan

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



2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual³. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

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

2.5 Community Consultation

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

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

The organisation has not carried out any research on customer expectations. This will be investigated for future updates of the asset management plan.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the organisation's vision, mission, goals and objectives.

Our vision is:

Building a Better Community

Our mission is:

In 2030, the Berri Barmera Community will be a sustainable, prosperous, confident regional community throughout the Riverland of SA

The organisation will exercise its duty of care to ensure public safety is accordance with the infrastructure risk management plan prepared in conjunction with this AM Plan. Management of infrastructure risks is covered in Section 5.2

3.3 Legislative Requirements

The organisation has to meet many legislative requirements including Australian and State legislation and State regulations. These include:

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset

³ IPWEA, 2011, IIMM.

	management plans for sustainable service delivery.
Occupational Health and Safety Act and Regulations	Sets out the rules and responsibilities to secure the health, safety and welfare of persons at work
Environmental Protection Act	An Act to provide for the protection of the environment; to establish the Environmental Protection Authority and define its functions and powers; and for other purpose.
Natural Resources Management Act 2004	Act that ensures a strategic, integrated sustainable management of natural assets which include soils, water, plants, animals, diversity of landscapes and eco Systems.
Community Titles Act	An Act to provide for the division of land into lots and common property; to provide for the administration of the land by the owners of the lots; and for other purposes.
Development Act	An Act to provide for planning and regulate development in the State; to regulate the use and management of land and buildings, and the design and construction of buildings; to make provision for the maintenance and conservation of land and buildings where appropriate; and for other purposes.
Native Vegetation Act	The Act provides incentives and assistance to land owners in relation to be preservation and enhancement of native vegetation; to control the clearance of native vegetation; and for other purpose

The organisation will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan linked to this AM Plan. Management of risks is discussed in Section 5.2.

3.4 Current Levels of Service

Our current service levels are detailed in Table 3.4.

Table 3.4: Current and Desired Service Levels

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service	Optimal Level of Service
COMMUNITY LEVELS OF SERVICE				
Quality	Use of roads and footpaths is not obstructed by flooding	Customer service requests relating to flooding of roads and footpaths	TBA	<2/year
	Stormwater drainage facilities are free of hazards	Reported injury incidents	Nil/year	Nil/year
TECHNICAL LEVELS OF SERVICE				
Operations	Providing an efficient and environmentally friendly disposal of stormwater runoff	Number of defects identified during annual condition & defects inspection	To be added after condition inspection.	<10
		frequency of cleaning of all pits and drains	Annual	Annual
	Vacuum cleaning machine standby after hours and on weekend if a significant rain events has been forecasted by the Bureau of Meteorology	Numbers of weekends in which the machine is ready	52	52
	Camera Inspection to identify drains to be cleaned or repaired.	Length of drain network to be inspected per year	1292m (2015/2016)	TBA
	Emptying GPT to maintain designed capacity.	Frequency of emptying GPT to maintain designed capacity.	Twice a year.	Twice a year.
Maintenance	Drainage infrastructure is suitable for purpose	% of making identified defects safe completed within 3 working days	Not yet recorded and TBA	100%
		Time taken to respond to replace damaged lids of side entry pits to make the situation safe and put temporary measures in place after being reported to the Council	≤5 working days	≤5 working days
		Time taken to complete repairing of damaged pits	≤20 working days	≤20 working days
Upgrade/New	Drainage infrastructure is capable for purpose	A rolling program of stormwater infrastructure upgrade is carried out each year.		
	Flooding of private and commercial property is minimised	No properties inundated by 100 ARI storm	TBA	Nil

All values are shown in current 2016/2017 dollar values

3.5 Desired Levels of Service

Indications of desired levels of service are obtained from community consultation/engagement. The asset management planning process includes the development of 3 scenarios to develop levels of service that are financially sustainable

4. FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecast

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

4.3 Demand Impact on Assets

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

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
Population	11700	11700	Minimal Impact
Demographics	<p>ABS Estimated Resident Population June 30th 2010</p> <p>0 to 14 years_2153 15 years to 24 years_1364 25 years to 34 years_1319 35 years to 44 years_1443 45 years to 54 years_1623 55 years to 64 years_1555 65 years to 74 years_913 75 years to 84 years_665 85 years and over_237</p>	<p>The total number and proportion of aged people are increasing.</p> <p>Change since 2007, (ABS Estimated Resident Population June 30th 2007)</p> <p>0 to 14 years_ (-216) 15 years to 24 years_ (+8) 25 years to 34 years_ (-25) 35 years to 44 years_ (-140) 45 years to 54 years_ (-51) 55 years to 64 years_ (+256) 65 years to 74 years_ (+13) 75 years to 84 years_ (-7) 85 years and over_ (+43)</p>	Minimal Impact
Climate change	Extremes Increasing	Higher intensity rainfalls in storm events	Creating over capacity of stormwater drainage pipes and higher risk of flooding
Development intensity and surface permeability	surface permeability decreasing	Low surface permeability	More stormwater discharged into stormwater drainage system

4.4 Demand Management Plan

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

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures⁴. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

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

Table 4.4: Demand Management Plan Summary

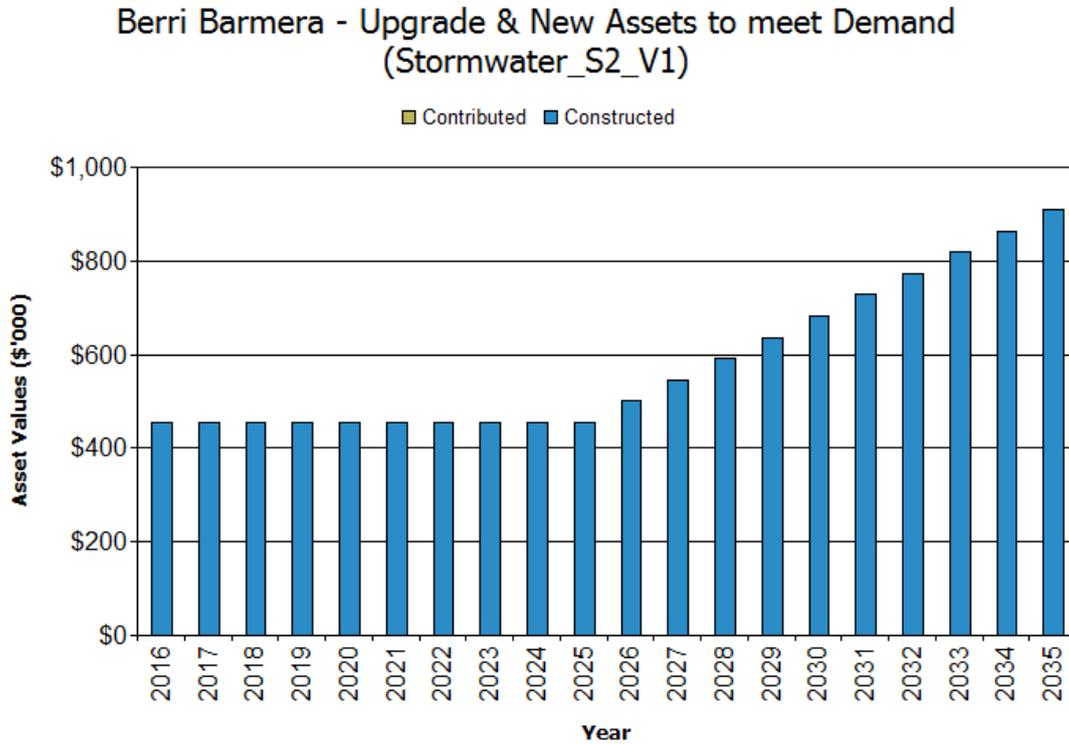
Demand Driver	Impact on Services	Demand Management Plan
Climate change	Reduced ARI standard and higher risk of flooding	Stormwater drainage capacity modelling and upgrading critical stormwater drainage infrastructure.
Development intensity and surface permeability	More stormwater discharged into stormwater drainage system	Encouraging onsite stormwater retention and reuse.

⁴ IPWEA, 2011, IIMM, Table 3.4.1, p 3|58.

4.5 Asset Programs to meet Demand

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

Figure 1: Upgrade and New Assets to meet Demand



The graph is a cumulative graph showing the accumulation of new assets over the 10 year planning period. All values are shown in current 2016/2017 dollar values. Asset values in second 10 years period (2026 to 2035) are for the indication purpose only. They are showing the situation of second 10 years period of maintaining same average asset value increase of first 10 years period (2016 to 2025)

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

5. LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

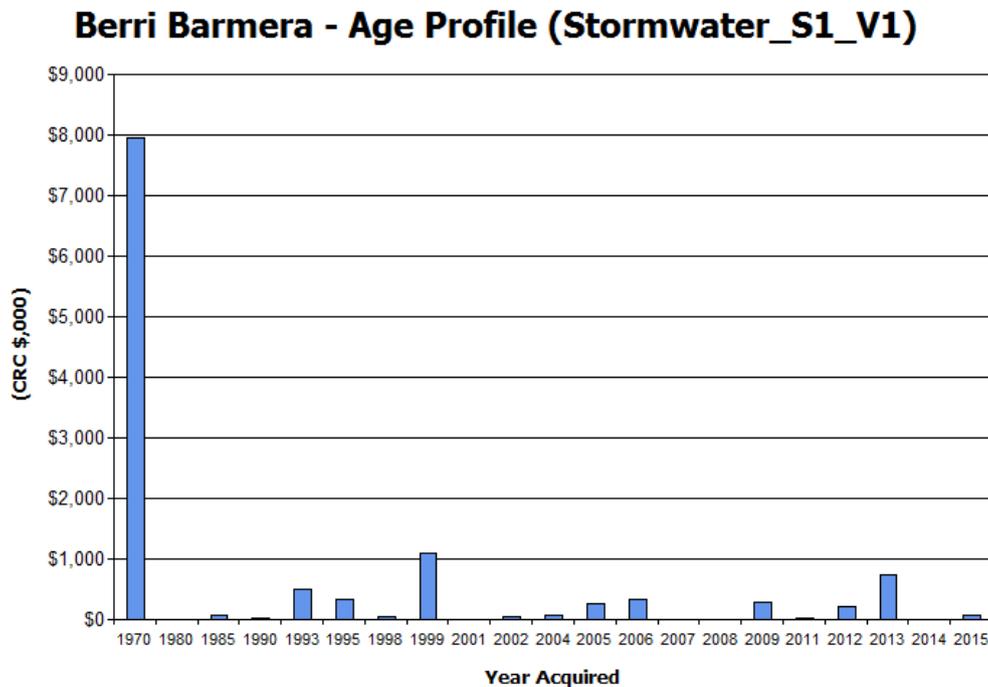
5.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

Stormwater assets are located throughout the township area of Berri Barmera Council. The assets are situated in areas which are deemed necessary by Council experienced employees and/or consulting engineers. However, during land development or road upgrade works stormwater assets may be renewed, upgraded or newly installed to cope with increased volume of stormwater runoff and prevent/reduce the risk of flooding.

The age profile of the assets include in this AM Plan is shown in Figure 2.

Figure 2: Asset Age Profile



All values are shown in current 2016/2017 dollar values.

This figure shows a significant amount of stormwater drainage infrastructures in 1969. It is because of that this age profile is based on information stored in the asset register, including estimated acquisition dates of the assets. For some asset constructed before 1970 and actual construction years are unknown due to the missing of records, the Year Acquired of these assets has been assumed to be 1969. This matter will lead to a significant renewal expenditure projected when these assets reach the end of useful lives. For these assets, actual renewal or upgrade work should be carried out based on real condition of assets or engineer assessment.

5.1.2 Asset capacity and performance

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

Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Vaughan Tce East Stormwater drainage pipelines	Over capacity and risk of overflow
Giles Street stormwater pond	Possibly over capacity and risk of overflow. Still monitoring and yet not confirmed.

The above service deficiencies were identified from experienced council employees..

5.1.3 Asset condition

Asset condition information is currently unavailable.

Council’s stormwater periodic inspection program is going to be developed in the future. Stormwater infrastructure condition data will be available in the future version of this plan.

5.1.4 Asset valuations

The value of assets recorded in the asset register as at 1/7/2016 covered by this asset management plan is shown below. Assets were last revalued at 1/7/2016 . Assets are valued at

Current Replacement Cost	\$12,995,000
Depreciable Amount	\$12,995,000
Depreciated Replacement Cost ⁵	\$9,062,000
Annual Depreciation Expense	\$153,000

The Berri Barmera Council engages Tonkin Consulting to undertake an independent valuation of stormwater assets each year. Tonkin Consulting completed the last valuation in June 2013 with the valuation report including the Current Replacement Cost (CRC) of the different types of stormwater assets. The useful lives of many stormwater assets are used as a guide. Some assets may exceed their anticipated useful life. However, a small proportion of assets may fail earlier than their anticipated useful life as this very much depends on past construction specification and standards, environment, soil condition and the quality of water the asset is coming into contact with.

Key assumptions made in preparing the valuations were:

- Stormwater drainage infrastructure residual value to be \$0
- Straight line depreciation
- Stormwater drainage infrastructure may reach the end of its useful life.
- Estimated life of Box Culverts is 70 years
- Estimated life of Concrete pipes is 100 years
- Estimated life of PVC pipes is 70 years
- Estimated life of Ribloc pipes is 70 years
- Estimated life of Concrete spoon is 60 years
- Estimated life of Grated Inlet Pit is 80 years
- Estimated life of Gross Pollutant Trap is 60 years
- Estimated life of Headwall is 70 years
- Estimated life of Maintenance Hole is 80 years
- Estimated life of Side Entry Pit is 80 years
- Estimated life of Junction boxes is 80 years
- Estimated life of Valve is 80 years
- Estimated life of Pump is 15 years
- Estimated life of Pump Sump is 58 years

⁵ Also reported as Written Down Current Replacement Cost (WDCRC).

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

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	1.20%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.50%

In 2016 the organisation plans to renew assets at 40.50% of the rate they are being consumed and will be increasing its asset stock by 3.50% in the year.

5.1.5 Historical Data

All known historical data of storm water infrastructure have been input into Council' GIS records and asset register.

5.2 Infrastructure Risk Management Plan

Currently Stormwater Drainage Infrastructure Risk Management Plan is unavailable and this will be developed in future revisions of this asset management plan.

5.3 Routine Operations and Maintenance Plan

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

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

5.3.1 Operations and Maintenance Plan

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

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

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

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

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

Actual past maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure Trends

Year	Maintenance Expenditure
2013/2014	\$ 49,000
2014/2015	\$ 67,000
2015/2016	\$ 68,000

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

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

5.3.2 Operations and Maintenance Strategies

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

- Scheduling operations activities to deliver the defined level of service in the most efficient manner,
- Undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes. Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost),
- Maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting Very High and High risks and residual risks after treatment to management and Council/Board,
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs,
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options,
- Maintain a current hierarchy of critical assets and required operations and maintenance activities,
- Develop and regularly review appropriate emergency response capability,
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

Asset hierarchy

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

Currently asset hierarchy is unavailable and this will be developed in future revisions of this asset management plan.

Critical Assets

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

Operations and maintenances activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities are detailed in Table 5.3.2.1.

Table 5.3.2.1: Critical Assets and Service Level Objectives

Critical Assets	Critical Failure Mode	Operations & Maintenance Activities
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Gross Pollutant Traps (GPT), and Stormwater outlet structures	Asset may be blocked due to excessive pollutants hence not operating at 100% efficiency. This may result in flooding within Council area.	Regular emptying/cleaning.
Over capacity pipe lines	Overflow and flooding	Condition monitoring and cleaning. Carry out stormwater drainage system modelling and upgrade over capacity pipes
Stormwater ponds	Overflow	Outlet cleaning and pumping

Standards and specifications

Maintenance work is carried out in accordance with the following Standards and Specifications.

- Australian Standards
- Relevant Berri Barmera Council stormwater drainage infrastructure specifications

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2016/2017 dollar values (ie real values).

Figure 4: Projected Operations and Maintenance Expenditure

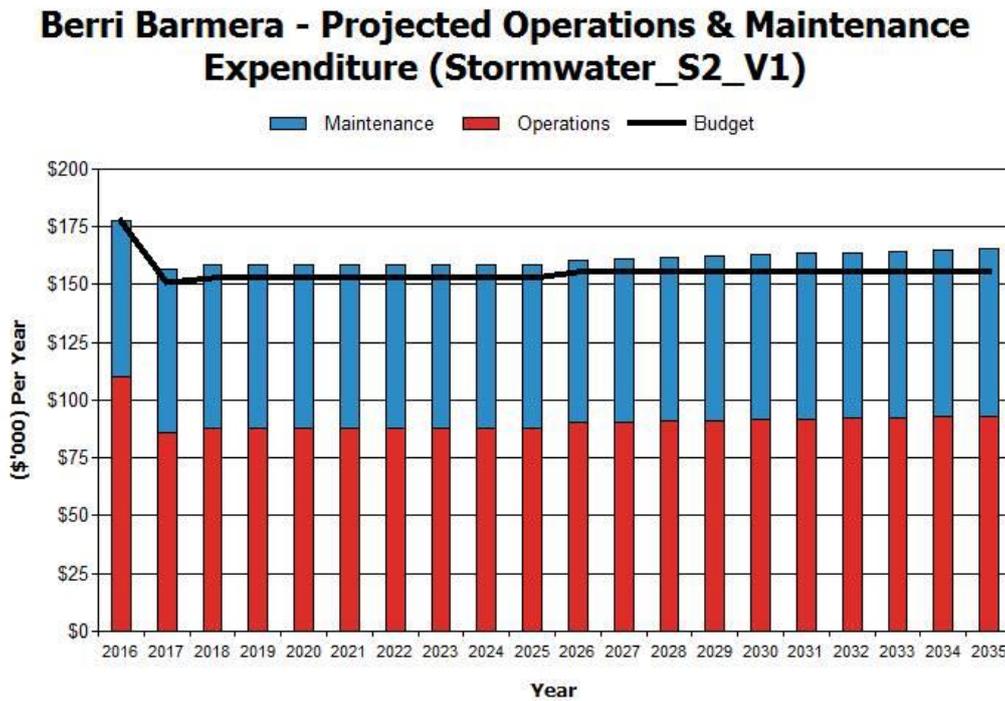


Figure 4 is based on current budget level. It shows what we should do with existing and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position). This may require several versions of the AM Plan.

Projected operations and maintenance expenditures in second 10 years period (2026 to 2035) are for the indication purpose only. They are showing the situation of second 10 years period of maintaining same average expenditure level of first 10 years period (2016 to 2025)

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

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

5.4 Renewal/Replacement Plan

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

5.4.1 Renewal plan

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

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average *network renewals* plus *defect repairs* in the *Renewal Plan* and *Defect Repair Plan* worksheets on the ‘Expenditure template’.

Method 2 was used for this asset management plan.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed on 2011 when stormwater asset register was firstly established.⁶

Table 5.4.1: Useful Lives of Assets

Asset (Sub)Category	Useful life (years)
Box Culverts	70
Concrete pipes	100
PVC pipes	70
Ribloc pipes	70
Concrete spoon	60
Grated Inlet Pit	80
Gross Pollutant Trap	60
Headwall	70
Maintenance Hole	80
Side Entry Pit	80
Junction boxes	80
Valves	80
Pumps	15

The useful lives of many stormwater assets are used as a guide. Some assets may exceed their anticipated useful life. However, a small proportion of assets may fail earlier than their anticipated useful life as this very much depends on past construction specification and standards, environment, soil condition and the quality of water the asset is coming into contact with.

5.4.2 Renewal and Replacement Strategies

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

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

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (eg replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (eg roughness of a road).⁷

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

- Have a high consequence of failure,
- Have a high utilisation and subsequent impact on users would be greatest,
- The total value represents the greatest net value to the organisation,
- Have the highest average age relative to their expected lives,
- Are identified in the AM Plan as key cost factors,
- Have high operational or maintenance costs, and
- Where replacement with modern equivalent assets would yield material savings.⁸

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5.4.2.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

Criteria	Weighting
Asset condition	55%
Safety/Risk Factor	35%
Fit with strategic longer-term plan objectives	5%
No. of service requests	5%

⁷ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

⁸ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

Total	100%
-------	------

Renewal and replacement standards

Renewal work is carried out in accordance with the following Standards and Specifications.

- Australian Standards
- Relevant Berri Barmera Council stormwater drainage infrastructure specifications

5.4.3 Summary of future renewal and replacement expenditure

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

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

Fig 5: Projected Capital Renewal and Replacement Expenditure

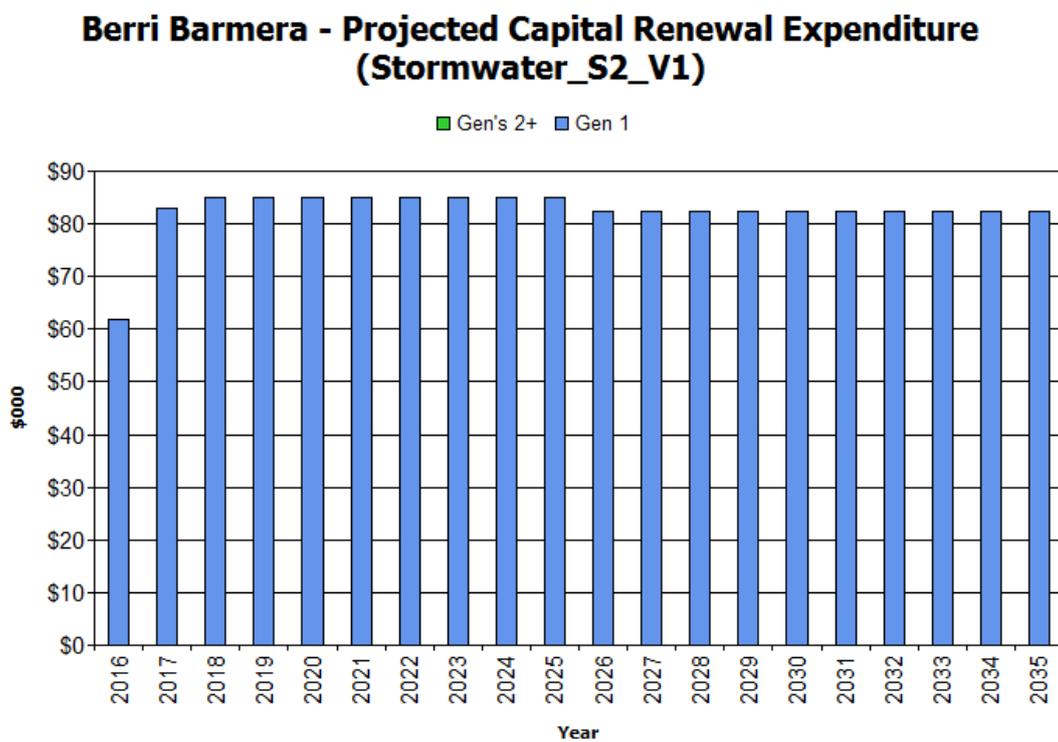


Figure 5.2 is based on current budget level. It shows what we should do with existing and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position). This may require several versions of the AM Plan.

All values are shown in current 2016/2017 dollar values.

Projected capital renewal expenditures in second 10 years period (2026 to 2035) are for the indication purpose only. They are showing the situation of second 10 years period of maintaining same average expenditure level of first 10 years period (2016 to 2025).

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

Renewals and replacement expenditure in the organisation’s capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the organisation from land development. These assets from growth are considered in Section 4.4.

5.5.1 Selection criteria

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

Table 5.5.1: New Assets Priority Ranking Criteria

Criteria	Weighting
Fit with strategic longer-term plan objectives	70%
Safety/Risk Factor	20%
No. of service requests	10%
Total	100%

5.5.2 Capital Investment Strategies

The organisation will plan capital upgrade and new projects to meet level of service objectives by:

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

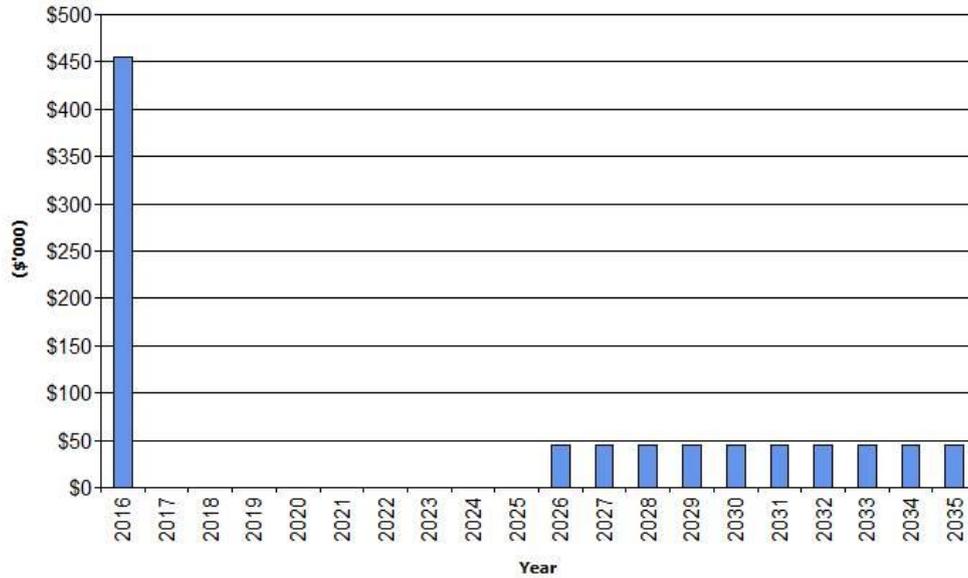
Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

5.5.3 Summary of future upgrade/new assets expenditure

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

Fig 6: Projected Capital Upgrade/New Asset Expenditure

Berri Barmera - Projected Capital Upgrade/New Expenditure (Stormwater_S2_V1)



All values are shown in current 2016/2017 dollar values. Projected capital upgrade/new expenditures in second 10 years period (2026 to 2035) are for the indication purpose only. They are showing the situation of second 10 years period of maintaining same average expenditure level of first 10 years period (2016 to 2025)

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

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6, together with estimated annual savings from not having to fund operations and maintenance of the assets. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any. Any revenue gained from asset disposals is accommodated in Council’s long term financial plan.

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

Table 5.6: Assets Identified for Disposal

Asset	Reason for Disposal	Timing	Disposal Expenditure	Operations & Maintenance Annual Savings
NII				

5.7 Service Consequences and Risks

The organisation has prioritised decisions made in adopting this AM Plan to obtain the optimum benefits from its available resources. Decisions were made based on the development of 3 scenarios of AM Plans.

Scenario 1 - What we would like to do based on asset register data

Scenario 2 – What we should do with existing budgets and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position). This may require several versions of the AM Plan.

Scenario 3 – What we can do and be financially sustainable with AM Plans matching long-term financial plans.

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

5.7.1 What we cannot do

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

- Council cannot upgrade or renew all assets due to renew within the next 10 year with current budget level.
- Council cannot inspection entire stormwater network within the next 10 year with current budget level.

5.7.2 Service consequences

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

- Useful life of assets to be extended based on asset actual condition.
- More asset conditions in fair or bad condition.
- More asset in the status of over capacity

5.7.3 Risk consequences

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

- Higher risk of overflow and flooding
- Footpath and road more likely to be damaged by stormwater
- More often blockage of stormwater drainage

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

6. FINANCIAL SUMMARY

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

6.1 Financial Statements and Projections

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

Fig 7: Projected Operating and Capital Expenditure

expenditure over the 10 year planning period is \$238,000 per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by this asset management plan is -\$75,000 per year (-ve = gap, +ve = surplus).

Life cycle expenditure is 76% of life cycle costs.

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

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

Medium term – 10 year financial planning period

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

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

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is \$243,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is \$238,000 on average per year giving a 10 year funding shortfall of -\$5,000 per year. This indicates that Council expects to have 98% of the projected expenditures needed to provide the services documented in the asset management plan.

Medium Term – 5 year financial planning period

The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is \$242,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is \$238,000 on average per year giving a 5 year funding shortfall of -\$4,000. This indicates that Council expects to have 98% of projected expenditures required to provide the services shown in this asset management plan.

Asset management financial indicators

Figure 7A shows the asset management financial indicators over the 10 year planning period and for the long term life cycle.

Figure 7A: Asset Management Financial Indicators

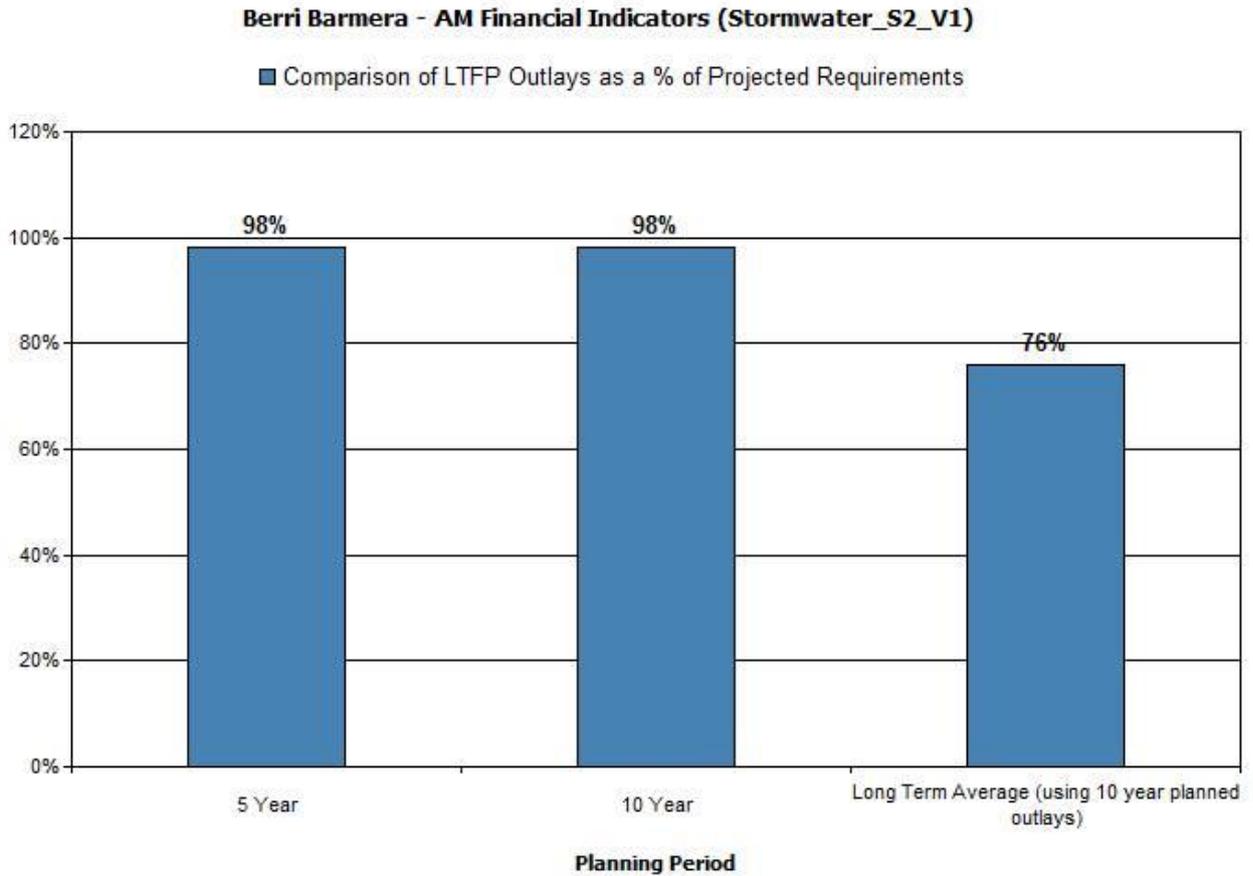


Figure 7A.2 show the asset management financial indicators over the 10 year planning period and for the long term life cycle based on current budget level to maintain current identifying level of service and risk consequences.

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

Figure 8 shows the projected asset renewal and replacement expenditure over the 20 years of the AM Plan. The projected asset renewal and replacement expenditure is compared to renewal and replacement expenditure in the capital works program, which is accommodated in the long term financial plan

Figure 8: Projected and LTFP Budgeted Renewal Expenditure

Berri Barmera - Projected & LTFP Budgeted Renewal Expenditure (Stormwater_S2_V1)

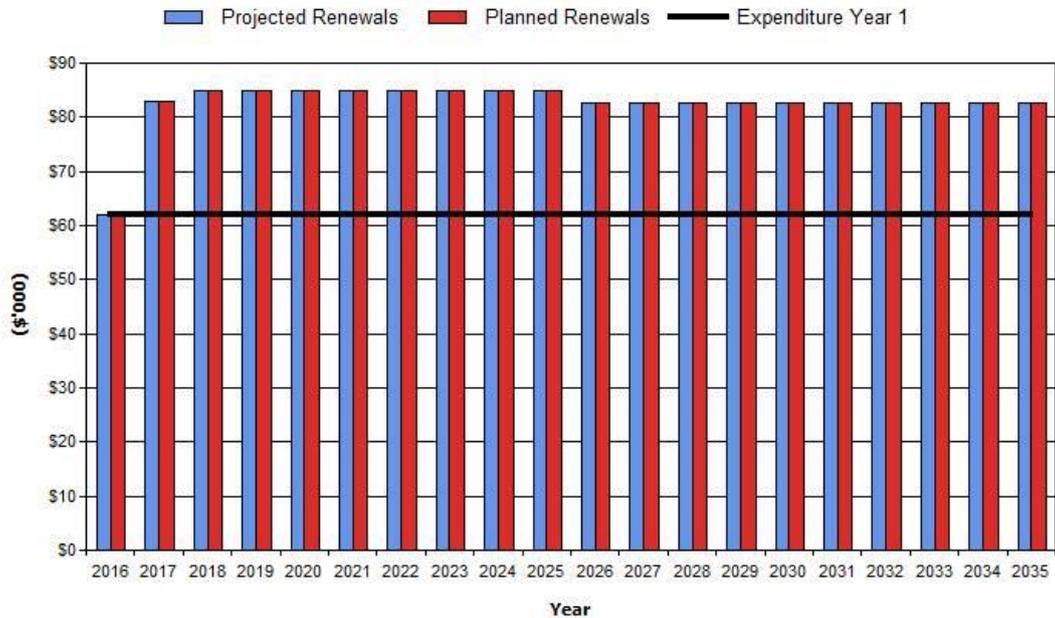


Figure 8.2 is based on current budget. It shows what we should do with existing and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position). This may require several versions of the AM Plan.

Planned renewals in second 10 years period (2026 to 2035) are for the indication purpose only. They are showing the situation of second 10 years period of maintaining same average expenditure level of first 10 years period (2016 to 2025)

Table 6.1.1 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in long term financial plan. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets are shown in Appendix D.

Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall

Year End Jun-30	Projected Renewals (\$'000)	LTFP Renewal Budget (\$'000)	Renewal Financing Shortfall (- gap, + surplus) (\$'000)	Cumulative Shortfall (- gap, + surplus) (\$'000)
2016	\$62	\$62	\$0	\$0
2017	\$83	\$83	\$0	\$0
2018	\$85	\$85	\$0	\$0
2019	\$85	\$85	\$0	\$0
2020	\$85	\$85	\$0	\$0
2021	\$85	\$85	\$0	\$0
2022	\$85	\$85	\$0	\$0
2023	\$85	\$85	\$0	\$0
2024	\$85	\$85	\$0	\$0
2025	\$85	\$85	\$0	\$0

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

Table 6.1.1_S2 represents Council’s current service level with current budget. It shows the renewal and financing shortfall to maintain current identifying level of service based on current budget level. It also indicates what we can do and be financially sustainable with AM Plans matching long-term financial plans.

6.1.2 Projected expenditures for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in 2016/2017 real values.

Table 6.1.2: Projected Expenditures for Long Term Financial Plan (\$000)

Year	Operations	Maintenance	Projected	Capital	Disposals
			Capital Renewal	Upgrade/New	
2016	\$110	\$68	\$62	\$455	\$0
2017	\$86	\$70	\$83	\$0	\$0
2018	\$88	\$70	\$85	\$0	\$0
2019	\$88	\$70	\$85	\$0	\$0
2020	\$88	\$70	\$85	\$0	\$0
2021	\$88	\$70	\$85	\$0	\$0
2022	\$88	\$70	\$85	\$0	\$0
2023	\$88	\$70	\$85	\$0	\$0
2024	\$88	\$70	\$85	\$0	\$0
2025	\$88	\$70	\$85	\$0	\$0

Table 6.1.2_S2 represents Council’s current service level with current budget. It shows the projected expenditures and financing shortfall to maintain current identifying level of service based on current budget level. It also indicates what we can do and be financially sustainable with AM Plans matching long-term financial plans.

The data of second 10 year period (2023-2032), are the average of those first 10 year period (2013-2022). They are for indication purpose to show what it would be like to maintain same level of expenditures in first and second ten year periods.

6.2 Funding Strategy

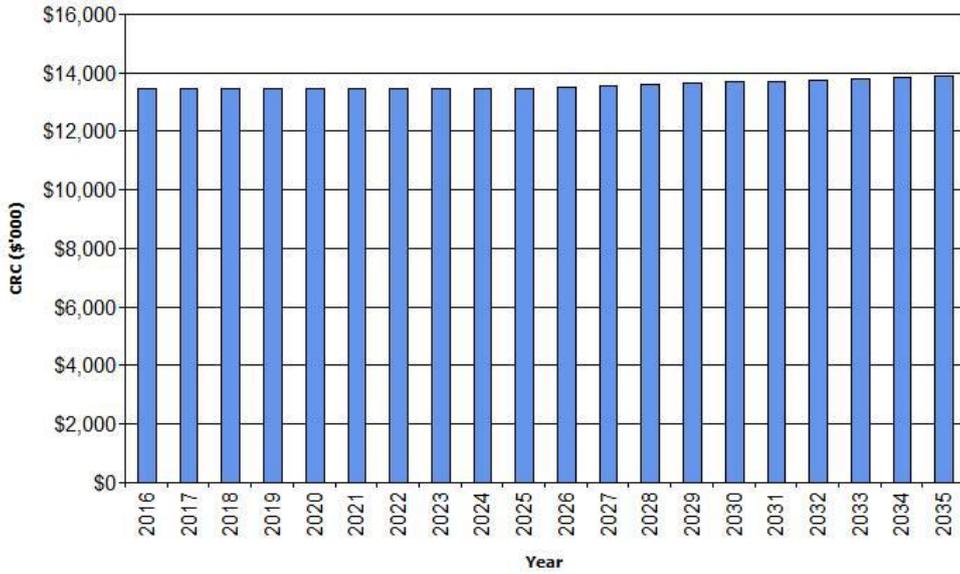
After reviewing service levels, as appropriate to ensure ongoing financial sustainability projected expenditures identified in Section 6.1.2 will be accommodated in the Council’s 10 year long term financial plan.

6.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 9 shows the projected replacement cost asset values over the planning period in real values.

Figure 9: Projected Asset Values

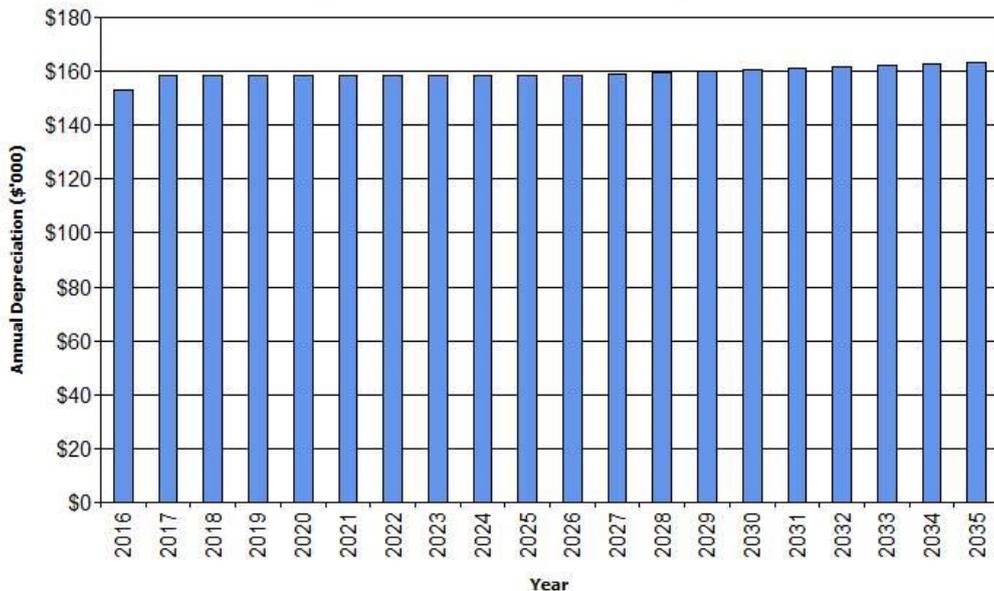
Berri Barmera - Projected Asset Values (Stormwater_S2_V1)



Depreciation expense values are forecast in line with asset values as shown in Figure 10.

Figure 10: Projected Depreciation Expense

Berri Barmera - Projected Depreciation Expense (Stormwater_S2_V1)



The depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated

replacement cost is shown in Figure 11. The depreciated replacement cost of contributed and new assets is shown in the darker colour and in the lighter colour for existing assets.

Figure 11: Projected Depreciated Replacement Cost

Berri Barmera - Projected Depreciated Replacement Cost (Stormwater_S2_V1)



6.4 Key Assumptions made in Financial Forecasts

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

Key assumptions made in this asset management plan and risks that these may change are shown in Table 6.4.

Table 6.4: Key Assumptions made in AM Plan and Risks of Change

Key Assumptions	Risks of Change to Assumptions
The population of our district will remain static	Significant demand increase in larger capacity and better stormwater infrastructure.
Existing recurrent service levels to our community are maintained.	Finance shock in the future resulting loss of revenue
There has been minimal growth in the region	Minus growth in the region resulting loss of revenue
Nominal discount rate (market rate on 10 year Government bonds is 3.95%, Inflation expectation estimate is 3%)	Minor impact.
Assets will be replaced or upgraded when reach their end of lives	Unable to predict and fund
Straight line depreciation and depreciation cost of each year remains unchanged.	Whole valuation and asset management plan need to be re-done

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

The financial system of Berri Barmera Council is Local Government Synergy Soft System. This provides the Council with core financial data with a separate Asset Management System currently linked to the General Ledger providing depreciation data.

7.1.2 Asset management system

Council's GIS system, MapInfo, in conjunction with CONQUEST is used to record the location, size, type and area of Council's major asset classed. This then produces data on the quantities of the major components that the Council spends money maintaining.

Asset registers

CONQUEST software.

7.2 Improvement Plan

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

Table 7.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Developing infrastructure condition periodic inspection standard and program.			
2	Updating GIS and asset register.	GIS and Asset Management Staff	Multi Resources	Every year
3	Developing and finalising infrastructure upgrade, renewal and new work specification and program.			
4	Review of the Stormwater Asset Management Plan	Asset Management Staff	Multi Resources	Annually
5	Improve current data collection method	Asset Management Staff	Multi Resources	24 Months

7.3 Monitoring and Review Procedures

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

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

The AM Plan has a life of 4 years (Council/Board election cycle) and is due for complete revision and updating within 2 years of each Council/Board election.

7.4 Performance Measures

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

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

8. REFERENCES

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

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

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

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Sample Council, 'Strategic Plan 20XX – 20XX',

Sample Council, 'Annual Plan and Budget'.

9. APPENDICES

- Appendix A Maintenance Response Levels of Service

- Appendix B Projected 10 year Capital Renewal and Replacement Works Program

- Appendix C Projected 10 year Capital Upgrade/New Works Program

- Appendix D LTFP Budgeted Expenditures Accommodated in AM Plan

- Appendix E Abbreviations

- Appendix F Glossary

Appendix A Maintenance Response Levels of Service

To be developed.

Appendix B Projected 10 year Capital Renewal and Replacement Works Program

**Berri Barmera
Projected Capital Renewal Works Program - Stormwater_S2_V1**

(\$000)

Year	Item	Description	Estimate
2016		Network Renewals	
	1	Stormwter Renewal - Anderson/Appleton Barmera	\$9
	2	Stormwater Renewal - Vaughan Tce	\$53
	3		
2016		Total	\$62

2017		Network Renewals	
	1	Stormwater Network Renewal	\$83
	2		
2017		Total	\$83

(\$000)

Year	Item	Description	Estimate
2018		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		
2018		Total	\$85

2019		Network Renewals	Estimate
	1	Stormwater Network Renewal	\$85
	2		
2019		Total	\$85

(\$000)

Year	Item	Description	Estimate
2020		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		
2020		Total	\$85

2021		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		
2021		Total	\$85

(\$000)

Year	Item	Description	Estimate
2022		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		

2022		Total	\$85
-------------	--	--------------	-------------

2023		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		
2023		Total	\$85

(\$000)

Year	Item	Description	Estimate
2024		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		
2024		Total	\$85

2025		Network Renewals	
	1	Stormwater Network Renewal	\$85
	2		
2025		Total	\$85

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

Berri Barmera

Projected Capital Upgrade/New Works Program - Stormwater_S2_V1

(\$000)

Year	Item	Description	Estimate
2016	1	Stormwater Upgrade - Coneybeer Street (refer W&G)	\$430
	2	Stormwater upgrade - Shiell Road	\$25
	3		
2016		Total	\$455

(\$000)

Year	Item	Description	Estimate
2017	1		
	2		
2017		Total	\$0

(\$000)

Year	Item	Description	Estimate
2018	1		
	2		
2018		Total	\$0

(\$000)

Year	Item	Description	Estimate
2019	1		
	2		
2019		Total	\$0

(\$000)

Year	Item	Description	Estimate
2020	1		
	2		
2020		Total	\$0

(\$000)

Year	Item	Description	Estimate
2021	1		
	2		
2021		Total	\$0

(\$000)

Year	Item	Description	Estimate
2022	1		

	2		
2022		Total	\$0

(\$000)

Year	Item	Description	Estimate
2023	1		
	2		
2023		Total	\$0

(\$000)

Year	Item	Description	Estimate
2024	1		
	2		
2024		Total	\$0

(\$000)

Year	Item	Description	Estimate
2025	1		
	2		
2025		Total	\$0

Appendix D Budgeted Expenditures Accommodated in LTFP

NAMS.PLUS3 Asset Management Berri Barmera										
© Copyright. All rights reserved. The Institute of Public Works Engineering Australasia										
Stormwater_S2_V1			Asset Management Plan				IPWEA INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALASIA		JRA	
First year of expenditure projections 2016 (financial yr ending)										
Stormwater										
Asset values at start of planning period										
Current replacement cost	\$12,995	(000)	Calc CRC from Asset Register							
Depreciable amount	\$12,995	(000)	This is a check for you.							
Depreciated replacement cost	\$9,062	(000)								
Annual depreciation expense	\$153	(000)								
Planned Expenditures from LTFP										
20 Year Expenditure Projections Note: Enter all values in current 2016 values										
Financial year ending	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$110	\$83	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85
Management budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$110	\$83	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85
Maintenance										
Reactive maintenance budget	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68
Planned maintenance budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Specific maintenance items budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total maintenance	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68	\$68
Capital										
Planned renewal budget	\$62	\$83	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85
Planned upgrade/new budget	\$455	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Asset Disposals										
Est Cost to dispose of assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Carrying value (DRC) of disposed assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016 \$000	2017 \$000	2018 \$000	2019 \$000	2020 \$000	2021 \$000	2022 \$000	2023 \$000	2024 \$000	2025 \$000
Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Capital Renewal	to be incorporated into Forms 2 & 2.1 (where Method 1 is used) OR Form 2B Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
User Comments #2										
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Forms 2A & 2B	2016 \$000	2017 \$000	2018 \$000	2019 \$000	2020 \$000	2021 \$000	2022 \$000	2023 \$000	2024 \$000	2025 \$000
Forecast Capital Upgrade from Form 2C	\$62	\$83	\$85	\$85	\$85	\$85	\$85	\$85	\$85	\$85
	\$455	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Appendix E Abbreviations

AAAC	Average annual asset consumption
AM	Asset management
AM Plan	Asset management plan
ARI	Average recurrence interval
ASC	Annual service cost
BOD	Biochemical (biological) oxygen demand
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DRC	Depreciated replacement cost
EF	Earthworks/formation
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
LTFP	Long term financial plan
MMS	Maintenance management system
PCI	Pavement condition index
RV	Residual value
SoA	State of the Assets
SS	Suspended solids
vph	Vehicles per hour
WDCRC	Written down current replacement cost

Appendix F Glossary

Annual service cost (ASC)

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

Asset

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

Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than non-critical assets.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Deferred maintenance

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

Expenses

Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Financing gap

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

Investment property

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

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost *

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure

The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**

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

- **Reactive maintenance**

Unplanned repair work that is carried out in response to service requests and management/supervisory directions.

- **Specific maintenance**

Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.

- **Unplanned maintenance**

Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

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

Operations

Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Operating expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense

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

Operating expenses

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio

Ratio of estimated budget to projected expenditure for operations, maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Operations, maintenance and renewal gap

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of annual asset renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *

A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

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

Section or segment

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

Service potential

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

Service potential remaining

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

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the Council.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *