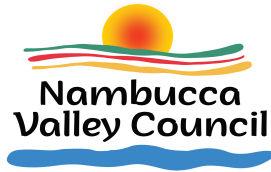




Nambucca Valley Council



Stormwater

ASSET MANAGEMENT PLAN (Concise)



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1. EXECUTIVE SUMMARY

Context

Council provides a network of stormwater infrastructure assets to ensure the drainage of rainwater from developed areas easily directed to natural collection channels and waterways. Stormwater assets also provide for the conveyance of runoff beneath the network of roads via culverts

Stormwater assets include drainage pits, headwalls, interconnecting Pipes, culverts, gross pollutant traps (GPT) and detention basins.

The stormwater network comprises:

Asset Subcategory	Dimension	Replacement Value(M)
Pipes	90.68 km	44.2
Pits, GPTs, other & Headwalls	3791 Nos	6.6
Detention Basins	4 Nos	0.17
Culverts	21.2 Km	17.3

These infrastructure assets have a replacement value of \$51,102,037 for pipes and pits and \$17,350,117 for culverts.

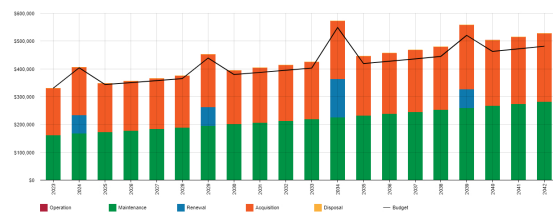
What does it Cost?

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 \$3,846,540 (10 year p.p) or \$ 384,654 on average per year for pipes and pits and \$745,707 (10 year p.p.) or \$74,571 average per year for culverts.

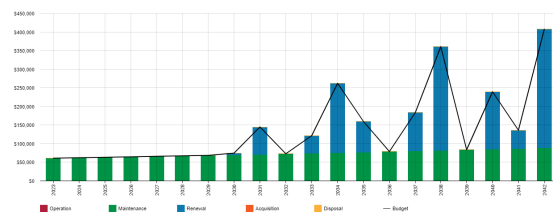
Estimated available funding for this period is \$375,263 urban drainage and \$74,571 for culverts on average per year which is 97.6% (urban) 100% (culverts) of the cost to provide the drainage service. As stormwater network nearly new there is insignificant capital replacement/renewal works in this planning period. 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.

Executive Summary - What does it cost?	\$ '000.Urban + culverts
10 year total cost [10 yr Ops, Maint, Renewal & Upgrade Proj Exp]	\$3,846 +\$745
10 year average cost	\$384 +\$74.5
10 year total LTFP budget [10 yr Ops, Maint, Renewal & Upgrade LTFP Budget]	\$3,752 +\$745
10 year average LTFP budget	\$375 +\$74.5
10 year AM financial indicator	97.6%, 100%
10 year average funding surplus	\$-9.4 +\$0

Urban Drainage Lifecycle Summary



Culvert Lifecycle Summary



What we will do

We plan to provide Stormwater Drainage services for the following:

- Operation, maintenance, renewal and upgrade of Stormwater Assets to meet service levels set by Council in annual budgets.
- Carry out annual maintenance & operations over 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:

- Full upgrades to address capacity of the stormwater system.

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:

- Flooding of Private Properties
- Flooding of Roads
- Flooding of Councils other Assets

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

- Maintenance Management Planning
- Conducting detailed CCTV inspection
- Capital Works Planning

Confidence Levels

This AM Plan is based on medium level of confidence information following the 2020 revaluation process.

The Next Steps

The actions resulting from this asset management plan are:

- Conducting a comprehensive condition assessment for aged section
- Validation of data
- Review Useful life based on condition
- Reviewing Works Programs based on condition to minimise massive future fund need for capital works at a time after this planning period.
- For better forecasting need to develop a long term life cycle costing to predict operation, maintenance and capital cost will be involved after this planning period.
- Need to develop desired level of service

Questions you may have

What is this plan about?

This asset management plan covers the infrastructure assets that serve the Nambucca Valley Council community's Stormwater needs. These assets include Stormwater Assets throughout the community area that enable people to proper access without flooding.

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.

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 Asset network was constructed by developers and from government grants, often provided and accepted without consideration of ongoing operations, maintenance and replacement needs.

As assets approach 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 against the predicted rise in maintenance costs.

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 Asset 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 Asset, the service level reduction may include lower the service we are now providing.

What can we do?

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

What can you do?

We will be pleased to consider your thoughts on the issues raised in this asset management plan and suggestions on how we may change or reduce its Stormwater Asset 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 10 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:

- Nambucca Valley Council's Geographical Information System(GIS)
- Council's Operational Plan 2013-2023
- Nambucca Valley Council's Asset Register (Stormwater Drainage)

This infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide stormwater runoff for adequate protection of people and property from the effects of overland flow or flooding . Disaster

Table 2.1: Assets covered by this Plan

Asset category	Dimension	Replacement Value(\$)
Pipes	Dia 100mm -600mm -79,666 m Dia 675mm-900mm -8207 m Dia 1050mm-1500mm- 1,599 m Open Channel – 1208 m	\$44,272,615
	Culverts (inc headwalls) – 21,274m	\$17,350,117
Pit	Grated Inlet Pit (600 -900) -	\$6,280,774
	Junction Pit (600-900) -	
	Kerb Inlet Pit (1m-3m) 3171 Nos	
	Head Wall (0375-0750)- -619 Nos	\$373,829
	GPT - 1 Nos	
	Detention Basins - 4 Nos	\$174,819
TOTAL		\$68,452,154

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

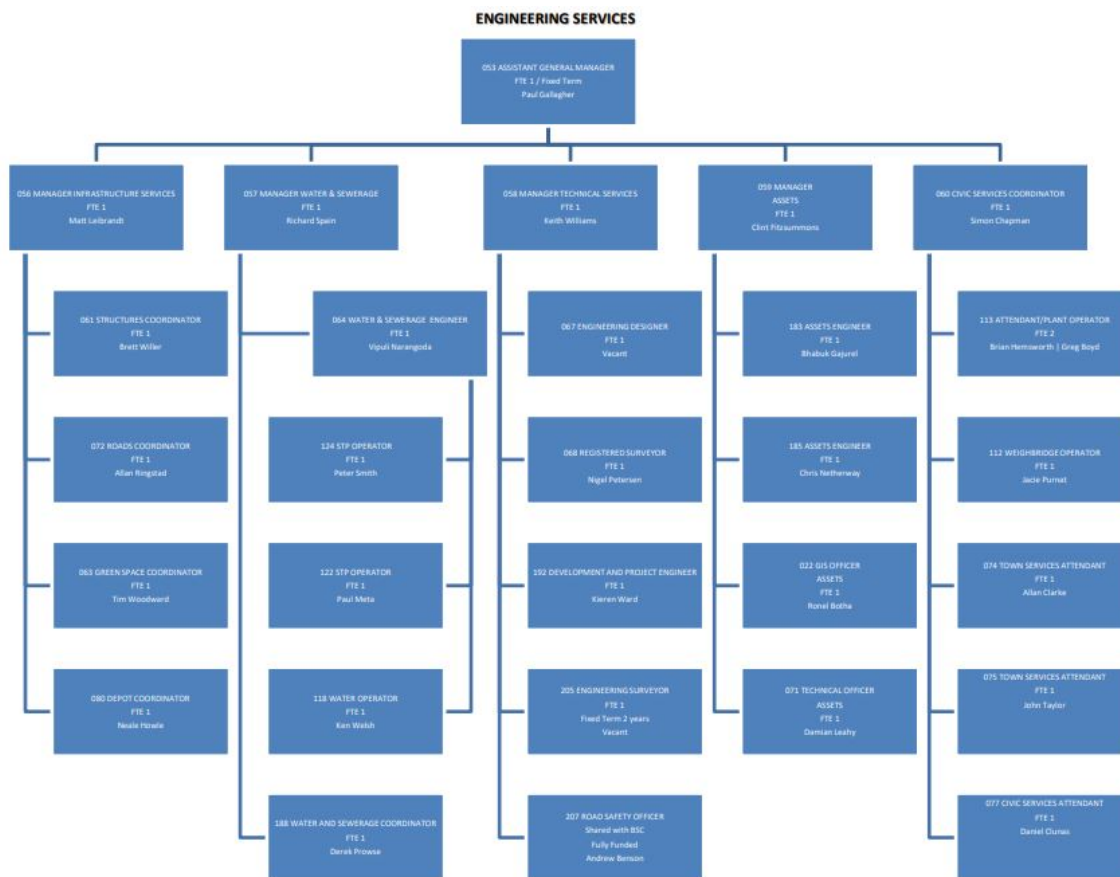
Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none">• Represent needs of community/shareholders,• Allocate resources to meet the organisation's objectives in providing services while managing risks,• Ensure organisation is financial sustainable.
CEO/General Manager	Driver of council plans and direction
Council Officers	Council officers play a major role in managing stormwater drainage assets

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

	to ensure that they provide a level of service that meets the needs of both residents and visitors to the area. Council officers implement the components identified in the Stormwater Asset Management Asset management plan.
Resident/Community	Residents are core users of stormwater drainage assets. Their needs, wants and expectations are conveyed to Council.
Visitors	Visitors are core users of stormwater drainage assets. Their needs, wants and expectations are conveyed to Council.

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

Engineering Services Organisational Structure



2.2 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

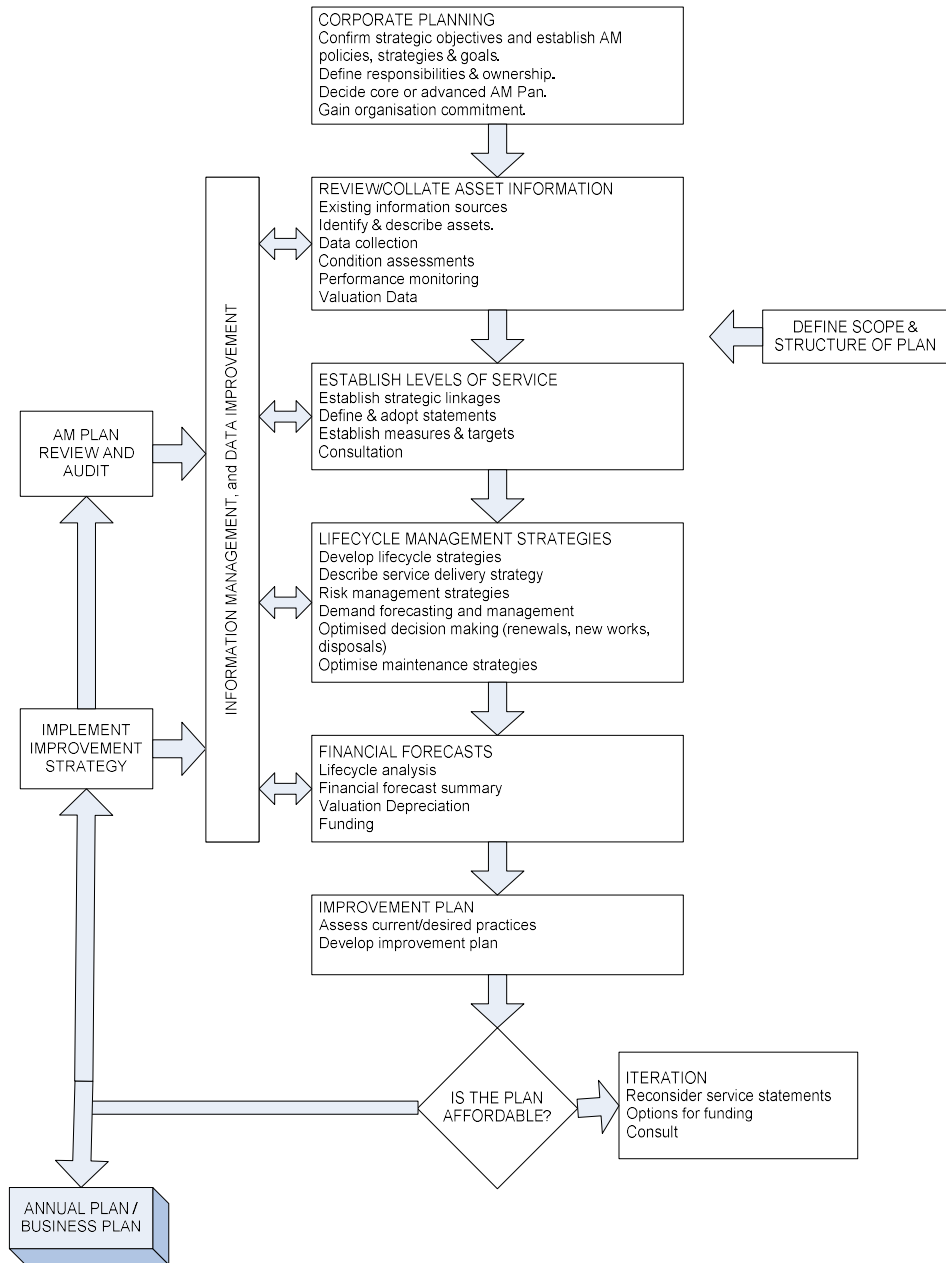
- Levels of service – specifies the services and levels of service to be provided by the organisation,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Life cycle management – how Council will manage its existing and future assets to provide defined levels 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.

|7.

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

Nambucca Valley conducted a random survey in December 2021 by **Jetty Research** to measure satisfaction and priorities with regards to Council-managed facilities and services and to compare with previous survey in 2019. This survey polls a sample of residents on their level of satisfaction with the organisation's services. The customer satisfaction survey reported satisfaction levels for the following services.

Table 3.1: Community Satisfaction Survey Levels

Performance Measure	Result
Satisfaction with Council's overall performance	43% satisfied
Comparison of importance mean scores on Stormwater drainage services (1-5, with 5 being higher satisfaction)	4.06 in 2021 and 3.75 in 2019, a 8% change
Comparison of satisfaction scores on Stormwater drainage services (1-5, with 5 being higher satisfaction)	2.86 in 2021 and 3.37 in 2019, 15% change

It is reasonable to assume that the drop in satisfaction in regard to stormwater drainage is directly linked to the flooding natural disasters that have occurred in the period.

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: **'Living at its Best'** in partnership with community and other Government Agencies.

Our mission is: **"That the Nambucca Valley will value and protect its natural environment, maintain its assets and infrastructure and develop opportunities for its people"**.

To achieve the Vision Council has identified service delivery which are-

- Effective Leadership
- Strategic Direction
- Sustainability of Infrastructure and Assets
- Community Involvement and Enhancement through Partnership with Council
- Enhancement and Protection of the Environment
- Addressing Social and Cultural needs of the Community through Partnerships and Provision of Facilities and Services
- Actively Pursuing Resource Sharing Opportunities

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

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

Goal	Objective	How Goal and Objectives are addressed in AM Plan
Stormwater Drainage System are managed and maintained so that it can provide the levels of service needs to the community	1.Continue Stormwater asset management planning 2.Manage Council's financial assets to improve financial sustainability	By developing a long term financial and asset management plans including the establishment of levels of service to manage and maintain Stormwater Drainage in the most cost effective and efficient manner.

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 management plans for sustainable service delivery.
Environmental Protection Act	Sets out role, purpose, responsibilities of local government in protecting the environment
Occupational Health ,Safety and Welfare Act &Regulations	Sets out role, purpose, responsibilities of local government in providing safe work practices and worksites
Australian Road Rules and Road Safety Act(Opening and Closing Act)	An Act to provide for the opening and closing of roads and other purposes.
Native Vegetation Act (1991)	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 other purposes.
Australian Accounting Standard AAS27	Sets out responsibilities of local government for maintaining accounting standards
Australian Standards and AUS PEC	Various Standards which give the necessary guidelines and specification for stormwater Drainage.

Water Management Act 2000	<p>The objects of this Act are to provide for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations and, in particular:</p> <p>(a) To apply the principles of ecologically sustainable development, and</p> <p>(b) To protect, enhance and restore water sources, their associated ecosystems, ecological processes and biological diversity and their water quality, and</p> <p>(c) To recognise and foster the significant social and economic benefits to the State that result from the sustainable and efficient use of water, including:</p> <p>(i) benefits to the environment, and</p> <p>(ii) benefits to urban communities, agriculture, fisheries, industry and recreation, and</p> <p>(iii) benefits to culture and heritage, and</p> <p>(iv) benefits to the Aboriginal people in relation to their spiritual, social, customary and economic use of land and water,</p> <p>(d) To recognise the role of the community, as a partner with government, in resolving issues relating to the management of water sources,</p> <p>(e) To provide for the orderly, efficient and equitable sharing of water from water sources,</p> <p>(f) To integrate the management of water sources with the management of other aspects of the environment, including the land, its soil, its native vegetation and its native fauna,</p> <p>(g) To encourage the sharing of responsibility for the sustainable and efficient use of water between the Government and water users,</p> <p>(h) To encourage best practice in the management and use of water.</p>
---------------------------	--

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 Community Levels of Service

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

Community Levels of Service measure how the community receives the service and whether the organisation is providing community value.

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

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

The organisation's current and expected community service levels are detailed in Tables 3.4 and 3.5. Table 3.4 shows the agreed expected community levels of service based on resource levels in the current long-term financial plan and community consultation/engagement.

Table 3.4: Community Level of Service

Service Attribute	Service Objective	Performance Measure Process	Current Performance	Expected position in 10 years based on current LTFP
COMMUNITY OUTCOMES				
COMMUNITY LEVELS OF SERVICE				

Quality	1. Keep stormwater out of properties and roads not to be obstructed by flooding.	1.Customer service request relating to quality of service	Not measured yet	Not desired yet
Function	Ensuring stormwater network meets community and user requirements	Customer Satisfaction Survey results	Moderately medium satisfaction for Drainage in 2019 survey	Increase in customer satisfaction survey results
Capacity/ Utilisation	Stormwater Drainage meets programmed delivery needs.	Customer service request relating to capacity or utilization	Not measured yet	Not desired yet

3.5 Technical Levels of Service

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

Technical service measures are linked to annual budgets covering:

- Operations – the regular activities to provide services such as inspections, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (eg clearing blockages and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (eg frequency and cost of pipeline replacement and or relining),
- Upgrade – the activities to provide a higher level of service (eg replacing a pipeline with a larger size) or a new service that did not exist previously (eg a trunk drain).

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

Table 3.5 shows the technical level of service expected to be provided under this AM Plan. The agreed sustainable position in the table documents the position agreed by the Council/Board following community consultation and trade-off of service levels performance, costs and risk within resources available in the long-term financial plan.

⁴ IPWEA, 2011, IIMM, p 2.22

Table 3.5: Technical Levels of Service

Service Attribute	Service Objective	Activity Measure Process	Current Performance *	Desired for Optimum Lifecycle Cost **	Agreed Sustainable Position ***
TECHNICAL LEVELS OF SERVICE					
Operations					
	Infrastructure meets user's needs and operates effectively	Defects and general condition inspection, GPT Cleaning frequency, Reactive Block Clearing	Stormwater Defect inspection reactive only ,GPT Cleaning after heavy rain events	Routine Inspection , Defects identification, Cleaning at regular interval CCTV Condition Inspection	Not defined yet
		Budget		\$10,000	Not defined yet
Maintenance	Maintaining Drainage infrastructure in a practicable service condition	Reactive service requests completed within adopted timeframes	Re-active maintenance	Repair or replacement of minor parts and components of structures to prevent failure.	Not defined yet
		Budget	\$223,500	\$250,000	
Renewal	Return the service capability	Reconstruction, pipeline replacement and component replacement	Pit and pipes replacement, principally due to root intrusion	No Renewals have been identified within the planning period	
		Budget	\$68,900	Not desired yet	
Upgrade/New	Implement drainage solutions to rectify less open channel systems	New infrastructure to replace overgrown and ineffective open channels	Stormwater defects attributed to poor or outdated infrastructure is replaced with a more robust system.	Program to identify and develop solutions to historic drainage problems	Not defined yet
		Budget	\$168,000	\$210,000	

Note: * Current activities and costs (currently funded).

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

*** Activities and costs communicated and agreed with the community as being sustainable (funded position following trade-offs, managing risks and delivering agreed service levels).

4. FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecast

The present position and projections for demand drivers that may impact future service delivery and utilisation of assets 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 Growth	20,000	Forecasted population will be 22,000 in 2025	An increase in population will require an increase in Services from stormwater drainage system.
Climate Change	Coastal Erosion	Sea Level Rise – 3mm/year	Existing coastal gravity drainage, stormwater infrastructure and sewerage systems may become compromised over time as mean sea level rises
Changing rainfall intensities and frequencies	Cleaning GPT's after every major storm event	Potential increasing number of planned and capital works involving upgrading stormwater infrastructure pipes, GPT and pipe culverts.	Increasing resources to undertake stormwater works to meet the demand and protect private properties

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 failures⁵. 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.

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

Table 4.4: Demand Management Plan Summary

Demand Driver	Impact on Services	Demand Management Plan
Development of new residential subdivisions	Can affect future capacity and utilisation requirements	To meet requirements of township development plans
Community demand for flooding mitigation	Increased service level	Utilisation and demand. Record all flooding areas due to lack of stormwater infrastructure and include on a priority basis in the 10 year capital works program.
Upgrading existing stormwater	Increased service level	Record all flooding areas due to inadequate stormwater infrastructure and include a priority planning for mitigation.

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. The cumulative value of new contributed and constructed assets in the future growth areas are yet to be defined.

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

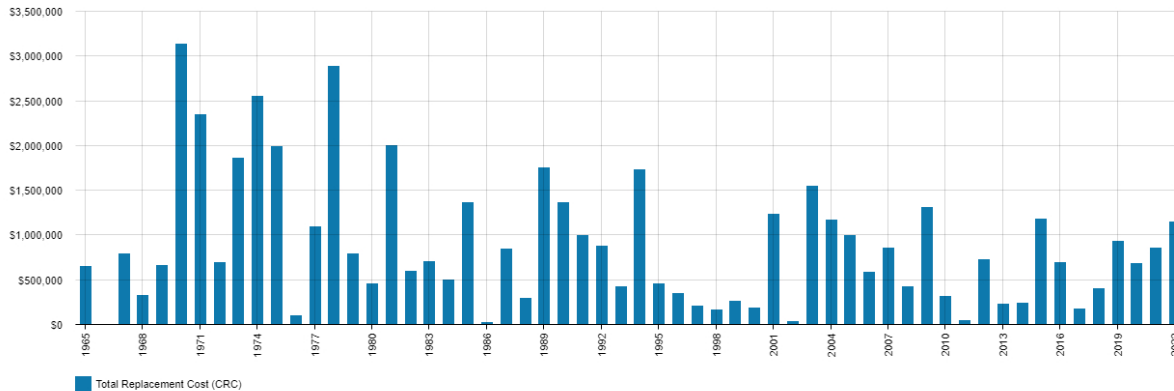
The assets covered by this asset management plan are shown in Table 2.1.

Component	Description
Underground Pipe work and culverts,	Includes pipes of Reinforced concrete in the main, of sizes from 150 mm diameter to 1500 mm dia. Includes uPVC pipes from 100mm to 300mm dia.
Drainage Pits and Headwalls,	Kerb inlet pits, surface inlet pits, junction pits, headwalls
Gross Pollutant Traps	Open Concrete ,Box GPT and Basin

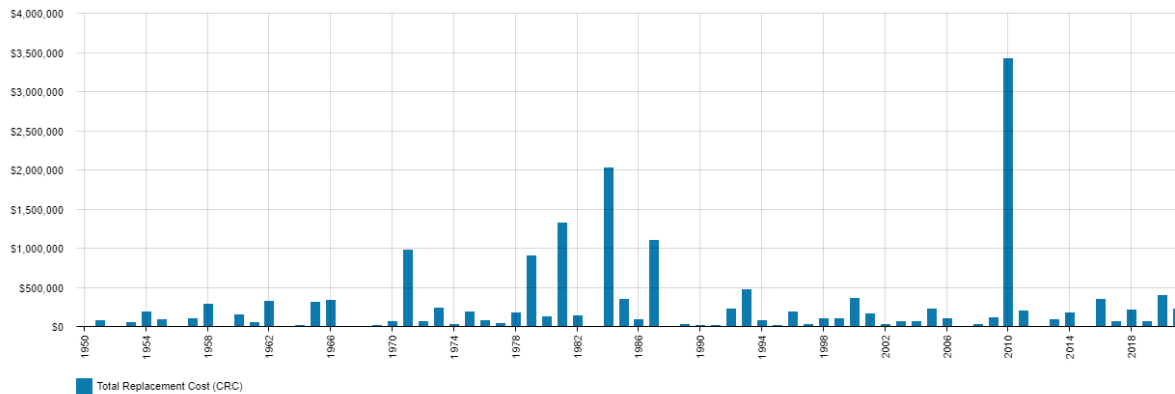
The age profile of the assets include in this AM Plan is shown in Figure 2.

Figure 2: Asset Age Profile

Urban Drainage Age Profile



Culverts Age Profile



Plans showing the Stormwater assets are:

- Stormwater Drainage assets are primarily designed to convey stormwater from its source, such as roads and building roofs, but also including upstream catchment areas in roadways and underground pipes, to the river, creek or natural channel. Generally building roof stormwater is collected by property drains, which are then discharged into Council roadways or stormwater systems. The water is then collected by pits and conveyed to the underground pipe drainage system, which in turn is conveyed through pipes and pits, Gross Pollutant Traps. Cross road culverts convey stormwater from surface drains beneath the roads maintaining access to an acceptable flood immunity.

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
Urban drainage network within a high rainfall area.	There are some deficiencies (need to identify) in the drainage network relating to pipe and pit capacity, flood protection, future requirements due to growth and water quality.

The above service deficiencies were identified from the reports of extreme weather events. .

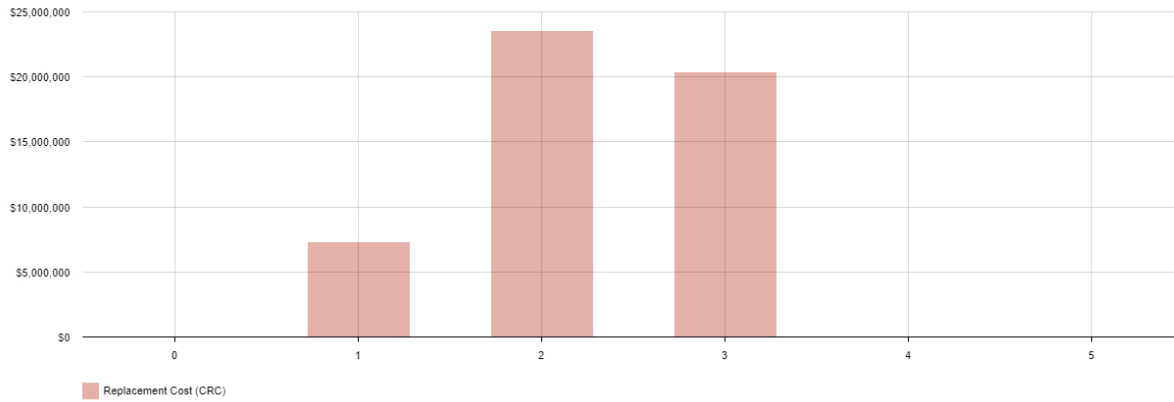
5.1.3 Asset condition

CCTV condition inspection of the urban drainage system was scheduled to commence in 2020

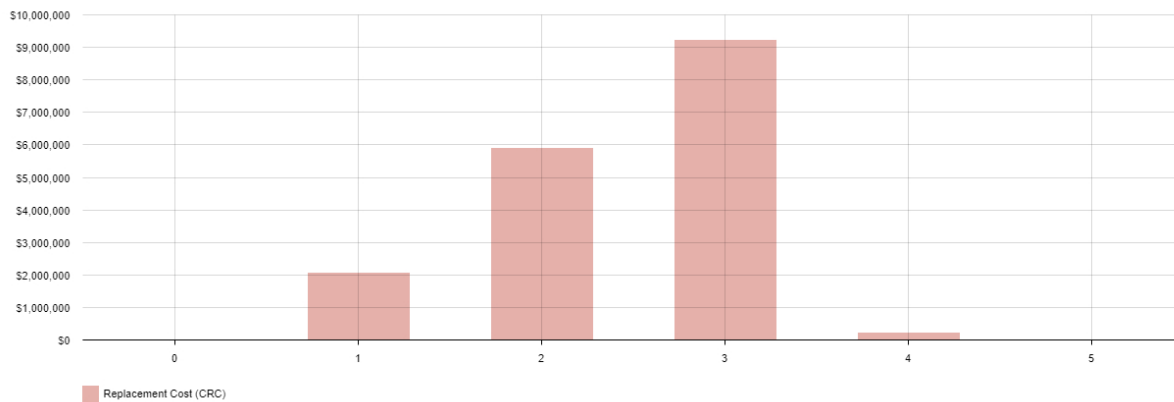
The condition profile of our assets is shown in Figure 3.

Fig 3: Asset Condition Profile

Urban Drainage Condition Profile (by age)



Culvert Condition Profile



Asset sub category	Average Asset Life Cycle	Average Condition Rating of Group
Underground Stormwater drains-RCP	80,85 and 106 years	Not measured yet
Underground Stormwater drains-UPVC	85 years	Not measured yet
Stormwater Pits	106 years	Not measured yet
GPT	40-50 Years	1- 2
Culverts	80 years	Not measured yet

Condition is measured using a 1 – 5 grading system⁶ as detailed in Table 5.1.3.

Table 5.1.3: Simple Condition Grading Model

Condition Grading	Description of Condition
1	Very Good: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Fair: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

⁶ IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

5.1.4 Asset valuations

Urban Drainage

The value of assets recorded in the asset register as at August, 2022 covered by this asset management plan is shown below. Assets were last revalued at 2020. Assets are valued at Brownfield rates

Current Replacement Cost	\$ 51,102,037
Depreciable Amount	\$ 51,102,037
Depreciated Replacement Cost ⁷	\$ 35,159,416
Depreciation Expense	\$ 15,942,621

Useful lives were reviewed in May 2020.

Key assumptions made in preparing the valuations were:

- Local Data (Metric unit rates)
- Local Projects

Major changes from previous valuations are due to better knowledge of the current network profile and history of works completed as well as the impact of market forces of materials required for construction and renewal.

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%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.0%

In 2022 the organisation plans to renew assets at 0 % of the rate they are being consumed and will be increasing its asset stock at 0.4%. There are no identified renewal projects within the life of the current plan.

Culverts

The value of assets recorded in the asset register as at August, 2022 covered by this asset management plan is shown below. Assets were last revalued at 2020. Assets are valued at Brownfield rates

Current Replacement Cost	\$ 17,350,117
Depreciable Amount	\$ 17,350,117
Depreciated Replacement Cost ⁸	\$ 10,423,418
Depreciation Expense	\$ 6,926,698

⁷ Also reported as Written Down Current Replacement Cost (WDCRC).

⁸ Also reported as Written Down Current Replacement Cost (WDCRC).

Useful lives were reviewed in May 2020.

Key assumptions made in preparing the valuations were:

- Local Data (Metric unit rates)
- Local Projects

Major changes from previous valuations are due to better knowledge of the current network profile and history of works completed as well as the impact of market forces of materials required for construction and renewal.

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)	1.2%
---	------

Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.0%
--	------

In 2022 the organisation plans to renew assets at 0 % of the rate they are being consumed and will be increasing its asset stock at 0%. There are a small number of renewal projects identified late in the current 10 year planning period. Further condition assessment over time may change this position.

5.1.5 Historical Data

Historical data used to update asset register, in some instances, where missing construction year and/or financial costs.

5.2 Infrastructure Risk Management Plan

An assessment of risks⁹ associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Infrastructure Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational are summarised in Table 5.2. These risks are reported to management and Council/Board.

Table 5.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Side Entry Pits & headwalls Blocked	Overflow on roads, footpath and properties	High	"Routine Inspection for on going maintenance plan, monitor"	L	Not estimated yet
Stormwater Pipes and culverts	Pipe failure ,Water flow obstructed due to over sedimentation on pipe, Capacity causing flooding to roads and private property	High	Condition assessment to identify pipes and culverts requiring renewal	L	Not estimated yet
Pollution Control Devices(GPT, Retention Basin)	Environmental Pollution depletes the oxygen in water, forming algae,	High	Routine Inspection	L	Not estimated yet

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 activities like street sweeping and frequency of routine inspections.

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 concrete damage repairs 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 Budget \$
2020/2021 financial year	\$151,685
2021/2022 financial year	\$112,000
2022/2023 financial year	\$223,500

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.
- Operating Costs include Asset inspections, condition auditing and monitoring, data collection, cleaning e.g. pit clearing, pipe jetting, GPT clearing.
- Maintenance costs include all repairs/maintenance which are not classified as renewals. Repair or replacement of minor parts and components of structures to prevent failure.

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
Pipes & Culverts	Fracture, cracking, joint displacement, Tree root infiltration	Routine inspection and identifying defects for maintenance
Side Entry Pits and headwalls	Blocked	Check & clean annually or as required after rain events
Gross Pollutant Traps	Sedimentation, debris on GPT	Check & clean regular interval by an approved contractor

Standards and specifications

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

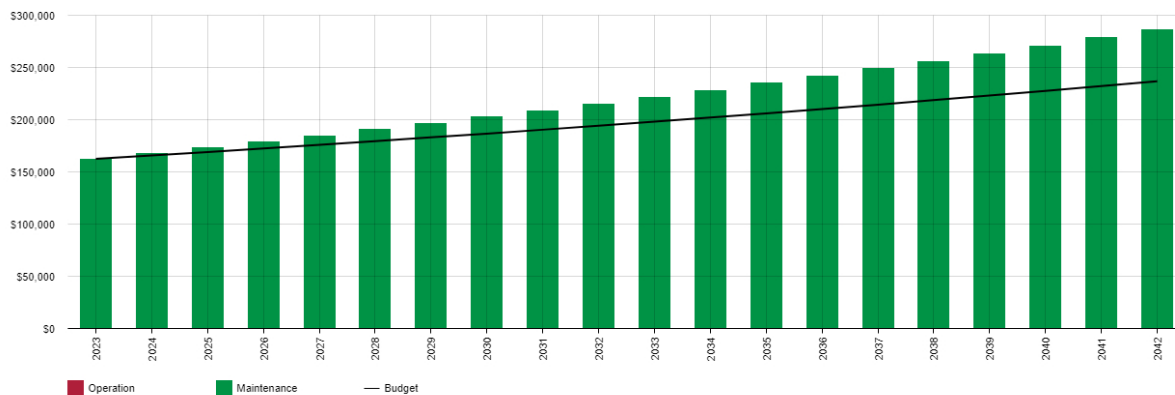
- Local Government Act
- Road Traffic Act
- Australian Road Rules
- Native Vegetation Act
- Environment Protection Act

5.3.3 Summary of future operations and maintenance expenditures

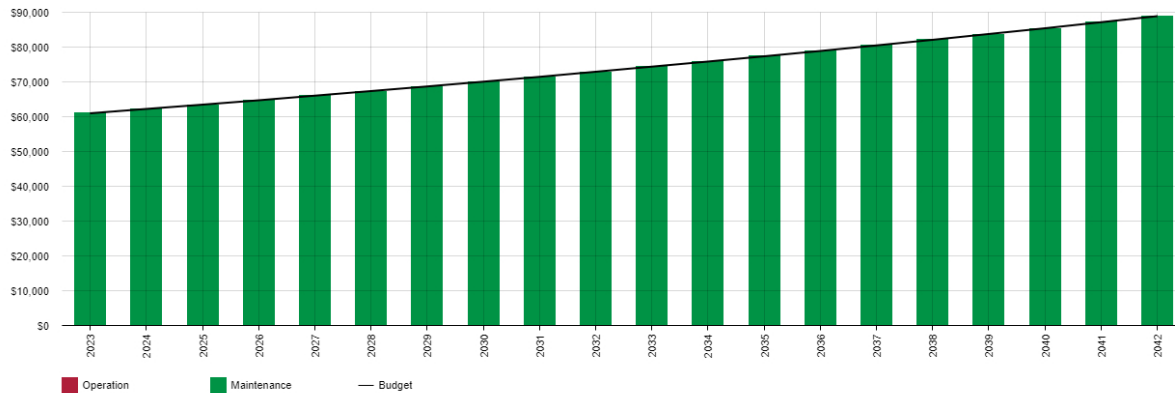
Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2021 dollar values (i.e. real values).

Figure 4: Projected Operations and Maintenance Expenditure

Urban Drainage Operation & Maintenance



Culverts Operation & Maintenance



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 CCTV pipe surveys), or
- Method 3 uses a combination of average *network renewals* plus *defect repairs* in the *Renewal Plan* and *Defect Repair Plan* worksheets on the 'Expenditure template'.

Method 1 was used for this asset management plan.

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 June 2015.¹⁰

Table 5.4.1: Useful Lives of Assets

Asset (Sub)Category	Useful life
Pipes	80, 85 and 106 years
Culverts	80 years

Pit	106 years
GPT and Basin	40 and 60 years

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, this may well be applicable to cross road culverts but is unlikely in urban drainage in a fully built out environment. Allowance has been made in the replacement value of urban piped infrastructure that it may be lined at the end of its useful life to avoid costly excavation through services and extraction and replacement of pipes. It should be noted that no pipe renewal is predicted to occur during this planning period.
- 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 upgrading a culvert that has insufficient capacity), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (eg pipes with exposed reinforcement).¹¹

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.¹²

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

¹¹ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

¹² Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

Criteria	Weighting
Condition Rating	40%
Risk	30%
Asset Criticality	30%
Total	100%

Renewal and replacement standards

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

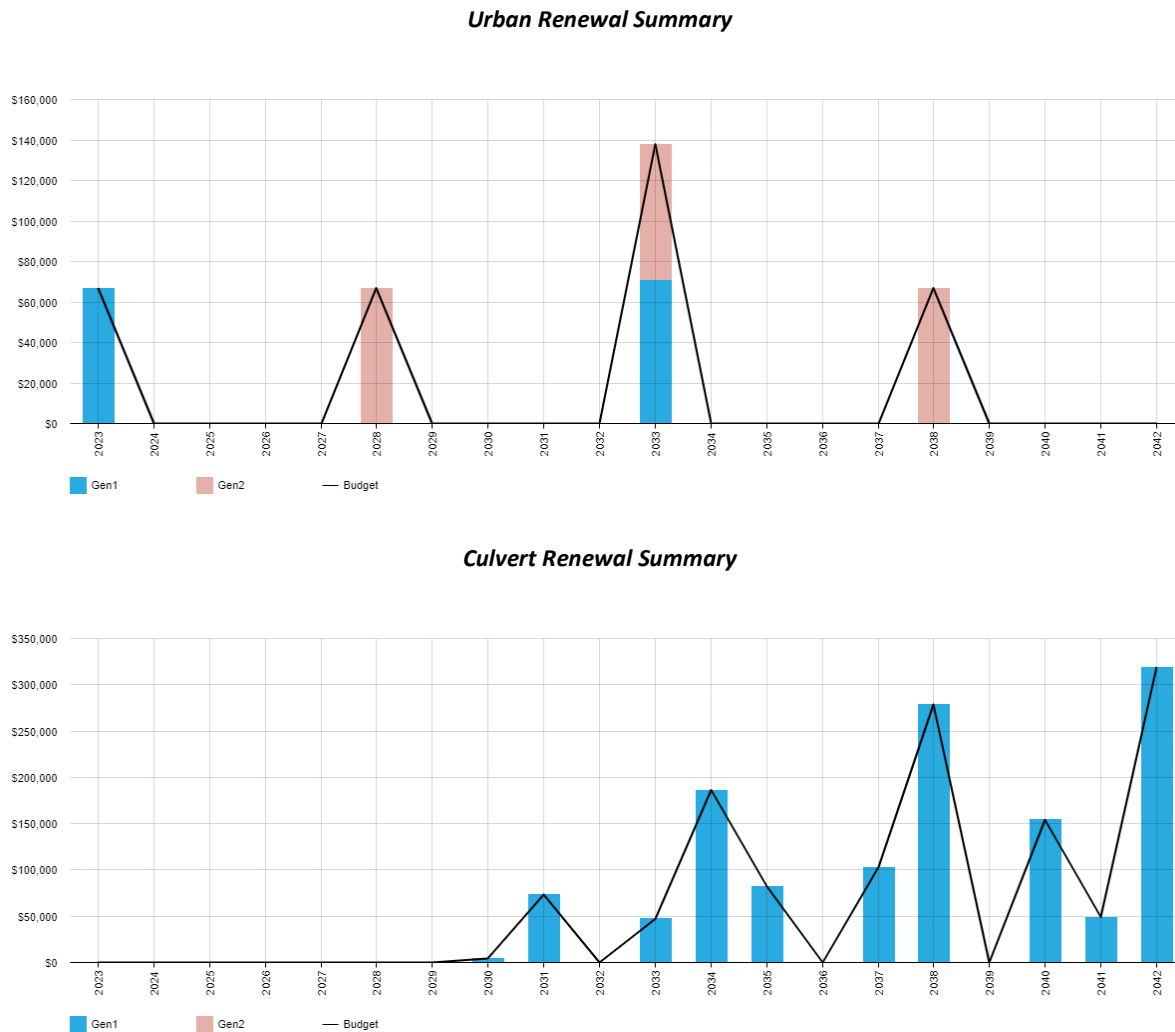
- Local Government Act
- Roads Traffic Act
- Australian Road Rules
- Environment Protection Act
- Native Vegetation Act
- Workplace Health & Safety

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. No asset renewals are forecast within the urban drainage network for the life of this plan, however there are forecast 5 year cycle renewal to the water treatment devices in Dawson Park. Culvert renewals are forecast for later period of this plan as is depicted below. The expenditure is summarised in Fig 5. Note that all amounts are shown in real values.

There has been an initial budget provision for some renewal to urban drainage and culverts at the commencement of the period. This funding is to address small drainage projects that have been found through road inspections and customer requests, as such they have not registered on the long term financial plan. They will be reconciled on capitalization at the completion of the work. Other projects are expected to come to light post the recent flood events e.g. rural culverts to be replaced.

Fig 5: Projected Capital Renewal and Replacement Expenditure



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 7.2.

5.5 Creation/Acquisition/Upgrade Plan

Acquisition are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Council through new subdivisions.

5.5.1 Selection Criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

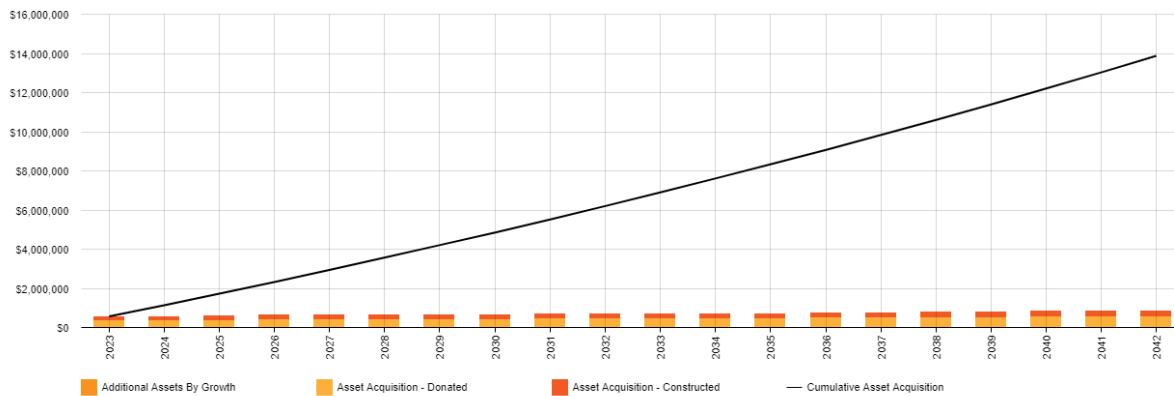
Table 5.4.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Business and commercial centres	15%
Missing links within the drainage/road system	25%
Urban growth areas	15%
Petitions received	20%
Tourist areas	25%
Total	100%

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarized in Figure 5.4.1 and shown relative to the proposed acquisition budget.

Urban Drainage Acquisition Summary



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.

At present council doesn't have any plan for dispose of any stormwater section currently in use.

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 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:

- Upgrade all stormwater systems

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:

- Flooding of properties and roads

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:

- Legal
- Property Damage Due to Flooding
- Insurance Claims

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.

6.0 RISK MANAGEMENT PLANNING

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

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

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

6.1 Critical Assets

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

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

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Stormwater pipes in urban environment	Pipe blockage	Localised flooding that may pose a risk to vehicle safety or property damage
Stormwater pipes in urban environment	Pipe collapse of joint failure	Undermining roads that may pose a risk to vehicle safety or property damage
Stormwater pits in urban environment	Pits fill with silt and debris, cease to function	Localised flooding that may pose a risk to vehicle safety or property damage
Cross road culverts	Culvert blockage	Localised flooding of road that may scour road surface posing a risk to vehicle safety

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

6.2 Risk Assessment

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

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

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

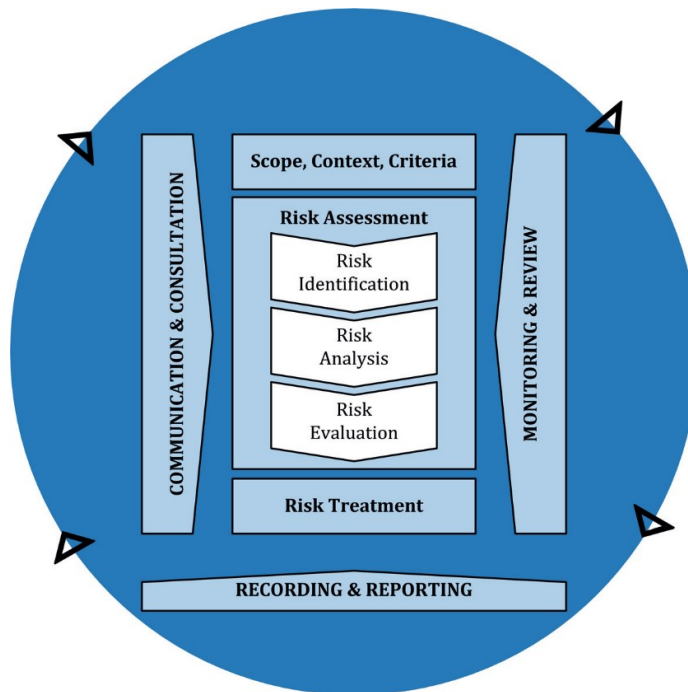


Fig 6.2 Risk Management Process – Abridged

Source: ISO 31000:2018, Figure 1, p9

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

An assessment of risks¹³ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

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

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Urban Stormwater drainage	System blockages resulting in localized flooding	High	Continue CCTV camera inspections of network to identify and rectify damage	Low	\$20,000 p.a.

¹³ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

Urban Stormwater drainage	System failure due to pipe collapse of joint failure	Medium	Continue CCTV camera inspections of network to identify and rectify damage	Low	\$20,000 p.a.
Cross Road Culverts	Pipe failure due to blockage resulting in localized over road flooding and scour	Medium	Regular inspections and clearing of culvert headwalls with road re-grading operations	Low	\$10,000

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

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', 1 and to respond to possible disruptions to ensure continuity of service.

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

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

Table 6.3: Resilience

Threat / Hazard	Current Resilience Approach
Discontinuation of road network service (including drainage infrastructure) due to severe weather damage	Council require a Business Continuity Policy and Plans to ensure that in the event of disruption to the services, a strategy is in place to provide for the reinstatement of those services as soon as possible to minimise any disruption to the community

6.4 Service and Risk Trade-Offs

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

6.4.1 What we cannot do

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

Nil

6.4.2 Service trade-off

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

Nil

6.4.3 Risk trade-off

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

Nil

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

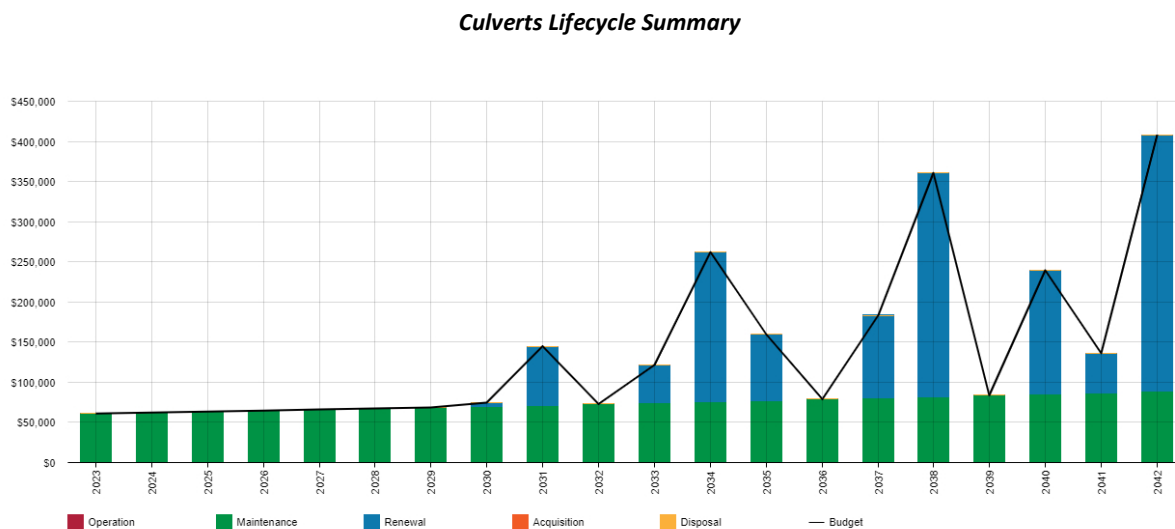
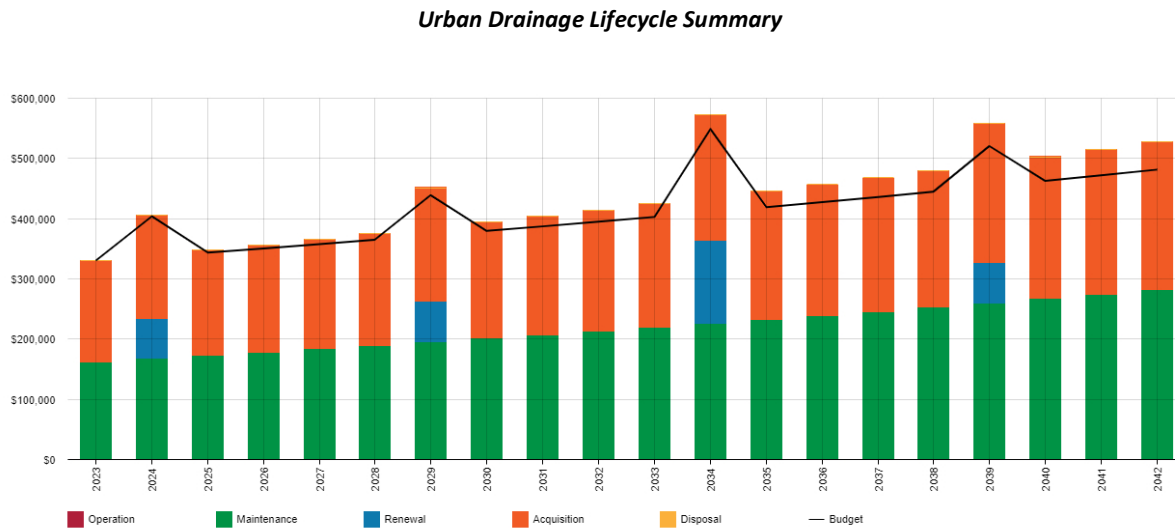
7. FINANCIAL SUMMARY

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

7.1 Financial Statements and Projections

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



7.1.1 Asset Valuations

Urban Drainage

The value of assets recorded in the asset register as at August,2022 covered by this asset management plan is shown below. Assets were last revalued at 2020. Assets are valued at Brownfield rates

Current Replacement Cost	\$ 51,102,037
Depreciable Amount	\$ 51,102,037
Depreciated Replacement Cost ¹⁴	\$ 35,159,416

¹⁴ Also reported as Written Down Current Replacement Cost (WDCRC).

Depreciation Expense	\$ 15,942,621
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Useful lives were reviewed in May 2020.

Culverts

The value of assets recorded in the asset register as at August, 2022 covered by this asset management plan is shown below. Assets were last revalued at 2020. Assets are valued at Brownfield rates

Current Replacement Cost	\$ 17,350,117
Depreciable Amount	\$ 17,350,117
Depreciated Replacement Cost ¹⁵	\$ 10,423,418
Depreciation Expense	\$ 6,926,698

Useful lives were reviewed in May 2020.

7.1.2 Sustainability of service delivery (Urban Drainage)

There are two key indicators of sustainable service delivery that are considered in the asset management plan for this service area. The two indicators are the:

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio ¹⁶	100%
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The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 100% of the funds required for the optimal renewal of assets. There are no forecasted asset renewals for the urban drainage network, except for the cyclic replacement of the water treatment system in Dawson Park, within the 10 year planning period.

Medium term – 10 year financial planning period

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

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

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$384,654 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$375,263 on average per year giving a 10 year funding shortfall of \$9,391 per year. This indicates that 97.6% of the forecast costs needed to provide the services

¹⁵ Also reported as Written Down Current Replacement Cost (WDCRC).

¹⁶ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

documented in this asset management plan are accommodated in the proposed budget. This excludes acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast costs 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.

Forecast costs for long term financial plan

Table 6.1.2 shows the forecast costs for the 10 year long term financial plan.

Forecast costs are shown in current dollar real values.

Table 7.1.2: Forecast Costs for Long Term Financial Plan

Year	Forecast Acquisition	Operation	Maintenance	Renewal	Disposal
2023	\$168,000	\$0	\$162,500	\$0	\$0
2024	\$171,360	\$0	\$167,720	\$66,872	\$0
2025	\$174,787	\$0	\$173,047	\$0	\$0
2026	\$178,283	\$0	\$178,484	\$0	\$0
2027	\$181,849	\$0	\$184,032	\$0	\$0
2028	\$185,486	\$0	\$189,695	\$0	\$0
2029	\$189,195	\$0	\$195,473	\$66,872	\$0
2030	\$192,979	\$0	\$201,371	\$0	\$0
2031	\$196,839	\$0	\$207,389	\$0	\$0
2032	\$200,776	\$0	\$213,531	\$0	\$0

7.1.3 Sustainability of service delivery (Culverts)

There are two key indicators of sustainable service delivery that are considered in the asset management plan for this service area. The two indicators are the:

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

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio¹⁷ 100%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 100% of the funds required for the optimal renewal of assets. No specific renewals have been identified as yet to align with this funding as the culverts are yet to be fully evaluated.

Medium term – 10 year financial planning period

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

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

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$74,571 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$74,571 on average per year giving a 10 year funding surplus of \$0 per year. This indicates that 100% of the forecast costs needed to provide the services documented in this asset management plan are accommodated in the proposed budget. This excludes acquired assets.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast costs 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.

Forecast costs for long term financial plan

Table 7.1.3 shows the forecast costs for the 10 year long term financial plan.

Forecast costs are shown in current dollar real values.

¹⁷ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Table 7.1.3: Forecast Costs for Long Term Financial Plan

Year	Forecast Acquisition	Operation	Maintenance	Renewal	Disposal
2023	\$0	\$0	\$61,000	\$0	\$0
2024	\$0	\$0	\$62,220	\$0	\$0
2025	\$0	\$0	\$63,464	\$0	\$0
2026	\$0	\$0	\$64,734	\$0	\$0
2027	\$0	\$0	\$66,028	\$0	\$0
2028	\$0	\$0	\$67,349	\$0	\$0
2029	\$0	\$0	\$68,696	\$0	\$0
2030	\$0	\$0	\$70,070	\$4,450	\$0
2031	\$0	\$0	\$71,471	\$73,324	\$0
2032	\$0	\$0	\$72,901	\$0	\$0

7.2 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.

7.3 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

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

7.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan 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
All expenditure is stated in dollar values as at 2020 with no allowance made for inflation over the 10-year planning period.	All values are in today's dollars no % increase has been included
Projected Budget for renewal/replacement works remain constant.	Future renewal work is not specified, it is assumed that budget will remain constant.

Continuation of the current rate and pattern of urban development	Population growth factor of 1.57 % per year has been included
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7.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale¹⁸ in accordance with Table 6.5.

Table 6.5: Data Confidence Grading System

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

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 6.5.1.

Table 6.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	C	From statistics, work need on this
Growth projections	B	Considered from council strategic plan 2023
Operations expenditures	C	Operations and maintenance expenditure are combined
Maintenance expenditures	C	Operations and maintenance expenditure are combined
Projected Renewal exps. - Asset values	B	Valuation completed in 2020
- Asset residual values	D	Asset condition assessment yet to be done
- Asset useful lives	D	Asset condition assessment yet to be done
- Condition modelling	D	Asset condition assessment yet to be done
- Network renewals	E	No data exists
- Defect repairs	C	Reactive
Upgrade/New expenditures	E	No data exists
Disposal expenditures	D	No disposals are planned. No data exists

¹⁸ IPWEA, 2011, IIMM, Table 2.4.6, p 2 | 59.

Over all data sources the data confidence is assessed as low confidence level for data used in the preparation of this AM Plan due to primarily a lack of condition assessment.

8 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices

8.1.1 Accounting and financial systems

Council uses **Civica Authority** as Financial System.

Accountabilities for financial systems

Responsible accounting officer is Manager Finance for the management of council financial system

Accounting standards and regulations

Australian Accounting Standards set by the Australian Accounting Standards Board (AASB)
Australasian Equivalents to the International Financial Reporting Standards
State and Federal Legislation

Capital/maintenance threshold

Council doesn't have any policy for capital/maintenance threshold for stormwater drainage system

Required changes to accounting financial systems arising from this AM Plan

Defining threshold for capital and maintenance works.

8.1.2 Asset management system

Nambucca Valley Council GIS

Asset registers

Currently Council using Excel Spread sheet as Asset Register

Linkage from asset management to financial system

Asset ID is used to link asset management to financial system

Accountabilities for asset management system and data maintenance

The accountability/responsibility is a combination of the two departments. Manager Assets and Manager Finance are in core responsible positions.

Required changes to asset management system arising from this AM Plan

Conducting a detailed condition assessment procedure to predict actual condition of the asset. This work commenced in 2020 and is ongoing..

8.2 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	Conducting a detailed condition assessment, starting with older assets to assess the remaining useful lives and updating asset register.	Manager Assets, Asset Engineer	Staff, CCTV condition inspection by Contractor	Within 2 years
2	Annually Review 10 Year Capital Works Program	Manager Assets, Asset Engineer	Staff	Before every financial budget
4	Develop and improvement of maintenance practices	Manager Assets, Asset Engineer	Developing routine inspection regime	Within 2 years
4	Developing level of service	Manager Assets, Asset Engineer	Staff	Before next AMP
5	Continue to maintain and validating the asset register	Asset Engineer	Staff	On going
6	LTFP & Asset Management Plan are to align	Manager Assets		Start from 1 st FY
7	Identifying threshold for capital and maintenance works	Manager Assets	Administration	Not defined
8	Maintaining Customer Complaints against particular asset and defects type, that will be helpful to develop level of service and maintenance improvement.	Asset Engineer	Staff	On going
9	Undertaking Risk Management Plan for this asset class	Manager Assets, Asset Engineer	Staff	As early as possible
10	Separation of Maintenance and Operating cost	Accounts and finance, Asset Section	Staff	From next FY

8.3 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 election cycle).

8.4 Performance Measures

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

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into 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.

9. REFERENCES

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

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

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

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

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

Sample Council, 'Annual Plan and Budget'.

10. APPENDICES

Appendix A Acquisition Forecast

Appendix B Operational Forecast

Appendix C Maintenance Forecast

Appendix D Renewal Forecast

Appendix E Abbreviations

Appendix F Glossary

Appendix A Acquisition Forecast

Acquisition forecasts are based on current trends in development growth and urban redevelopment and expansion. Growth trends will be monitored and forecasts adjusted accordingly.

Table A1 – Urban Drainage Acquisition Forecast Summary

Year	Constructed	Contributed	Growth
2023	\$168,000	\$394,863	0
2024	\$171,360	\$403,566	0
2025	\$174,787	\$412,461	0
2026	\$178,283	\$421,551	0
2027	\$181,849	\$430,842	0
2028	\$185,486	\$440,338	0
2029	\$189,195	\$450,043	0
2030	\$192,979	\$459,962	0
2031	\$196,839	\$470,100	0
2032	\$200,776	\$480,461	0
2033	\$204,791	\$491,050	0
2034	\$208,887	\$501,873	0
2035	\$213,065	\$512,934	0
2036	\$217,326	\$524,239	0
2037	\$221,672	\$535,793	0
2038	\$226,106	\$547,602	0
2039	\$230,628	\$559,671	0
2040	\$235,241	\$572,006	0
2041	\$239,945	\$584,613	0
2042	\$244,744	\$597,498	0

Table A2 – Culverts Acquisition Forecast Summary

Year	Constructed	Contributed	Growth
2022	\$0	\$0	\$0
2023	\$0	\$0	\$0
2024	\$0	\$0	\$0
2025	\$0	\$0	\$0
2026	\$0	\$0	\$0
2027	\$0	\$0	\$0
2028	\$0	\$0	\$0
2029	\$0	\$0	\$0
2030	\$0	\$0	\$0
2031	\$0	\$0	\$0
2032	\$0	\$0	\$0
2033	\$0	\$0	\$0
2034	\$0	\$0	\$0
2035	\$0	\$0	\$0
2036	\$0	\$0	\$0
2037	\$0	\$0	\$0
2038	\$0	\$0	\$0
2039	\$0	\$0	\$0
2040	\$0	\$0	\$0
2041	\$0	\$0	\$0

Appendix B Operation Forecast

Operational costs is a shared street sweeping function with roads. Costs will be apportioned to match available budget and address service expectations. Growth is factored in to allow for acquisition of new assets and will be monitored and adjusted to match growth trends.

Table B1 – Urban Drainage Operation Forecast Summary

Year	Operation Forecast	Additional Forecast	Operation	Total Operation Forecast
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
2031				
2032				
2033				
2034				
2035				
2036				
2037				
2038				
2039				
2040				
2041				

Table B2 – Culvert Operation Forecast Summary

Year	Operation Forecast	Additional Forecast	Operation	Total Operation Forecast
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
2031				
2032				
2033				
2034				
2035				
2036				
2037				
2038				
2039				
2040				
2041				

Appendix C Maintenance Forecast

The maintenance forecast includes provision for growth in acquisition, this factor will be monitored and maintenance expenditure adjusted accordingly.

Table C1 – Urban Drainage Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Forecast	Maintenance	Total Maintenance Forecast
2023	\$162,500		\$1,970	\$162,500
2024	\$165,750		\$2,012	\$167,720
2025	\$169,065		\$2,055	\$173,047
2026	\$172,446		\$2,099	\$178,484
2027	\$175,895		\$2,144	\$184,032
2028	\$179,413		\$2,190	\$189,695
2029	\$183,001		\$2,237	\$195,473
2030	\$186,661		\$2,285	\$201,371
2031	\$190,395		\$2,334	\$207,389
2032	\$194,203		\$2,384	\$213,531
2033	\$198,087		\$2,435	\$219,800
2034	\$202,048		\$2,488	\$226,197
2035	\$206,089		\$2,541	\$232,725
2036	\$210,211		\$2,595	\$239,388
2037	\$214,415		\$2,651	\$246,188
2038	\$218,704		\$2,708	\$253,127
2039	\$223,078		\$2,766	\$260,209
2040	\$227,539		\$2,825	\$267,437
2041	\$232,090		\$2,886	\$274,813
2042	\$236,732		\$2,886	\$282,341

Table C2 – Culvert Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Forecast	Maintenance	Total Maintenance Forecast
2023	\$61,000		0	\$61,000
2024	\$62,220		0	\$62,220
2025	\$63,464		0	\$63,464
2026	\$64,734		0	\$64,734
2027	\$66,028		0	\$66,028
2028	\$67,349		0	\$67,349
2029	\$68,696		0	\$68,696
2030	\$70,070		0	\$70,070
2031	\$71,471		0	\$71,471
2032	\$72,901		0	\$72,901
2033	\$74,359		0	\$74,359
2034	\$75,846		0	\$75,846
2035	\$77,363		0	\$77,363
2036	\$78,910		0	\$78,910
2037	\$80,488		0	\$80,488
2038	\$82,098		0	\$82,098
2039	\$83,740		0	\$83,740
2040	\$85,415		0	\$85,415
2041	\$87,123		0	\$87,123
2042	\$88,865		0	\$88,865

Appendix D Renewal Forecast

Renewal forecast is derived from age of the existing infrastructure. The condition of the assets will be monitored regularly and useful life adjusted accordingly which will in turn influence this forecast. No Renewal is forecast for the Urban Drainage system in this planning period.

Table D1 – Urban Drainage Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2023	\$0	\$0
2024	\$66,872	\$66,872
2025	\$0	\$0
2026	\$0	\$0
2027	\$0	\$0
2028	\$0	\$0
2029	\$66,872	\$66,872
2030	\$0	\$0
2031	\$0	\$0
2032	\$0	\$0
2033	\$0	\$0
2034	\$137,951	\$137,951
2035	\$0	\$0
2036	\$0	\$0
2037	\$0	\$0
2038	\$0	\$0
2039	\$66,872	\$66,872
2040	\$0	\$0
2041	\$0	\$0
2042	\$0	\$0

CVR ID	GIS ID	Asset Name	Location	Area	Remain- ing Life	Forecast Renewal Year	Renewal Cost	Useful Life
942047	230	Pond Aeration - Dawkins Park	Dawkins Park	Pond Aeration	0	2024	\$66,872	5
942047	230	Pond Aeration - Dawkins Park	Dawkins Park	Pond Aeration		2029	\$66,872	5
942047	230	Pond Aeration - Dawkins Park	Dawkins Park	Pond Aeration		2034	\$66,872	5
942045	229	Rain Garden SW Filter - Dawkins Park (detention basin)	Dawkins Park	Detention Basin	10	2034	\$71,079	15
942047	230	Pond Aeration - Dawkins Park	Dawkins Park	Pond Aeration		2039	\$66,872	5

Table D2 – Culvert Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2023	\$0	\$0
2024	\$0	\$0
2025	\$0	\$0
2026	\$0	\$0
2027	\$0	\$0
2028	\$0	\$0
2029	\$0	\$0
2030	\$4,450	\$4,450
2031	\$73,324	\$73,324
2032	\$0	\$0
2033	\$47,154	\$47,154
2034	\$186,284	\$186,284
2035	\$82,136	\$82,136
2036	\$0	\$0
2037	\$103,006	\$103,006
2038	\$278,632	\$278,632
2039	\$0	\$0
2040	\$154,069	\$154,069
2041	\$49,033	\$49,033
2042	\$319,204	\$319,204

CVR ID	GIS ID	Asset Name	Size	Length	Remaining Life	Forecast Renewal Year	Renewal Cost	Useful Life
941875	300744	Culvert - Taylors Arm Road - Ch.47638	RCP 450 Dia	9.234860385887666	7	2030	\$4,450	80
							\$4,450	
941718	300807	Culvert - Taylors Arm Road - Ch.6536.5	RCP 1350 Dia	14.05819654963545	8	2031	\$28,107	80
941810	300791	Culvert - Taylors Arm Road - Ch.23957	RCP 450 Dia	9.96586565383996	8	2031	\$4,614	80
941811	300887	Culvert - Taylors Arm Road - Ch.33497	RCP 375 Dia	7.08576637306419	8	2031	\$1,833	80
941812	300703	Culvert - Taylors Arm Road - Ch.33871	RCP 375 Dia	17.09783496833007	8	2031	\$4,452	80
941813	300835	Culvert - Taylors Arm Road - Ch.34053	RCP 450 Dia	16.48137931586748	8	2031	\$7,382	80
941814	300750	Culvert - Taylors Arm Road - Ch.34265	RCP 900 Dia	12.04729406407816	8	2031	\$13,468	80
941815	300864	Culvert - Taylors Arm Road - Ch.34265	RCP 900 Dia	12.04743974255012	8	2031	\$13,468	80
							\$73,324	
941835	300805	Culvert - Taylors Arm Road - Ch.40887	RCP 900 Dia	5.687330539505356	10	2033	\$6,734	80
941836	300832	Culvert - Taylors Arm Road - Ch.41243	RCP 600 Dia	8.7401542943344	10	2033	\$6,473	80
941837	300777	Culvert - Taylors Arm Road - Ch.41525	RCP 1050 Dia	11.69273698296326	10	2033	\$18,534	80
941838	300889	Culvert - Taylors Arm Road - Ch.41525	RCP 1050 Dia	11.69273698296326	10	2033	\$15,413	80
							\$47,154	

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).

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *

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.