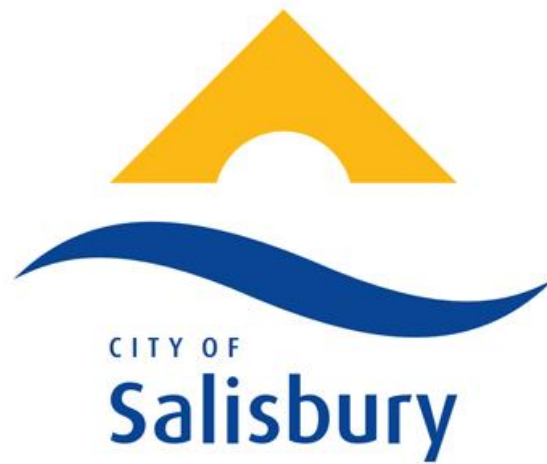


City of Salisbury



Drainage & Waterways

Asset Management Plan



March 2015

Version 4

Document Control

Document ID: 59 299 140531 nams plus3 amp template v3.1

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	30/11/2014	First Draft	JC	SAMG	
2	30/12/2014	Second Draft – Comments from SAMG / Asset Owners	JC	SAMG	
3	31/1/2015	Third Draft – Comments from EXEC	JC	EXEC	
4	30/3/2015	Fourth Draft – Updated financials, matched to New Initiative Bid, changed year one to start in 2015/16 (prev. 2014/15)	JC	EXEC	Council
5a	20/10/2015	Fifth Draft – Updated Appendices to correctly reflect capital renewal program names.	JC		
5b	16/11/2015	Final version endorsed by Council	JC	EXEC	Council

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1. EXECUTIVE SUMMARY

Context

The City of Salisbury is located on the northern fringes of Adelaide, South Australia. It has an estimated population of 136,000¹ people and encompasses an area of 158 km². The population is forecast to grow to 146,000 (7.4%) by 2031.

The City of Salisbury has excelled in its commitment and vision from the 1970s to construct Wetland and Waterway Systems that protect the Barker Inlet from stormwater pollution and have created significant Biodiversity, Tourism, Water Harvesting and Flood Management outcomes for generations to come.

Managing these watercourses and wetland assets requires a plan to ensure services are sustainable for current and future generations at a reasonable price.

The Drainage & Waterways Service

The Drainage & Waterways network comprises:

- 163 Open Systems
- 31,617 Pits & Pipes
- 57 Retention Dams

These infrastructure assets have a replacement value of \$388.8M as reported in Councils audited Financial Statements as at 30th June 2014.

The Approach

For Drainage & Waterway assets, three modelling scenarios have been considered when developing these forecasts.

Scenario 1 projects future renewal timing and costs using the acquisition year (or date of last renewal) and useful life from Council's asset register. This is an important aspect as it communicates what is being stated in Council's Financial Statements and should reflect the state of the assets and remaining service potential. Instances can occur where remaining lives can be under and/or over stated which can impact valuations and subsequent depreciation allocated to the Operating Statement.

Scenario 2 is aimed at sustaining existing assets over the long term at an agreed or desired service levels. The needs are based on technical knowledge and expertise from existing systems and officers. This is the best available measure of renewal need at the

present time and improvements are underway to increase the confidence in these forecasts.

Scenario 3 balances the operating, maintenance and capital renewal and upgrade/new expenditure projections identified in Scenario 2 with the available funds in the Long-term Financial Plan (LTFP) and highlights the likely service implications and risks. This latest version of the plan has the service level trade-offs included in the actual forecasts for the council.

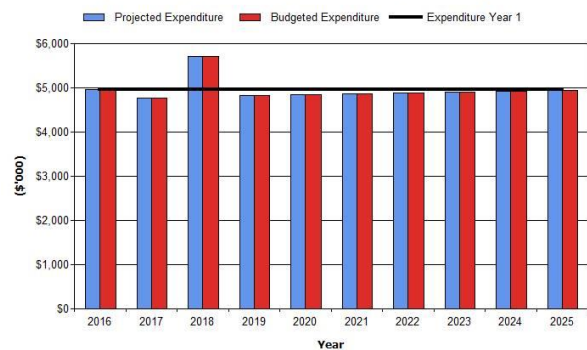
The difference between Scenario 2 and 3 represents "what we can't do". This enables a discussion about the 'gap' in service delivery and will lead to a more informed discussion about what are achievable and acceptable service levels, while giving a focus on managing risk. In time, with increased knowledge of the asset stock and future needs Council will be in a more effective position to communicate these risks to the community.

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 \$49.6M or \$4.96M on average per year.

Estimated available funding for this period is \$49.6M or \$4.96M on average per year, which is 100% of the cost to provide the service. 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.

Salisbury CC - Projected and Budget Expenditure for (.Drainage_AMP_(incGrowth)_S3_V4)



¹ <http://forecast2.id.com.au>

What we will do

We plan to provide Drainage & Waterway services for the following:

- Undertaking:
 - Watercourse risk assessment and monitoring;
 - Erosion control and de-siltation;
 - Enhancement of riverine and wetland flora diversity; and
 - Creation of habitat and movement corridors for vulnerable bird species..
- Specific replacement and improvement projects include:
 - Little Para Golf Course drainage including overflow and levee bank;
 - Montague Road pipe replacement; and
 - Priority actions in the Watercourse Management Plan within the 10 year planning period.
- We will assess remaining life of our assets and align with up to date condition profiles.
- Improve confidence in the forward renewal needs in the next revision of this plan.

Specific capital projects include:

- St Kilda Channel Renewal
- St Kilda Breakwaters Renewal

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:

- Reactive soils/clays covering approximately 17% of the network resulting in premature failure of constructed assets.
- Excessive siltation and high litter accumulation.
- Increased maintenance and servicing costs.

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

- Allocating increased maintenance funds where required.
- Ensure preventative maintenance schedules are maintained.
- Undertaking CCTV sampling of assets in reactive clay areas to understand the problem.

Confidence Levels

This AM Plan is based on High level of confidence information.

The Next Steps

The actions resulting from this asset management plan are:

- Implement a continuous improvement strategy to assess and report on the condition, function and capacity of council controlled assets.
- Determine and implement a rigorous assessment of the asset register ensuring it satisfies the accounting, valuation, insurance and operational requirements of the organisation.
- Develop and confirm current and desired levels of service in consultation with the community to understand sustainable levels of service.
- Ensure funding models are accurate and reflect resources required to meet the plan.
- Develop and implement a process to ensure the currency of the data in the asset register (Confirm) remains up to date.
- Undertake a comprehensive review of its strategic management plans within 2 years after each general election of the council. Review risk management plan detailed in 5.2.
- Assess remaining life of our assets and align with up to date condition data and knowledge, refer to figure 5.4.3.1.

Questions you may have

What is this plan about?

This asset management plan covers the infrastructure assets that serve the City of Salisbury community's Drainage & Waterways needs. These assets include open systems, pipes & pits and retention dams throughout the community area.

What is an Asset Management Plan?

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

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

2. INTRODUCTION

2.1 Background

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

The asset management plan follows the format for AM Plans recommended in Section 4.2.6 of the International Infrastructure Management Manual².

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

- City Plan
- Annual Plan
- Annual Report
- Community Land Management Plan

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

Table 2.1: Assets covered by this Plan

Asset category	Dimension	Replacement Value
Open Systems	163 items	\$11,185,464
Pits & Pipes	31,617 items	\$316,212,577
Retention Dams	57 items	\$62,777,579
TOTAL		\$390,175,620

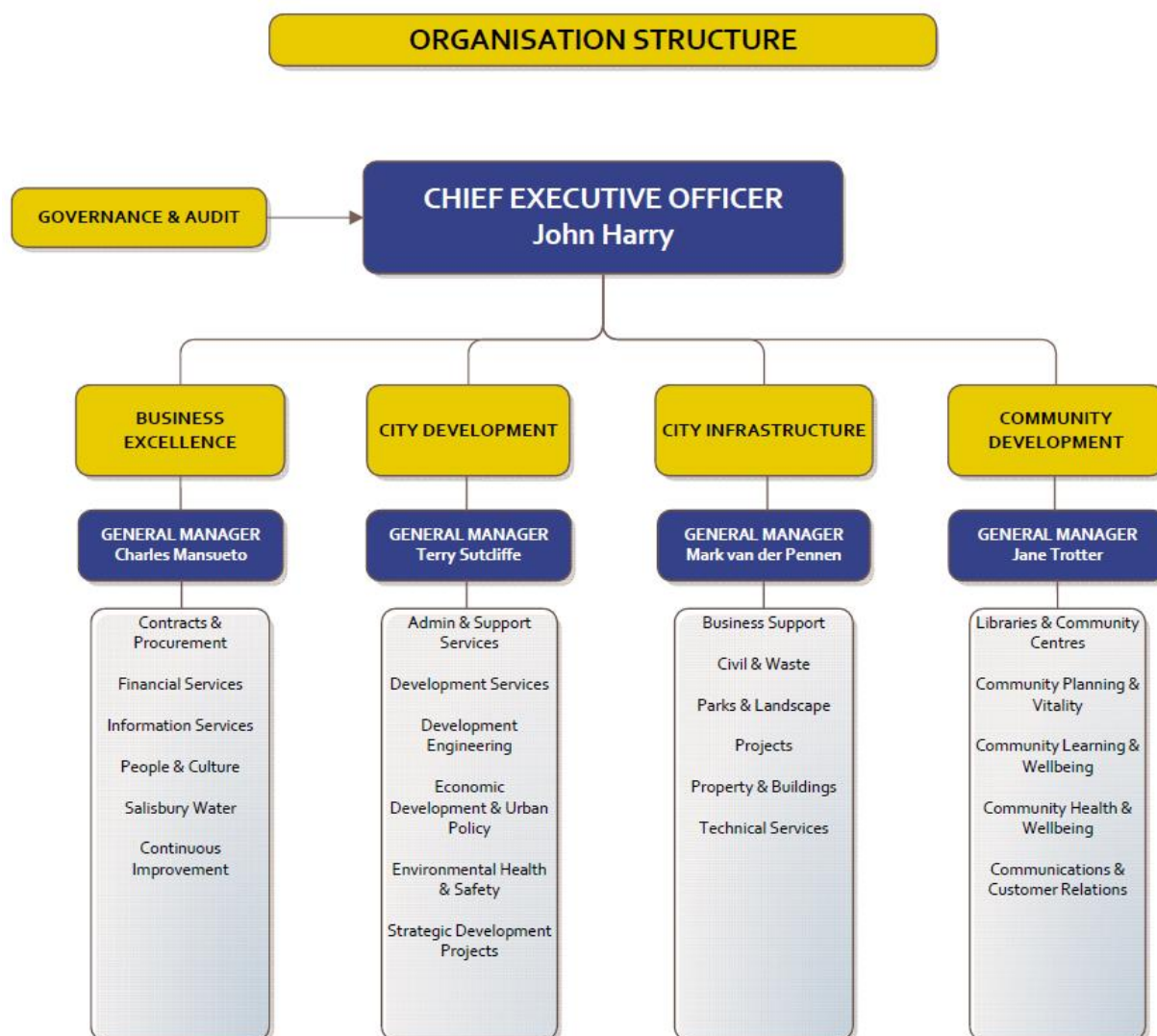
Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.1.1.

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 financially sustainable.
CEO/General Manager	Manage organisation operational activities and future planning strategic decision <ul style="list-style-type: none"> • Allocate resources to meet the organisation's objectives in providing services while managing risks, • Ensure organisation is financial sustainable.
Community & Ratepayers	End user of services
Finance Department	Long Term Financial Plans and operational financial data
City Infrastructure Department	Involved in the design, capital works, asset management, maintenance of assets.

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

² IPWEA, 2011, Sec 4.2.6, *Example of an Asset Management Plan Structure*, pp 4 | 24 – 27.



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.³

³ Based on IPWEA, 2011, IIMM, Sec 1.2 p 1|7.

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.

2.4 Core and Advanced Asset Management

This asset management plan is prepared as an ‘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 asset management plan will be made available for public review and feedback on the City of Salisbury web site once Council has formally approval this plan.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

We participate in the City of Salisbury Community Perceptions Local Government Customer Satisfaction survey. This telephone survey polls a sample of residents on their level of satisfaction with Council’s services. The most recent community satisfaction survey reported satisfaction levels for the following services

Table 3.1: Community Satisfaction Survey Levels

Performance Measure	Satisfaction Level				
	Very Satisfied	Fairly Satisfied	Satisfied	Somewhat satisfied	Not satisfied
Managing the local environment sustainably		√			
Streets, verges, footpaths & general cleanliness of streets			√		

The organisation uses this information in developing its Strategic Plan and in allocation of resources in the budget.

3.2 Strategic and Corporate Goals

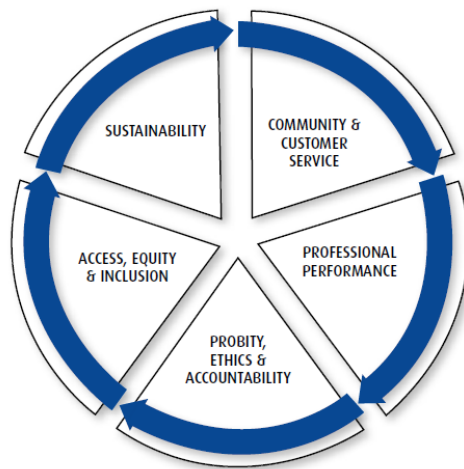
This asset management plan is prepared under the direction of the organisation’s vision, mission, goals and objectives.

Our vision is for

‘Excellence in building a community of opportunity and spirit in a quality environment’.⁴

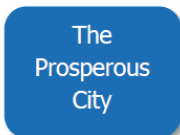
Our Values:

‘The City Plan articulates five core organisational values. These values are the principles we use to define what is critical to the City of Salisbury, both as a community and an organisation. They influence our behaviour and provide clear guidance on what is important for service delivery at both the strategic and operational level.’⁵



This is achieved via Salisbury’s City Plan – Sustainable Futures and the following four Key Directions:

Key Direction 1:



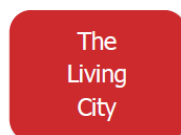
Supporting the future prosperity of our city

Key Direction 2:



Providing built and natural environments that are sustainable and resilient

Key Direction 3:



Encouraging and supporting a thriving and connected community

Key Direction 4:



Enhancing and sustaining organisational capacity

⁴ City of Salisbury Annual Plan 2014/15

⁵ Sustainable Futures 2013

Relevant organisational goals and objectives (Key Directions) and how these are addressed in this asset management plan are:

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

Key Direction	Objective	How Goal and Objectives are addressed in AM Plan
The Prosperous City	To deliver suitably integrated infrastructure that maximises economic efficiencies and opportunities for the community.	Prepare Stormwater Management Plans that form part of a larger integrated water catchment plan for the city to ensure that stormwater is managed in a coordinated manner across the city.
The Sustainable City	To have sustainable and resilient built environments that contributes to quality amenity.	To ensure the service levels within the asset management plan meet community expectations.
	To deliver sustainable water management and improve water security for the city.	Develop Stormwater Management Plans for the Para Escarpment, Little Para and Dry Creek Systems.
	To have sustainable and resilient built environments that contribute to quality amenity.	Review the use of ornamental/artificial lakes including consideration of ongoing management/maintenance strategies with a view to integrating with water course management strategies.
Achieving Excellence	To ensure informed and transparent decision-making that is accountable and legally compliant.	The creation of a public document to advise the community of council's progress in complying with legislation.
	To apply business and resource management that enables excellent service delivery and financial sustainability.	To prioritise works to deliver the outcomes of the asset management plan within budget provisions.
	To provide our customers with excellent service that meets their needs.	To ensure service levels are achievable and financially sustainable.

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.
Local Government Act-Annual Reporting Section 428(2)(d)	(d) A report of the condition of the public works, under the control of City of Salisbury as at the end of that year together with: (i) An estimate (at current values) of the amount of money required to bring the works up to a satisfactory standard: and (ii) An estimate (at current values) of the annual expense of maintain the works at that standard; and (iii) The City of Salisbury's programme for maintenance for that year in respect of the works.
Australian Accounting Standards	Set out the financial reporting standards relating to. Inter alia, the (re)valuation and depreciation of Assets.

Work Health & Safety Act 2012	To secure the health, safety and welfare of persons at work. To eliminate, at their source, risks to the health, safety and welfare of persons at work. To protect the public against risks to health or safety arising out of or in connection with the activities of persons at work, or the use of operation of various types of plant.
-------------------------------	--

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 Levels of Service

3.4.1 Community Service Levels

Community Service levels are defined service levels 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				
Safe and efficient diversion of stormwater away from urban areas				
COMMUNITY LEVELS OF SERVICE				
Quality	Low risk of localised flooding Minimise overflow through private property Not inconvenienced No property damage No environmental damage to receiving waters Reuse stormwater	Customer surveys Customer requests	To be provided from the Resident Survey Most of network satisfactory Current % poor/very poor: approx 2.5%	Requests received should not increase annually Level of service as agreed with community to manage budget allocations while maintaining an acceptable level of risk and service provision for Councils stormwater drainage assets.
	Organisational measure Confidence levels High			
Function	Water drained by stormwater system	Customer surveys	To be provided from the Resident Survey Current % poor/very poor: approx. 5%	Requests received should not increase annually Level of service as agreed with community to manage budget

				allocations while maintaining an acceptable level of risk and service provision for Councils stormwater drainage assets.
	Organisational measure Confidence levels Medium			
Capacity/ Utilisation	Stormwater network has adequate capacity	% of network that doesn't meet design capacity standards (is poor or very poor)	Has not been fully assessed at this time Current % poor/very poor: approx. 5%	Assessment required to inform future revisions of the Stormwater Asset Management Plan Level of service as agreed with community to manage budget allocations while maintaining an acceptable level of risk and service provision for stormwater drainage assets.
	Organisational measure Confidence levels Medium			
Safety	Free from condition related hazards.	Number of injury accidents (Accident History)	Should commence monitoring trend to determine if accidents are increasing	Accidents attributable to infrastructure condition should be reduced annually

3.4.2 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 opening hours, cleansing, mowing grass, energy, inspections, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (eg road patching, unsealed road grading, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (eg frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),
- Upgrade – the activities to provide a higher level of service (eg widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (eg a new library).

Service and asset managers plan, implement and control technical service levels to influence the customer service levels.⁶

Table 3.5 shows the technical level of service expected to be provided under this AM Plan.

⁶ 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	Cleaned regularly to reduce the risk of blockages	Frequency	Reactive to limit of budget allocation.	Programme of operational works to be assessed and costed	
		Budget	\$281,000		
Maintenance	Urgent repairs undertaken	Respond to complaints	Reactive maintenance to limit of budget allocation.	CCTV Inspections Reactive Maintenance	
		Budget	\$2,162,000		
Renewal	Renewal of assets	Replacement Cycle	Renewal of stormwater assets is to be monitored. Proactive replacement will commence once more information is available	Currently Council targets to replace stormwater systems in reactive soils where appropriate. Network in relatively good condition. Increasing renewal required in medium to longer term, due to the age of the network.	
		Budget	\$2,339,000 in Y1 \$1,955,000 in Y2 \$1,317,000 in Y3 \$717,000 each year after		
Upgrade/New	Provide services in a cost effective manner	Cost, Meet Corporate Strategy	Achieved by a combination of Council and Contract works	Achieved by a combination of Council and Contract works. The augmentation of stormwater systems to meet appropriate service and risk outcomes should be developed and included in the next update of the Stormwater Asset Management Plan	
		Budget	\$2,181,000 in Y1 \$1,590,000 in Y2 \$903,000 in Y3 \$1,103,000 each year after		

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	136,000	The population is forecast to grow from 136,000 to 146,000 by 2031.	Increased Assets and demand on existing assets will have a follow on impact on maintenance and renewal costs.
Climate Change		Potential for decrease in rainfall and increase in temperature.	Negligible impact is forecast
Increasing Costs	The cost to construct, maintain and renew infrastructure is increasing at a rate greater than council's revenue	Anticipated to continue	Increasingly difficult to maintaining the current level of service
Drainage Construction Costs	Current costs	Costs anticipated to increase	The shortage of skilled labour, high labour costs and increasing material costs, and availability of quality construction materials will impact on the future management of drainage.

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 failures⁷. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

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

Table 4.4: Demand Management Plan Summary

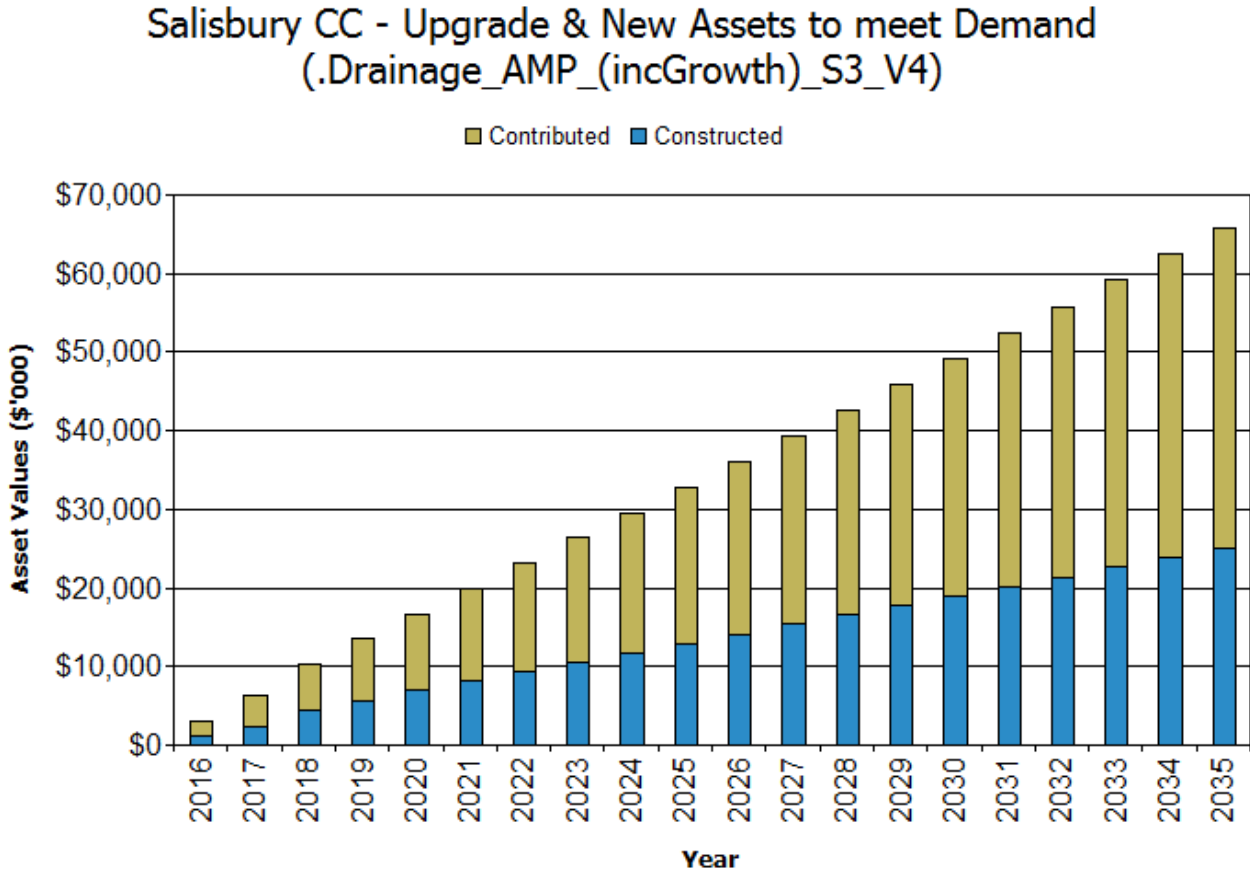
Demand Driver	Impact on Services	Demand Management Plan
Climate Change	Minimal	None
Population Increase	Minimal	None

⁷ IPWEA, 2011, IIMM, Table 3.4.1, p 3|58.

4.5 Asset Programs to meet Demand

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

Figure 1: Upgrade and New Assets to meet Demand



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.

The constructed value shown as blue in the above chart represents new assets that to be constructed from Council Upgrade/New Projects outlined in Appendix A. The contributed value shown as yellow in the above chart represents new assets from growth estimated as a 0.05% annual increase of the total Transportation asset value.

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

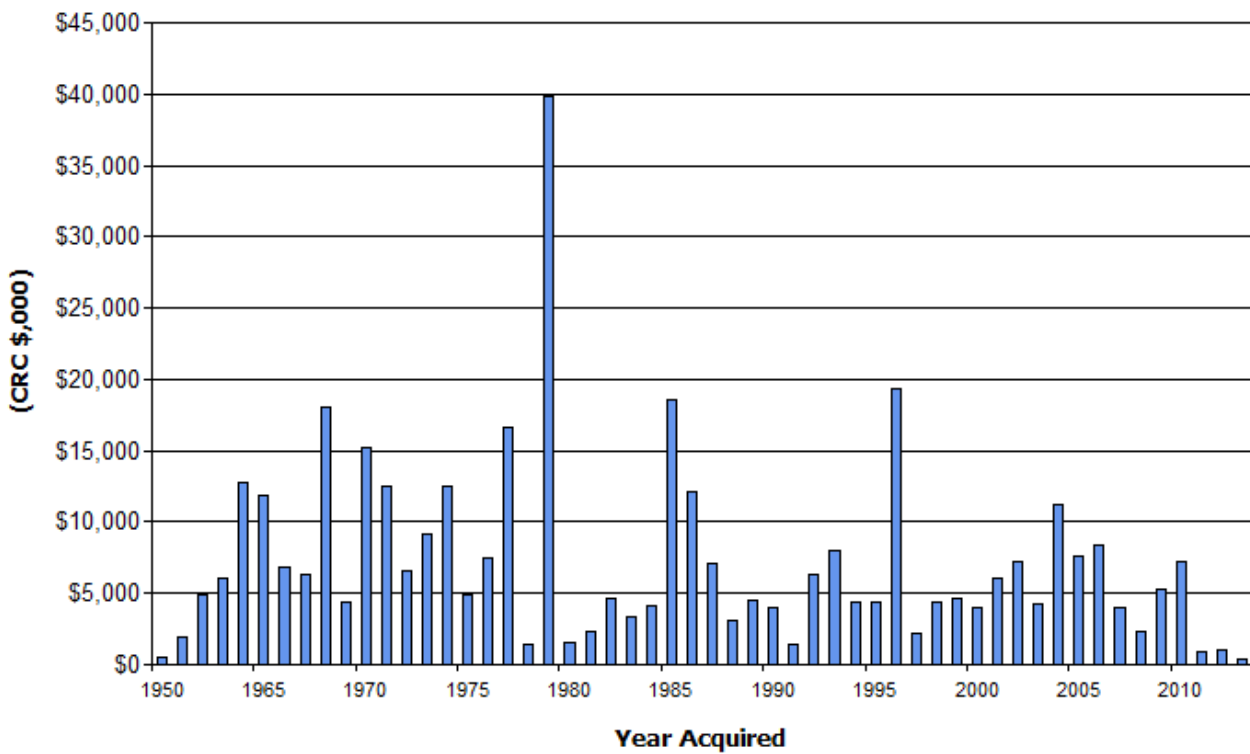
5.1.1 Physical parameters

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

The Drainage & Waterway asset category comprises a complex mix of asset types, age, function and condition.

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

Figure 2: Asset Age Profile



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
Open Systems	To be determined.
Pipes & Pits	To be determined.
Retention Dams	To be determined.

The above service deficiencies were identified from customer requests, programed safety and asset inspections.

5.1.3 Asset condition

Condition is monitored on an ad-hoc basis and data collection and storage processes require review so it is made available in the ‘Confirm’ asset management system.

Condition profile information is not currently available. A condition profile will be developed in future revisions of the asset management plan.

5.1.4 Asset valuations

The value of assets recorded in the asset register as at 30 June 2014 covered by this asset management plan is shown below. Assets were last revalued at 30 June 2014. Assets were last revalued at 30 June 2014.

Current Replacement Cost	\$388,823,094
Depreciable Amount	\$388,823,094
Depreciated Replacement Cost ⁸	\$262,916,740
Annual Depreciation Expense	\$4,151,080

Useful lives were reviewed in June 2014.

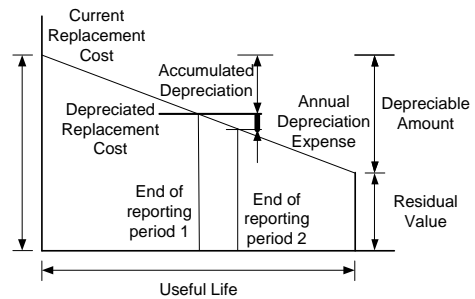
Key assumptions made in preparing the valuations were:

- Historical maintenance trends
- Industry useful lives and residuals are applied
- There will be no material changes in regulation

Major changes from previous valuations are due to changes in residual value.

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)	1.10%
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.30%



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

In 2015 the organisation plans to renew Drainage assets at 32.2% of the rate they are being consumed and will be increasing its Drainage asset stock by 0.8% in the year.

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.

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
Stormwater Pipes	General deterioration of the network resulting in structural and capacity failures	High	CCTV program to be initiated to validate current assumptions regarding asset lives. The initial area of study will be assets in reactive soils	Medium	\$95,000pa

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

5.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety and amenity.

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 e.g. through pipe cleaning.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Maintenance 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 open drain maintenance, silt removal etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

⁹ City of Salisbury Infrastructure Risk Management Plan

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,
- Review current and required skills base and implement workforce training and development to meet required operations and maintenance needs,
- Review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options,
- Maintain a current hierarchy of critical assets and required operations and maintenance activities,
- Develop and regularly review appropriate emergency response capability,
- Review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

Asset hierarchy

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

The organisation’s service hierarchy is shown in Table 5.3.2.

Table 5.3.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Open Systems	The stormwater network controls minor issues related to flooding, provide access, protect persons and property and improve safety.
Pipes	
Pits	
Retention Dams	

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 maintenance 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
To be developed		

Standards and specifications

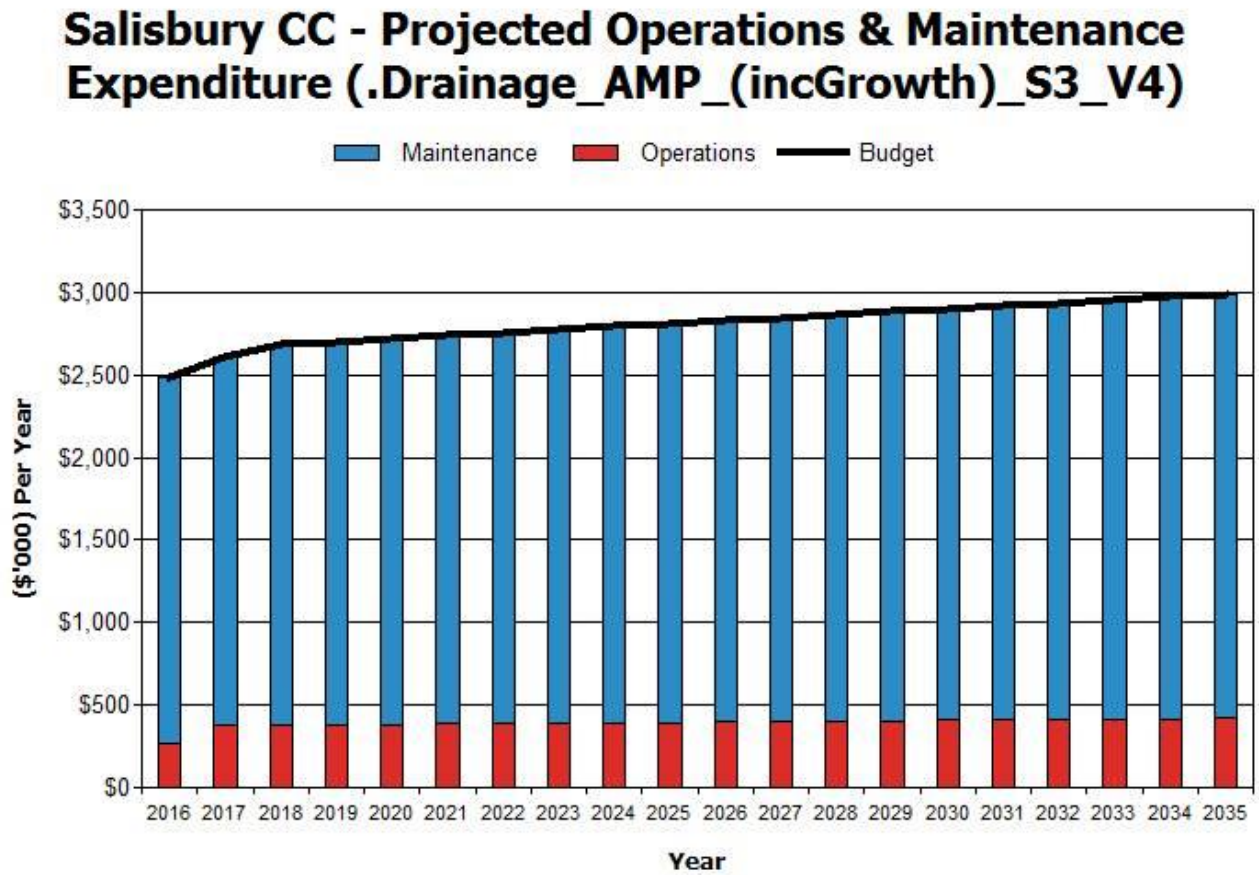
Maintenance work is carried out in accordance with the following Standards and Specifications.

- Council's standard specifications.

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2015 dollar values (i.e. real values).

Figure 4: Projected Operations and Maintenance Expenditure



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

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

5.4 Renewal/Replacement Plan

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

5.4.1 Renewal plan

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

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

Method 2 was used for this asset management plan.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed on 30 June 2014.

Table 5.4.1: Useful Lives of Assets

Asset (Sub)Category	Useful life
Open Systems	25 - 100 years
Pipes & Pits	10 – 100 years
Retention Dams	80 – 200 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,
- 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,
- Review current and required skills base and implement workforce training and development to meet required construction and renewal needs,
- Maintain a current hierarchy of critical assets and capital renewal treatments and timings required ,
- Review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

Renewal ranking criteria

Asset renewal and replacement is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (eg replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (eg roughness of a road).¹⁰

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.¹¹

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

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

Criteria	Weighting
Community - Function	TBD
Community – Quality	TBD
Technical – Condition	TBD
Technical – Risk of Failure	TBD
Technical – Operating/Maintenance and lifecycle costs	TBD
Total	100%

Renewal and replacement standards

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

- Replacement program
- Asset Management Plan
- Industry recognised standards

5.4.3 Summary of future renewal and replacement expenditure

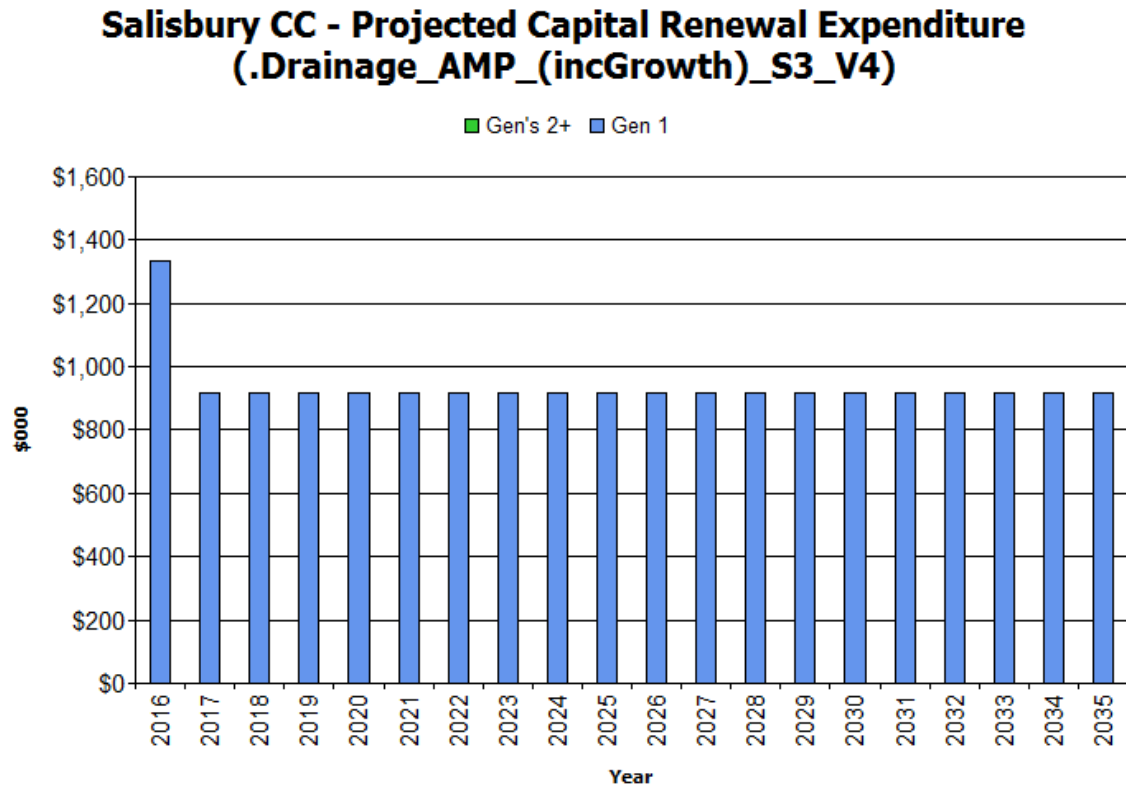
Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5. Note that all amounts are shown in real values.

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

¹⁰ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

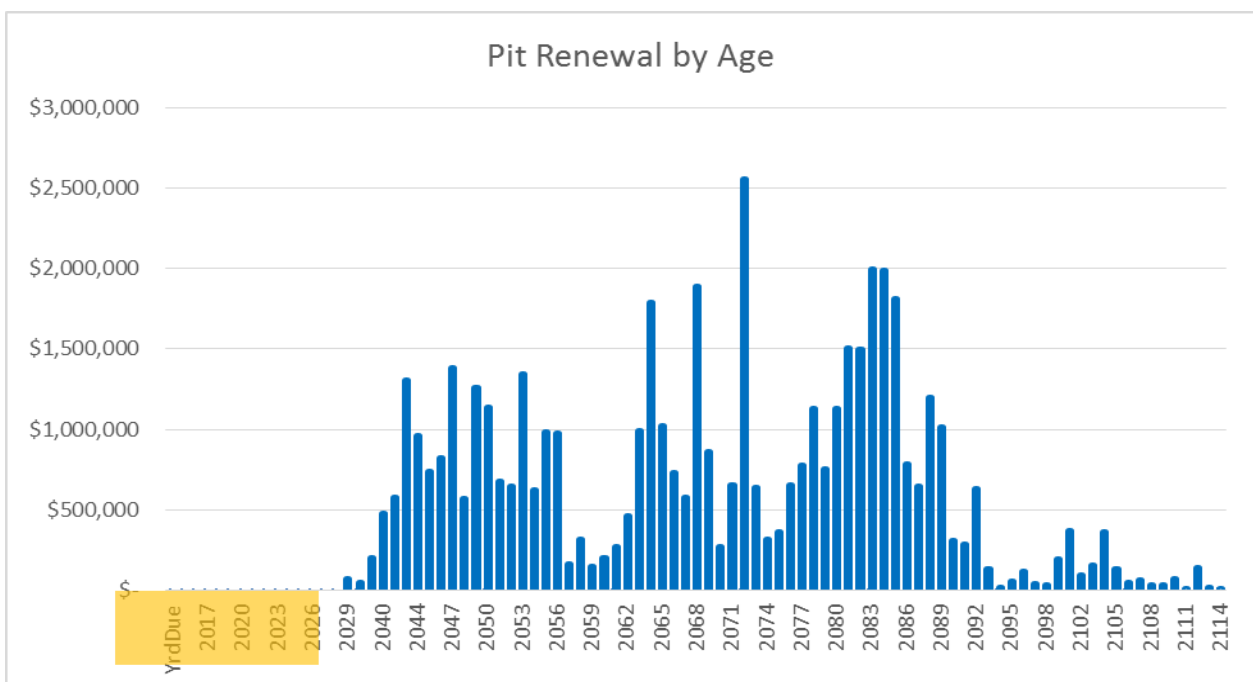
¹¹ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

Fig 5.1: Projected Capital Renewal and Replacement Expenditure



The long term 100 year projected capital renewal replacement expenditure shown in Figure 5.2 below illustrates that while there is very little expenditure required in the next 20 years, there is significant renewal required in the longer term.

Fig 5.2: 100 year 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 6.2.

5.5 Creation/Acquisition/Upgrade Plan

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

5.5.1 Selection criteria

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

Table 5.5.1: New Assets Priority Ranking Criteria

Criteria	Weighting
Local Flooding	TBD
Potential for Stormwater quality improvement Benefit Cost	TBD
Potential for Stormwater storage and reuse benefit cost	TBD
Total	100%

5.5.2 Capital Investment Strategies

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

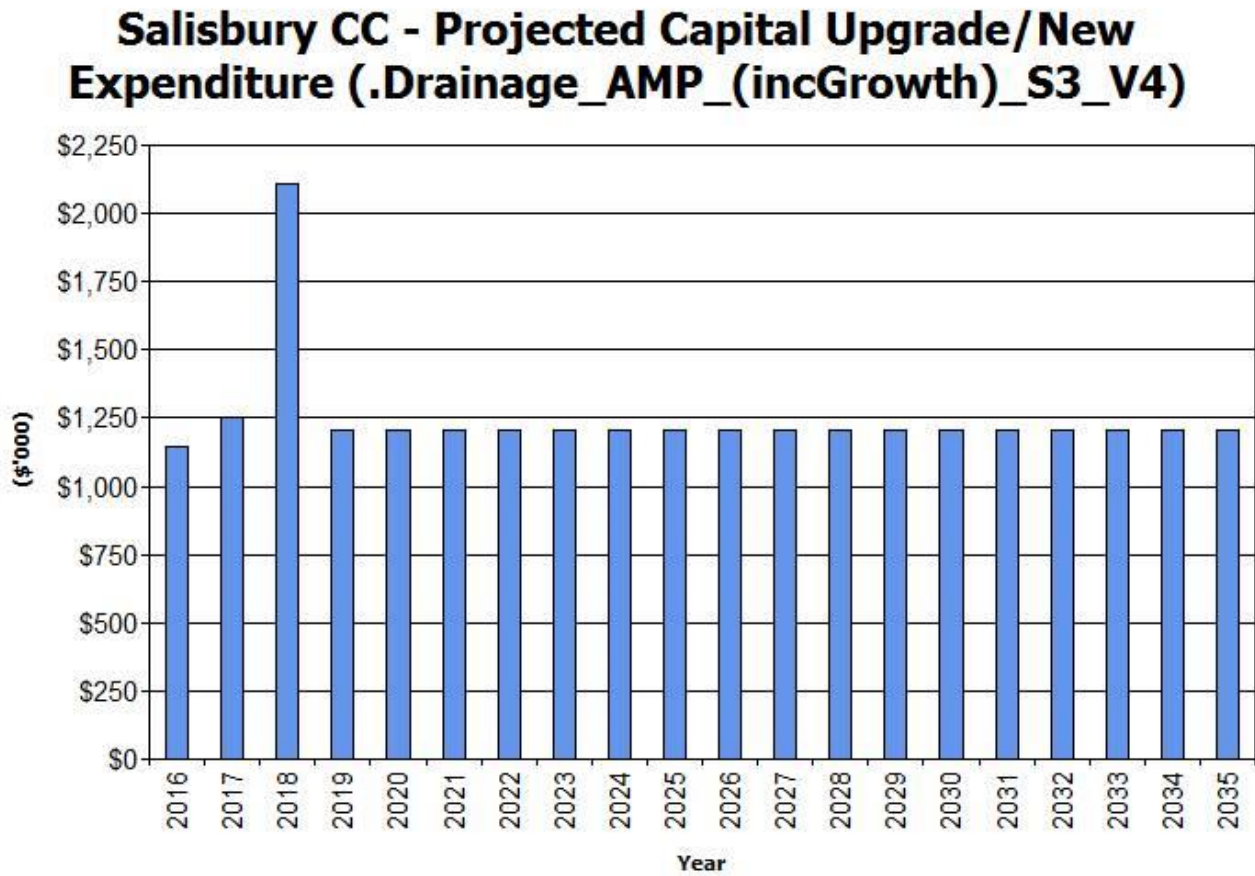
- Planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner,
- Undertake project scoping for all capital upgrade/new projects to identify:
 - the service delivery ‘deficiency’, present risk and required timeline for delivery of the upgrade/new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

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

5.5.3 Summary of future upgrade/new assets expenditure

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

Fig 6: Projected Capital Upgrade/New Asset Expenditure (Scenario 3)



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.

Given the relatively small gap between scenario’s 2 & 3, the need to reduce expenditure on Upgrade and New is not required. Instead a reduction in low confidence capital budget forecasts for pro-active Pipe and Pit renewal has been withdrawn from the program.

5.6 Disposal Plan

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

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

Table 5.6: Assets Identified for Disposal

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

No assets are identified for removal				
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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

Council can continue to maintain current levels of service in the short to medium term.

5.7.2 Service consequences

If current budgets are maintained then there will be little discernible impact upon the community.

5.7.3 Risk consequences

The major risks of this area stem from the significant quantity of long life subterranean assets that are due for renewal at some point in the future. When this renewal is due is currently not known and the current condition of the network needs to be assessed in order to begin pro-active replacement if necessary.

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

6. FINANCIAL SUMMARY

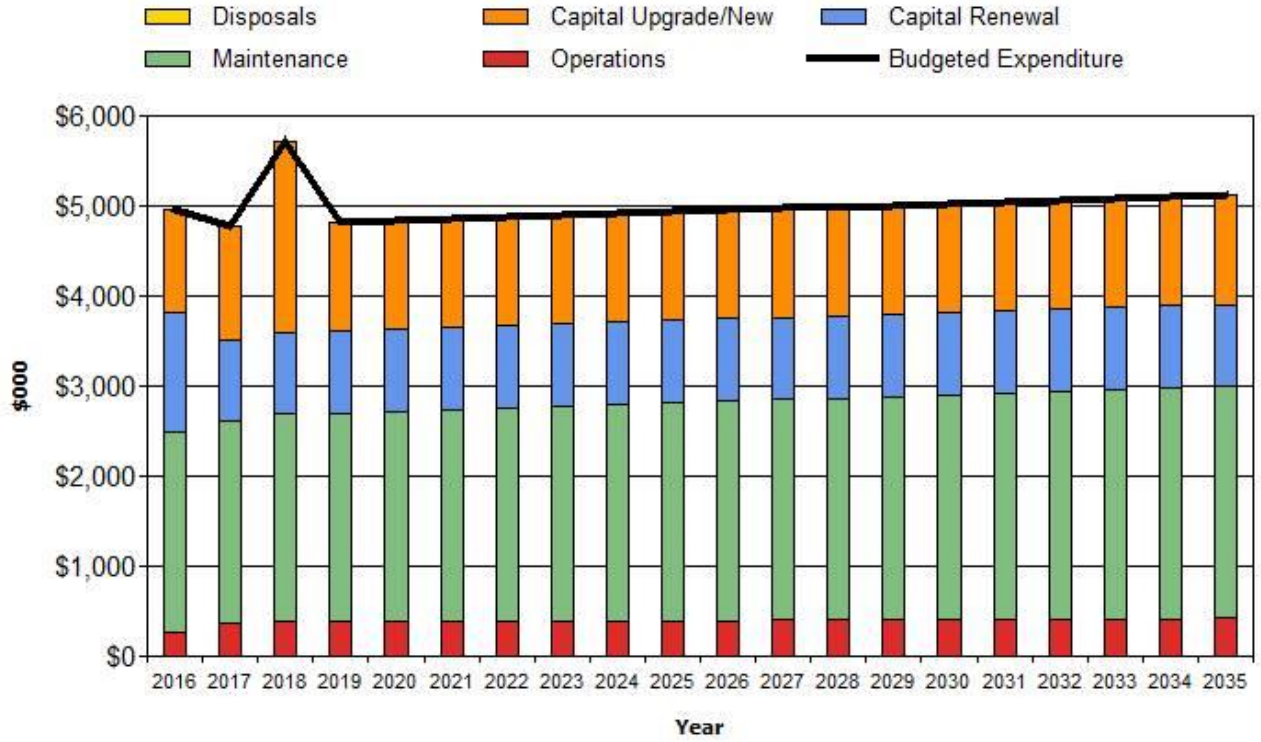
This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset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

6.1 Financial Statements and Projections

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

Fig 7: Projected Operating and Capital Expenditure

Salisbury CC - Projected Operating and Capital Expenditure (.Drainage_AMP_(incGrowth)_S3_V4)



6.1.1 Sustainability of service delivery

There are four key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, these being the asset renewal funding ratio, long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Asset Renewal Funding Ratio (S3)

Asset Renewal Funding Ratio ¹²	100.0%
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The Asset Renewal Funding Ratio is the most important indicator and reveals that over the next 10 years, Council is forecasting that it will have 100.0% of the funds required for the optimal renewal and replacement of its assets.

Long term - Life Cycle Cost (S3)

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is \$6.86M per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure over the 10 year planning period is \$3.7M per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by this asset management plan is -\$3.19M per year (-ve = gap, +ve = surplus).

Life cycle expenditure is 54.0% of life cycle costs.

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

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

Medium term – 10 year financial planning period

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

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

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is \$3.66M on average per year.

¹² AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16

Estimated (budget) operations, maintenance and capital renewal funding is \$3.66M on average per year giving a 10 year funding shortfall of \$0.00 per year. This indicates that Council expects to have 100.0% of the projected expenditures needed to provide the services documented in the asset management plan.

Medium Term – 5 year financial planning period (S3)

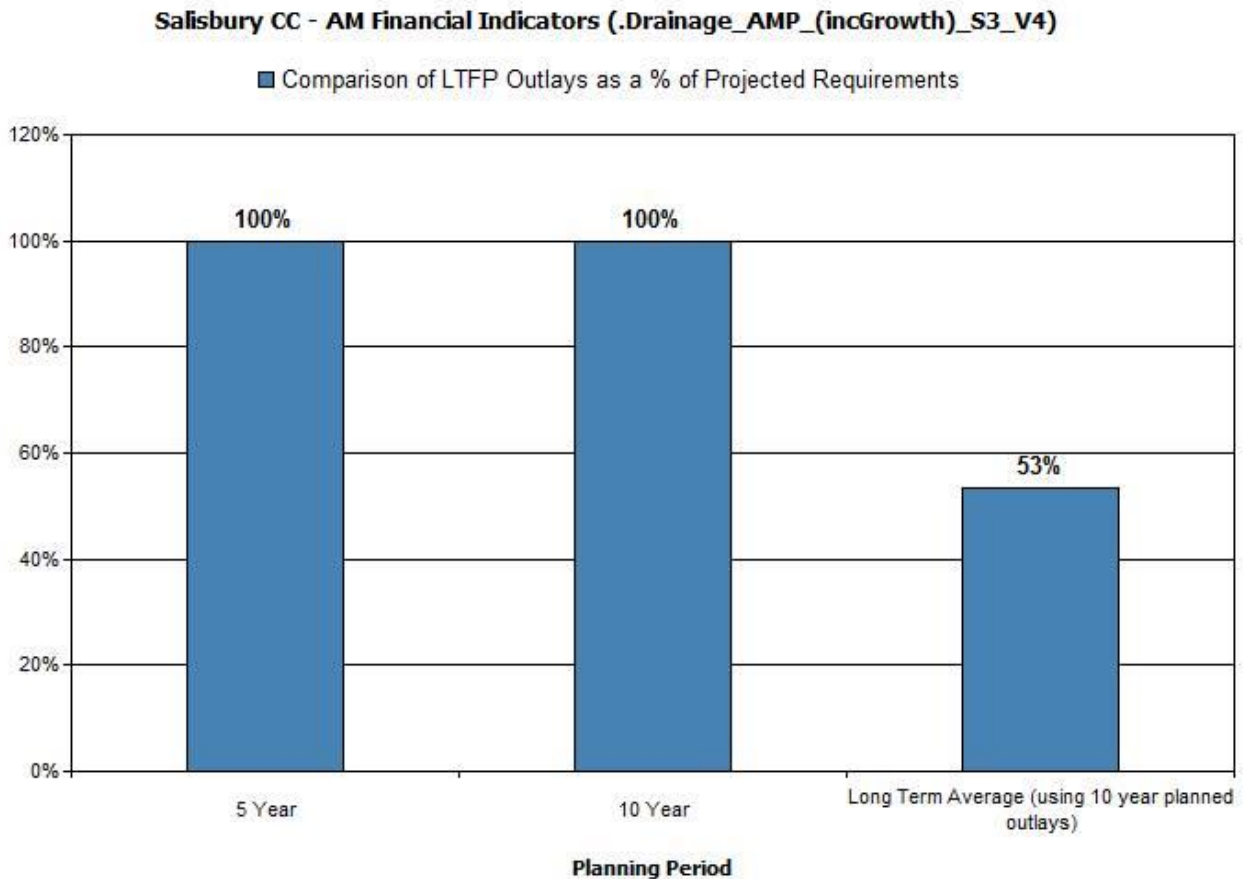
The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is \$3.64M on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is \$3.64M on average per year giving a 5 year funding surplus of -\$0.00. This indicates that Council expects to have 100.0% of projected expenditures required to provide the services shown in this asset management plan.

Asset management financial indicators

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

Figure 7A: Asset Management Financial Indicators



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

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

Figure 8: Projected and LTFP Budgeted Renewal Expenditure

Salisbury CC - Projected & LTFP Budgeted Renewal Expenditure (.Drainage_AMP_(incGrowth)_S3_V4)

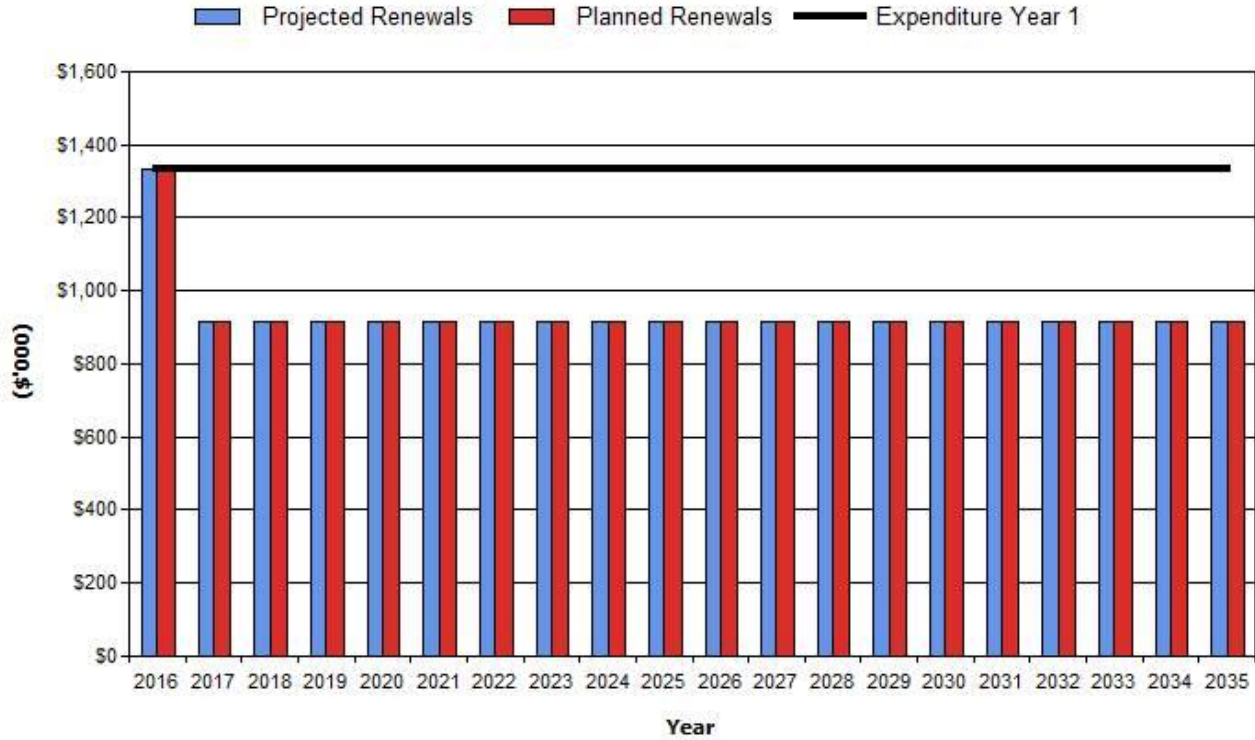


Table 6.1.1 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in long term financial plan. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets are shown in Appendix C.

Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected Renewals (\$000)	LTFP Renewal Budget (\$000)	Renewal Financing Shortfall (\$000) (-ve Gap, +ve Surplus)	Cumulative Shortfall (\$000) (-ve Gap, +ve Surplus)
2016	\$1,335	\$1,335	\$0	\$0
2017	\$917	\$917	\$0	\$0
2018	\$917	\$917	\$0	\$0
2019	\$917	\$917	\$0	\$0
2020	\$917	\$917	\$0	\$0
2021	\$917	\$917	\$0	\$0
2022	\$917	\$917	\$0	\$0
2023	\$917	\$917	\$0	\$0
2024	\$917	\$917	\$0	\$0
2025	\$917	\$917	\$0	\$0
2026	\$917	\$917	\$0	\$0
2027	\$917	\$917	\$0	\$0
2028	\$917	\$917	\$0	\$0
2029	\$917	\$917	\$0	\$0

2030	\$917	\$917	\$0	\$0
2031	\$917	\$917	\$0	\$0
2032	\$917	\$917	\$0	\$0
2033	\$917	\$917	\$0	\$0
2034	\$917	\$917	\$0	\$0
2035	\$917	\$917	\$0	\$0

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

Providing services in a sustainable manner will require matching of projected asset renewal and replacement expenditure to meet agreed service levels with **the corresponding** capital works program accommodated in the long term financial plan.

We will manage the ‘gap’ by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community.

6.1.2 Projected expenditures for long term financial plan

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

Expenditure projections are in 2015 real values.

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

Year	Operations (\$000)	Maintenance (\$000)	Projected Capital Renewal (\$000)	Capital Upgrade/ New (\$000)	Disposals (\$000)
2016	\$271.59	\$2,212.42	\$1,335.00	\$1,148.00	\$0.00
2017	\$374.14	\$2,228.87	\$917.00	\$1,253.00	\$0.00
2018	\$378.44	\$2,306.57	\$917.00	\$2,106.00	\$0.00
2019	\$380.86	\$2,322.15	\$917.00	\$1,206.00	\$0.00
2020	\$383.28	\$2,337.73	\$917.00	\$1,206.00	\$0.00
2021	\$385.70	\$2,353.31	\$917.00	\$1,206.00	\$0.00
2022	\$388.11	\$2,368.90	\$917.00	\$1,206.00	\$0.00
2023	\$390.53	\$2,384.48	\$917.00	\$1,206.00	\$0.00
2024	\$392.95	\$2,400.06	\$917.00	\$1,206.00	\$0.00
2025	\$395.37	\$2,415.64	\$917.00	\$1,206.00	\$0.00
2026	\$397.78	\$2,431.23	\$917.00	\$1,206.00	\$0.00
2027	\$400.20	\$2,446.81	\$917.00	\$1,206.00	\$0.00
2028	\$402.62	\$2,462.39	\$917.00	\$1,206.00	\$0.00
2029	\$405.04	\$2,477.97	\$917.00	\$1,206.00	\$0.00
2030	\$407.46	\$2,493.55	\$917.00	\$1,206.00	\$0.00
2031	\$409.87	\$2,509.14	\$917.00	\$1,206.00	\$0.00
2032	\$412.29	\$2,524.72	\$917.00	\$1,206.00	\$0.00
2033	\$414.71	\$2,540.30	\$917.00	\$1,206.00	\$0.00
2034	\$417.13	\$2,555.88	\$917.00	\$1,206.00	\$0.00
2035	\$419.55	\$2,571.46	\$917.00	\$1,206.00	\$0.00

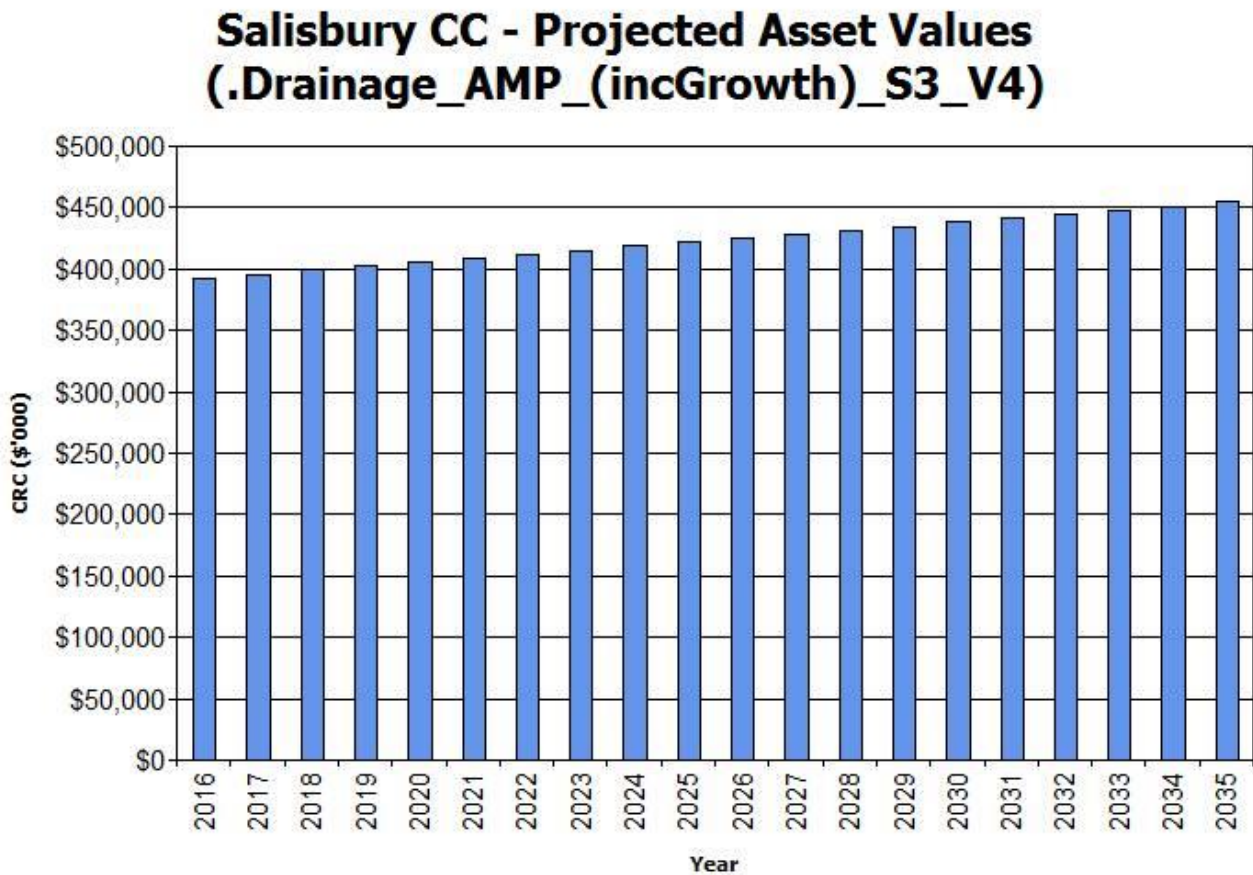
6.2 Funding Strategy

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

6.3 Valuation Forecasts

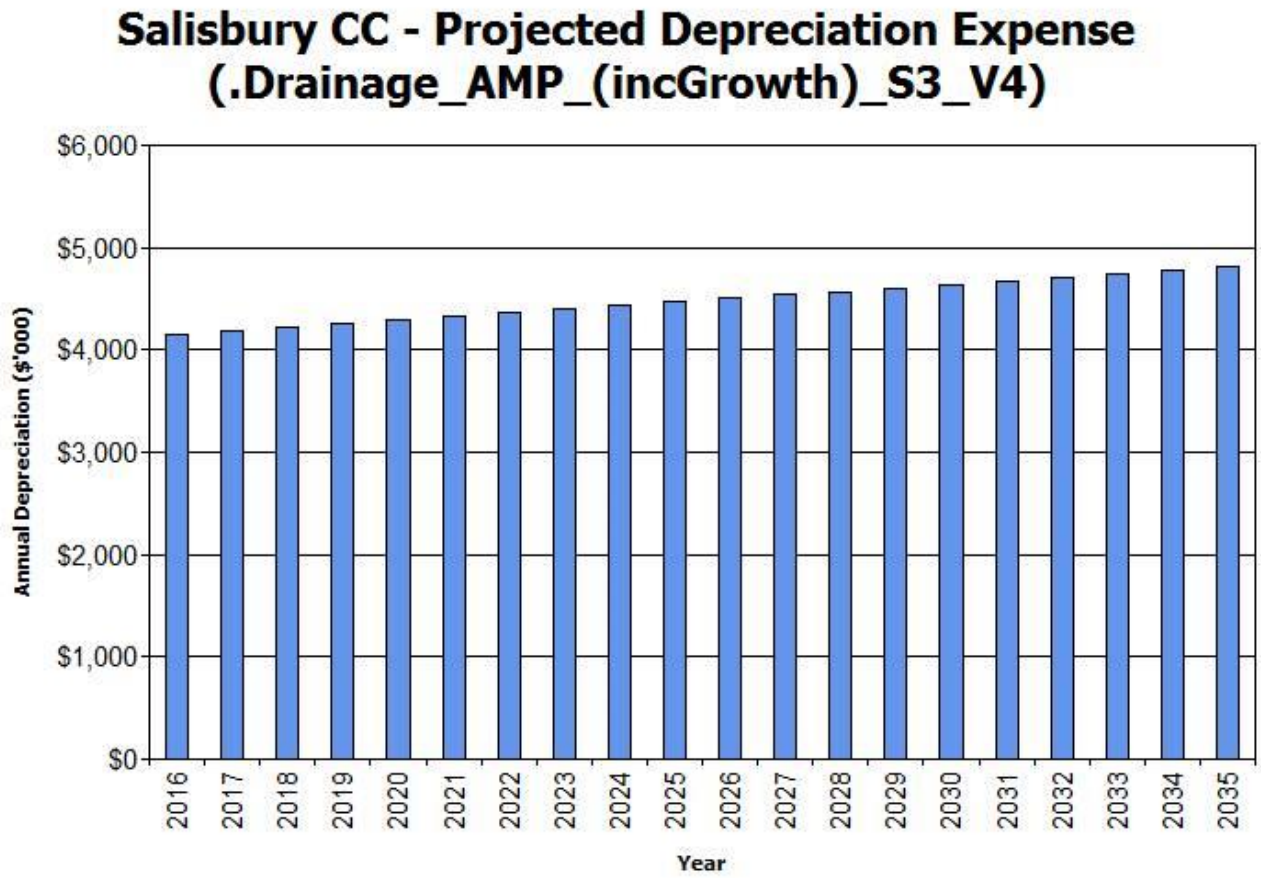
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Figure 9 shows the projected replacement cost asset values over the planning period in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

Figure 9: Projected Asset Values



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

Figure 10: Projected Depreciation Expense



The depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 11. The depreciated replacement cost of contributed and new assets is shown in the darker colour and in the lighter colour for existing assets.

Figure 11: Projected Depreciated Replacement Cost

Salisbury CC - Projected Depreciated Replacement Cost (.Drainage_AMP_(incGrowth)_S3_V4)



6.4 Key Assumptions made in Financial Forecasts

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

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

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

Key Assumptions	Risks of Change to Assumptions
That current asset lives are 'at least' long enough.	Lives will most likely be extended once condition information is available

6.5 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 scale¹³ 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 Reliable	Based on current expert judgement and supporting data
Growth projections	B Reliable	Based on current expert judgement and supporting data
Operations expenditures	B Reliable	Based on current expert judgement and supporting data
Maintenance expenditures	B Reliable	Based on current expert judgement and supporting data
Projected Renewal exps. - Asset values	B Reliable	Based on current expert judgement and supporting data
- Asset residual values	B Reliable	Based on asset register.
- Asset useful lives	C Uncertain	Revaluation completed pending implementation
- Condition modelling	E Unknown	None or very little data held.
- Network renewals	C Reliable	Based on current expert judgement and supporting data
- Defect repairs	C Reliable	Based on unconfirmed verbal reports and/or cursory inspections and analysis
Upgrade/New expenditures	B Reliable	Based on current expert judgement and supporting data
Disposal expenditures	B Reliable	Based on current expert judgement and supporting data

Over all data sources the data confidence is assessed as medium confidence level for data used in the preparation of this AM Plan.

¹³ IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Council uses 'Finance One' as its corporate financial system which is administered through the Finance Department. No changes are proposed to accounting / financial systems as part of this AMP.

Accountabilities for financial systems

The General Manager Business Excellence is responsible for all financial systems within the City of Salisbury. They have a team of staff to assist in the process that is also subject to internal and external audits.

Accounting standards and regulations

Guidance in recognising and reporting on assets is provided by Australian Accounting Standards

Capital/maintenance threshold

Council's capital threshold is \$20,000 for drains, culverts and reticulation extensions and \$5,000 for sidelines and household connections. Costs under this will not be capitalised unless they are part of a project which has expenditure exceeding the capitalisation figure.

7.1.2 Asset management system

The City of Salisbury uses 'Confirm' as its Asset Management System.

Linkage from asset management to financial system

Confirm is linked to 'Finance One,' Councils corporate finance system via a manual batch process.

Accountabilities for asset management system and data maintenance

Confirm is administered through the City Infrastructure Departments Business Support division and has a full time coordinator responsible for its implementation. Data entry on a job by job (maintenance) basis is handled via several staff within Councils Business Support division.

Required changes to asset management system arising from this AM Plan

It is suggested that it would be appropriate to review the use of the Asset Management System processes for Capital Works as well as maintenance works for which the system is currently predominantly deployed. This will enable capture of as constructed capital renewal works at the time of renewal.

7.2 Improvement Plan

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

Table 7.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	CCTV rating of all pipes in reactive soils	Assets	\$95Kpa	10 Years
2	Incorporation of condition data into corporate register	Assets		
3	Undertake Dam Audit	Assets		
4				
5				
6				
7				
8				
9				
10				

7.3 Monitoring and Review Procedures

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

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

The AM Plan has a life of 4 years (Council election cycle) and is due for complete revision and updating on an annual basis to align with the budget process and review of the Long Term Financial Plan.

7.4 Performance Measures

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

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

8. REFERENCES

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

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

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

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

City of Salisbury, 'Salisbury City Plan 2020',

City of Salisbury, '2014/15 Annual Plan and Budget'.

City of Salisbury, 'Watercourse Management Plan'

9. APPENDICES

Appendix A Projected 10 year Capital Renewal and Replacement Works Program

Appendix B Projected 10 year Capital Upgrade/New Works Program

Appendix C LTFP Budgeted Expenditures Accommodated in AM Plan

Appendix D Infrastructure Risk Management Plan

Appendix E Abbreviations

Appendix F Glossary

Appendix A Projected 10 year Capital Renewal and Replacement Works Program

Year	Drainage & Waterways Renewal Projects	Estimate (\$'000)
2016	Watercourse Management Plan	\$675
2016	Drainage & Waterways Program Area - Planning Program	\$60
2016	St Kilda Channel Bank Renewal	\$400
2016	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$1,335
2017	Watercourse Management Plan	\$675
2017	Drainage & Waterways Program Area - Planning Program	\$42
2017	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2018	Watercourse Management Plan	\$675
2018	Drainage & Waterways Program Area - Planning Program	\$42
2018	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2019	Watercourse Management Plan	\$675
2019	Drainage & Waterways Program Area - Planning Program	\$42
2019	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2020	Watercourse Management Plan	\$675
2020	Drainage & Waterways Program Area - Planning Program	\$42
2020	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2021	Watercourse Management Plan	\$675
2021	Drainage & Waterways Program Area - Planning Program	\$42
2021	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2022	Watercourse Management Plan	\$675
2022	Drainage & Waterways Program Area - Planning Program	\$42
2022	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2023	Watercourse Management Plan	\$675
2023	Drainage & Waterways Program Area - Planning Program	\$42
2023	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2024	Watercourse Management Plan	\$675
2024	Drainage & Waterways Program Area - Planning Program	\$42
2024	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917
2025	Watercourse Management Plan	\$675
2025	Drainage & Waterways Program Area - Planning Program	\$42
2025	St Kilda Breakwaters - Renewal	\$200
TOTAL		\$917

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

Year	Drainage & Waterways Upgrade/New Projects	Estimate (\$'000)
2016	Local Flooding Program	\$448
2016	St Kilda Seawall - Extension	\$100
2016	Little Para River Overflow Channel	\$20
2016	Major Flood Mitigation Projects	\$545
2016	Maintenance Tracks - Nelson Road Dams Adjacent Parkston Court	\$35
	TOTAL	\$1,148
2017	Local Flooding Program	\$193
2017	Little Para River Overflow Channel	\$20
2017	Major Flood Mitigation Projects	\$1,040
	TOTAL	\$1,253
2018	Local Flooding Program	\$106
2018	Little Para River Overflow Channel	\$1,000
2018	Major Flood Mitigation Projects	\$1,000
	TOTAL	\$2,106
2019	Local Flooding Program	\$106
2019	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206
2020	Local Flooding Program	\$106
2020	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206
2021	Local Flooding Program	\$106
2021	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206
2022	Local Flooding Program	\$106
2022	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206
2023	Local Flooding Program	\$106
2023	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206
2024	Local Flooding Program	\$106
2024	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206
2025	Local Flooding Program	\$106
2025	Major Flood Mitigation Projects	\$1,100
	TOTAL	\$1,206

Appendix C Budgeted Expenditures Accommodated in LTFP

.Drainage_AMP_(incGrowth)_S3_V4 Form 3 Data

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Asset Values (\$000)	
CRC	388,823
Depreciable Amt	388,823
DRC	262,917
Annual Depreciation	4,151

Operations and Maintenance Costs from New Assets	
Additional Ops	0 %
Additional Maint	0 %
Additional Depreciation	1.07 %
Renewal Ratio	0.34 %

[Edit Growth Details](#)

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Financial Year ending 30 June	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Operations Budget	269	269	269	269	269	269	269	269	269	269
Management Budget	0	100	100	100	100	100	100	100	100	100
AM Systems Budget	2	5	9	12	14	16	19	21	24	26
TOTAL OPERATIONS	272	374	378	381	383	386	388	391	393	395
Maintenance										
Reactive Maintenance Budget	2,197	2,197	2,197	2,197	2,197	2,197	2,197	2,197	2,197	2,197
Planned Maintenance Budget	0	0	50	50	50	50	50	50	50	50
Specific Maintenance Items Budget	15	32	59	75	90	106	122	137	153	168
TOTAL MAINTENANCE	\$ 2,212	\$ 2,229	\$ 2,307	\$ 2,322	\$ 2,338	\$ 2,353	\$ 2,369	\$ 2,384	\$ 2,400	\$ 2,416
Capital										
Planned Renewal Budget	1,335	917	917	917	917	917	917	917	917	917
Planned Upgrade/New Budget	1,148	1,253	2,106	1,206	1,206	1,206	1,206	1,206	1,206	1,206
Non-growth contributed asset value	0	0	0	0	0	0	0	0	0	0
Asset Disposals										
Est. cost to dispose of assets	0	0	0	0	0	0	0	0	0	0
Carrying value (DRC) of disposed assets	0	0	0	0	0	0	0	0	0	0
Additional Expenditure Outlays Requirements (e.g from Infrastructure Risk Management Plan)										
Additional Expenditure Outlays required and not included above	2016 \$000	2017 \$000	2018 \$000	2019 \$000	2020 \$000	2021 \$000	2022 \$000	2023 \$000	2024 \$000	2025 \$000
Operations	0	0	0	0	0	0	0	0	0	0
Maintenance	0	0	0	0	0	0	0	0	0	0
Capital Renewal	to be incorporated into Register (where Method 1 is used) OR Defect Repairs (where Method 2 or 3 is used)									
Capital Upgrade	0	0	0	0	0	0	0	0	0	0
Forecasts for Capital Renewal using Methods 2 & 3 (Form 2A & 2B) & Capital Upgrade (Form 2C)										
Forecast Capital Renewal from Form 2A & Form 2B	2016 \$000	2017 \$000	2018 \$000	2019 \$000	2020 \$000	2021 \$000	2022 \$000	2023 \$000	2024 \$000	2025 \$000
Forecast Capital Upgrade/New from Form 2C	1,335	917	917	917	917	917	917	917	917	917
	1,148	1,253	2,106	1,206	1,206	1,206	1,206	1,206	1,206	1,206

Appendix D Drainage & Waterways Risk Management Plan

Risk No.	Asset providing the Service	What can happen?	Existing controls	Risk Rating	Treatment option	Est. Cost \$000	Options Residual Risk	Risk Treatment Plan	Residual Risk	
1	Stormwater Pits & Pipes (damage)	Heavy Vehicle Damage, Pipes can silt up, be displaced, blocked, damage from construction, tree roots invade & interference with service providers can result in road pavement damage	Compaction specifications for construction, cleaning program, CCTV inspection program	Medium	A	CCTV inspection Program to prioritise maintenance	\$30	High	Option A,B&C	High
					B	Increased stringent supervision of construction & superintendance		Low		
					C	CCTV inspection of pipes following construction		Low		
					D					
2	Stormwater network (capacity)	System can have insufficient capacity resulting in local flooding	Large developments are assessed and detention requirements are enforced	High	A	Analysis, redesign & reconstruction of the stormwater network	\$800	High	Option A	High
					B					
					C					
					D					
3	Trash Racks / Gross Pollutant Traps / Headwalls	Can become blocked, are in hard to access locations	Routine cleaning program	Medium	A	Continued regular servicing		Medium	Option A	Medium
					B					
					C					
					D					
4	Rivers/Creeks/Lined Open Channels	Scouring, silting, undercutting, overtopping, erode, undermine & damage to bridges	Routine maintenance and capital works	High	A	Continued regular desilting, erosion control & Capital Works		Medium	Option A	Medium
					B					
					C					
					D					
5	Flood dams	Failure to dam resulting in major flooding, overtopping and upstream siltation	Routine piezometer readings for moisture content of	High	A	Maintain current monitoring and maintenance procedures	\$50	High	Option A	High
					B	Increase dam capacity	\$30	High		
					C					
					D					

			Cobbler Creek Dam, regular maintenance and routine survey monitoring							
6	Flood detention basins	Siltation and insufficient capacity can result in local flooding	Reactive maintenance, capital works program being developed	Medium	A			Option A	High	
					B	Seek additional funding for silt level reduction as part of existing watercourse management plan (720k)	\$150			Medium
					C					
					D					
7	Ornamental Lakes eg Sir Douglas Mawson Lake/Shearwater Lake	Lake wall stability compromised, blue green algae, carp present in lake, sinking of surrounding footpath, wall rotating	15/16 Budget bid to stabilise walls, algae treated	Medium	A	***Budget Bid has been submitted for 14/15 to repair lake wall, maintain current servicing of lakes	DR	Low	Option A	Low
					B					
					C					
					D					
8	St Kilda Road, Barker Road, Wilson Road, Anjanto Road	Major flooding causes extensive damage to infrastructure	Incomplete remedial work has occurred in 14/15 as an urgent response	Very High	A	Completion of pumping station in Barker Road	\$150	High	Option B in conjunction Option A,C	Low
					B	Regional Drainage study and remedial work	\$40	Low		
					C	More stringent control of development		High		
					D					
9	St Kilda Sea Wall & Rising sea level	Overtop resulting in flooding along St Kilda and up Dry Creek	Sea wall has been constructed in high priority locations	High	A	Survey of entire sea wall within CoS (saltfields) to determine if remedial work required	\$20	High	Option A	High
					B					
					C					
					D					

10	Globe Derby Pump Station	Power blackout, insufficient capacity, high maintenance expenditure results in local flooding	Maintenance undertaken regularly	High	A	Develop agreement with generator hire company to guarantee supply in emergency flood event		Medium	Option A	Medium
					B					
					C					
					D					
11	Non return flood valves	Can become blocked or stuck open	Routine maintenance and inspections	Medium	A	Maintain current monitoring and maintenance procedures		High	Option A	High
					B					
					C					
					D					
12	Constructed waterways (Open Channels, Basins, etc. for example, Greenfields Wetlands.	Flooding from incorrect application of operating procedures (opening and closing of valves, for example).	Reactive responses utilising knowledge available at the time, which can be variable.	Medium	A	Review Operating Procedures and Staff Training		Low	Option A	Low
					B					
					C					
					D					

Appendix E Abbreviations

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

Appendix F Glossary

Annual service cost (ASC)

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

Asset

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

Asset category

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

Asset class

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

Asset condition assessment

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

Asset hierarchy

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

Asset management (AM)

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

Asset renewal funding ratio

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

Average annual asset consumption (AAAC)*

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

Borrowings

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

Capital expenditure

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

Capital expenditure - expansion

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

Capital expenditure - new

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

Capital expenditure - renewal

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

Capital expenditure - upgrade

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

Capital funding

Funding to pay for capital expenditure.

Capital grants

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

Capital investment expenditure

See capital expenditure definition

Capitalisation threshold

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

Carrying amount

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

Class of assets

See asset class definition

Component

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

Core asset management

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

Cost of an asset

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

Critical assets

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

Current replacement cost (CRC)

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

Deferred maintenance

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

Depreciable amount

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

Depreciated replacement cost (DRC)

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

Depreciation / amortisation

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

Economic life

See useful life definition.

Expenditure

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

Expenses

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

Fair value

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

Financing gap

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

Heritage asset

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

Impairment Loss

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

Infrastructure assets

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

Investment property

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

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

Key performance indicator

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

Level of service

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

Life Cycle Cost *

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

Life Cycle Expenditure

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

Loans / borrowings

See borrowings.

Maintenance

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

- **Planned maintenance**

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

- **Reactive maintenance**

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

- **Specific maintenance**

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

- **Unplanned maintenance**

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

Maintenance expenditure *

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

Materiality

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

Modern equivalent asset

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

Net present value (NPV)

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

Non-revenue generating investments

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

Operations

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

Operating expenditure

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

Operating expense

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

Operating expenses

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

Operations, maintenance and renewal financing ratio

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

Operations, maintenance and renewal gap

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

Pavement management system (PMS)

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

PMS Score

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

Rate of annual asset consumption *

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

Rate of annual asset renewal *

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

Rate of annual asset upgrade/new *

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

Recoverable amount

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

Recurrent expenditure

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

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

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

Renewal

See capital renewal expenditure definition above.

Residual value

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

Revenue generating investments

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

Risk management

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

Section or segment

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

Service potential

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

Service potential remaining

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

Specific Maintenance

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

Strategic Longer-Term Plan

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

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

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

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

Value in Use

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

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *