

Asset Management Plan

# Sewer Assets

2022 – 2026



Document Control		Asset Management Plan			
Document ID :					
Rev No	Date	Revision Details	Author	Reviewer	Approver
1	March 2022	Submission to Council Workshop	KA	ZW	SB

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## 1.0 EXECUTIVE SUMMARY

### 1.1 The Purpose of the Plan

The purpose of the Asset Management Plan (AM Plan) is to consider Council's priorities and focus, associated strategic documents and the management of the sewer network.

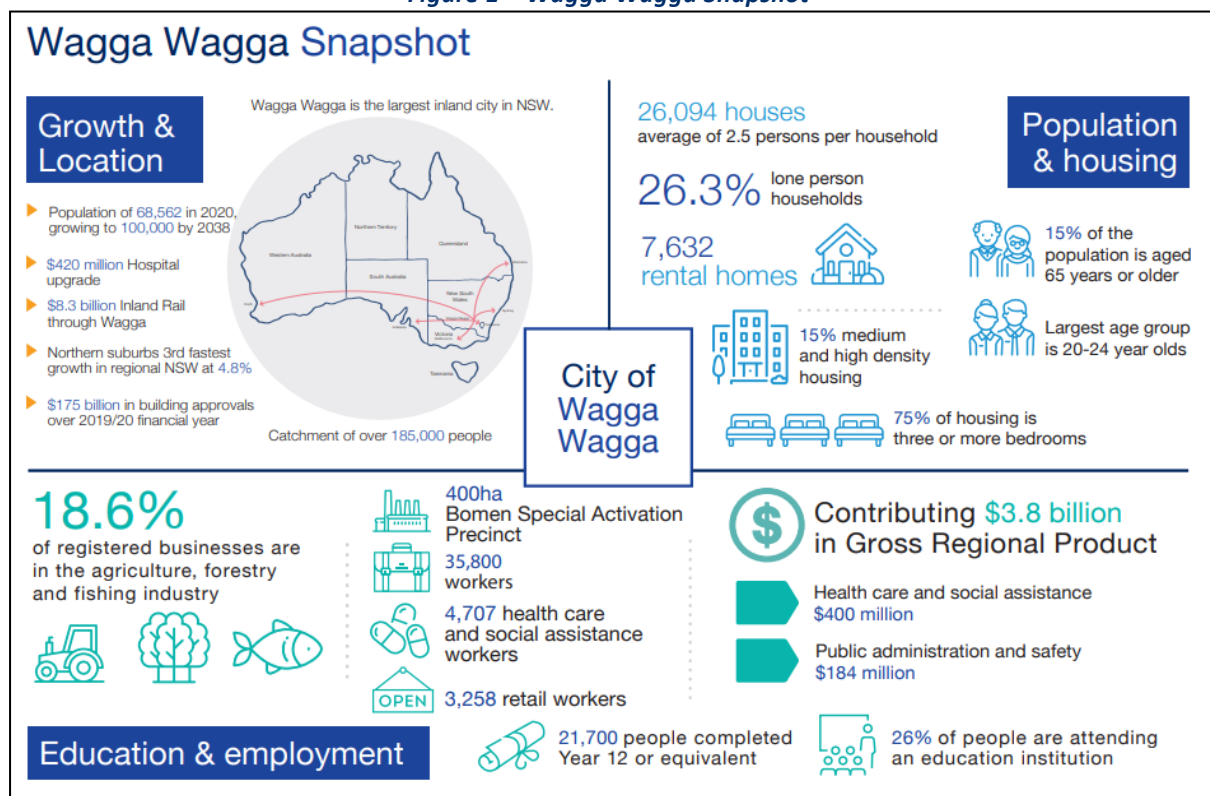
This AM Plan is to be read with the Council's [Community Strategic Plan 2040 – Wagga View](#) and asset planning documents including the Asset Management Policy and Asset Management Strategy. Other key planning documents are listed below:

- Community Strategic Plan 2040 – Wagga View
- Long Term Financial Plan 2022-2023
- Local Strategic Planning Statement – Planning for the future: Wagga 2040
- Wagga Wagga City Council Development Servicing Plan Sewerage Services 2013

The [Wagga Wagga Local Strategic Planning Statement \(LSPS\) –Wagga 2040](#) define some of Council's priorities and future demands.

The LSPS sets the long term strategic framework for planning and development in the City of Wagga Wagga local government area over the next 20 years. It addresses issues of strategic significance to the Council, guiding development or introduction of new planning policies, strategies or actions related to land use and development. The below image, from the LSPS provides a snapshot of the Wagga Wagga local government area.

**Figure 1 – Wagga Wagga Snapshot**



The LSPS sets out principles on which Council will make decisions into the future. They will be based on connectivity to the central core and accessibility to services and community facilities to ensure the growth of the city is financially and environmentally sustainable.

The mission statement for the Wagga Wagga City Council Sewerage Business is based on the mission statement suggested by the [NSW Water and Sewerage Business Planning Guidelines](#). It is to provide a cost-

effective sewerage service to the urban centres of Wagga Wagga, Forest Hill, Uranquinty, Tarcutta, Ladysmith and Collingullie which meets the Levels of Service to which customers have agreed, and for which they are prepared to pay, and which satisfies all statutory requirements. The service will be provided equitably and in a commercial manner, taking into account the values of the broader community. The service will be environmentally sensitive, promote ecological sustainability within the area of operations, protect public health and make best use of regional resources.

The second purpose of the AM Plan is to provide information about infrastructure assets together with actions required to deliver an agreed level of service in the most cost-effective manner, while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to be provided over the 10 year planning period. The AM Plan will link to Council's Long Term Financial Plan (LTFP) which considers a 10 year planning period.

## 1.2 Asset Description

This plan covers the infrastructure assets that provide sewerage services to the Community.

**Table 1 – Sewerage Network**

Asset Category	Number/Length	Replacement Value
Sewer mains	698 kms	\$196,543,703
Sewer manholes	21,574	\$49,683,293
Sewer Pump Stations	41	\$32,781,897
Sewer Treatment Plants	8 Narrung, Koorngal, Bomen Industrial Sewer Treatment Facility (BISTF), Forest Hill, Collingullie, Uranquinty, Tarcutta, Mangoplah.	\$103,092,205
<b>TOTAL</b>		<b>\$382,101,098</b>

## 1.3 Levels of Service

The allocation in the planned budget is sufficient to continue providing existing services at current levels only for the planning period as shown in the Technical Levels of Service.

## 1.4 Future Demand

The factors influencing future demand are consistent with the Wagga Wagga Local Strategic Planning Statement – Wagga Wagga 2040 (LSPS) and the impacts they have on service delivery are created by:

- population change,
- changes in demographics,
- seasonal factors,
- economic factors,
- community expectations,
- technological changes,
- climate change,
- land subdivision and urban infill and consolidation.

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

The planning for infrastructure due to demand is a constant process of review and assessment of existing infrastructure and its ability to cope with increasing demand, versus the need to augment with new infrastructure. Demand on infrastructure is created through increased utilisation generated from a growing population and changing patterns of behaviour, ranging from social demographics to infrastructure options

and solutions. Often this increasing demand will stem from urban or residential growth increasing the utilisation of a range of community infrastructure.

Wagga 2040 indicates areas and projections for future infrastructure demands.

## 1.5 Lifecycle Management Plan

### 1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the sewerage network is estimated as \$146,542,461 or \$14,654,246 on average per year.

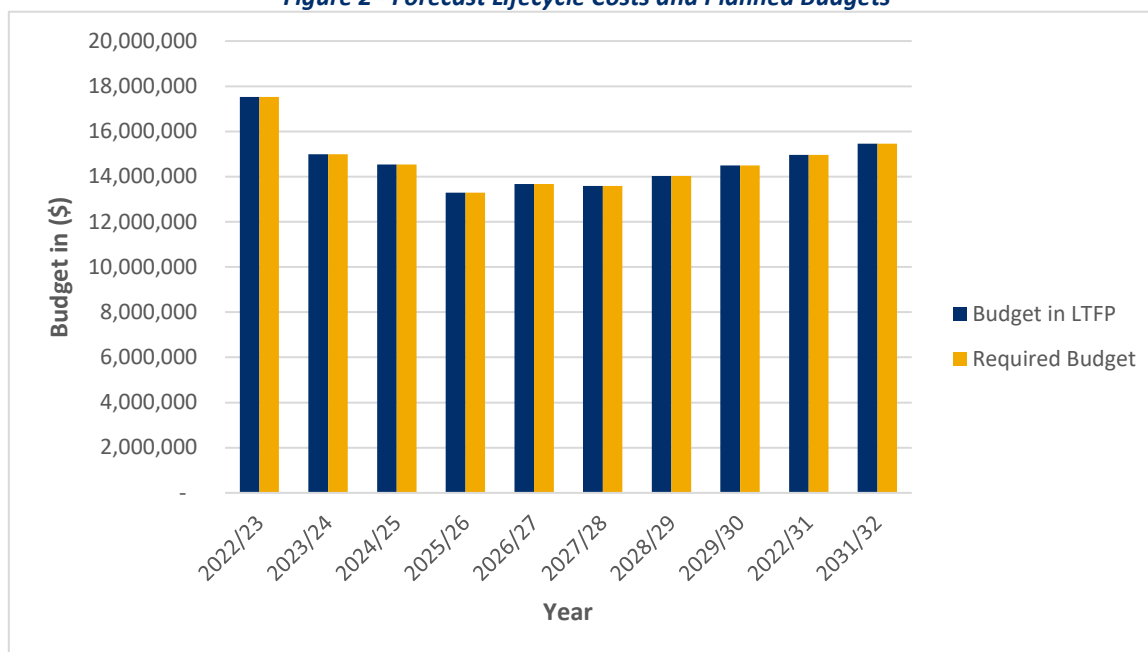
## 1.6 Financial Summary

### 1.6.1 What we will do

The estimated available funding for the 10 year period is \$146,542,461 or \$14,654,246 on average per year as per the Long Term Financial Plan. This is 100% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the Long Term Financial Plan can be provided. Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

**Figure 2 - Forecast Lifecycle Costs and Planned Budgets**



We plan to provide operation, maintenance, renewal and acquisition services for sewer mains, manholes, pump stations and treatment works to meet service levels set in annual budgets.

### 1.6.2 What we cannot do

Currently the Development Servicing Plan Sewerage Services 2013 (DSP Sewer) and the Long Term Financial Plan (LTFP) do not include any works to upgrade the capacity of the sewer treatment works. With current high levels of growth across the city, particularly in the existing northern growth area and expected growth further to the north and in the south, a sewer capacity model is being developed to identify the current level performance of the network compared to the capacity. This will inform the strategic plan for the sewer network.

At this point in time, there is no identified budget to increase the capacity of the sewer treatment plants.

### **1.6.3 Managing the Risks**

The sewer network is under constant monitoring to ensure it can manage the daily loads, within the existing capacity.

## **1.7 Asset Management Planning Practices**

Wagga Wagga City Council systems to manage assets include:

Wagga Wagga City Council systems to manage assets include:

- MyData – Asset Management System - Assetic
- ArcInfo – Geographic information system - ESRI
- FinanceOne – Accounting System - TechnologyOne
- Property & Rating – Request Management - TechnologyOne

Key assumptions made in this AM Plan are:

- The timing of capital renewals within the asset register is determined by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition assessment, modelling systems and may be supplemented with, or based on, expert knowledge.

## **1.8 Monitoring and Improvement Program**

The next steps resulting from this AM Plan to improve asset management practices are documented in Section 8 of this document. Council will monitor and improve its;

- Overall Asset Management Framework practices and processes; and
- Specific items relevant to each Asset Management Plan:
  - Establish a program for governance and management
  - Update asset management framework
  - Review technologies used in managing assets
  - Improve asset management capacity



## 2.0 Introduction

### 2.1 Background

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

The AM Plan is to be read with Council's planning documents, including:

- Community Strategic Plan 2040 – Wagga View
- Long Term Financial Plan 2022-2023
- Local Strategic Planning Statement – Planning for the future: Wagga 2040
- Wagga Wagga City Council Development Servicing Plan Sewerage Services 2013

The infrastructure assets covered by this AM Plan include sewer mains, manholes, pump stations and sewer treatment works. These assets are used to provide sewerage services to the Community.

The infrastructure assets included in this plan have a total replacement value of \$382,101,098.

Key stakeholders in the preparation and implementation of this AM Plan are shown in the following table.

**Table 2 - Key Stakeholders in the AM Plan**

Key Stakeholder	Role in Asset Management Plan
Wagga Wagga Councillors	<ul style="list-style-type: none"><li>- Represent the needs of the community</li><li>- Allocate resources to meet planning objectives in providing services while managing risks</li><li>- Ensure service sustainability</li></ul>
Federal Member	Represent Community interest within the federal government division of Riverina.
State Member	Represent Community interest within the federal government division of Wagga Wagga.
General Manager and the Executive	Direct Council Staff in the balancing of agreed service levels and the fiscal ability to provide services.
Council Staff	To maintain a proactive approach to customer requests, and to utilise a holistic asset management system and procedures which can better inform decisions by Council
Wagga Wagga Community (including residents and businesses)	Report perceived shortcomings, damage, safety concerns, etc. with the current infrastructure in relation to their needs
Emergency Services	Report perceived shortcomings, damage, safety concerns, etc. with the current infrastructure in relation to their needs
Federal and State Government Authorities and Agencies	Providing input with regard to overall infrastructure performance in conjunction with infrastructure under their jurisdiction.
Utility Companies	Providing input with regard to access to their assets
Developers	Providing input with regard to their interests in future investment in the infrastructure
Neighbouring Councils	Maintaining a dialogue with other municipal authorities with regard to asset management practices, construction standards, resource sharing, etc
NSW Government Regulators: NSW DPIE NSW Health NSW EPA	Safe capture, conveyance, treatment, reuse and associated management of through centralized, decentralised and onsite systems. Regulates and supports regional local water utilities in their provision sewerage services Public Health considerations Environmental regulator for water pollution activities, licensing and annual returns reporting.

## 2.2 Goals and Objectives of Asset Ownership

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

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

Key elements of the planning framework are

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

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

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

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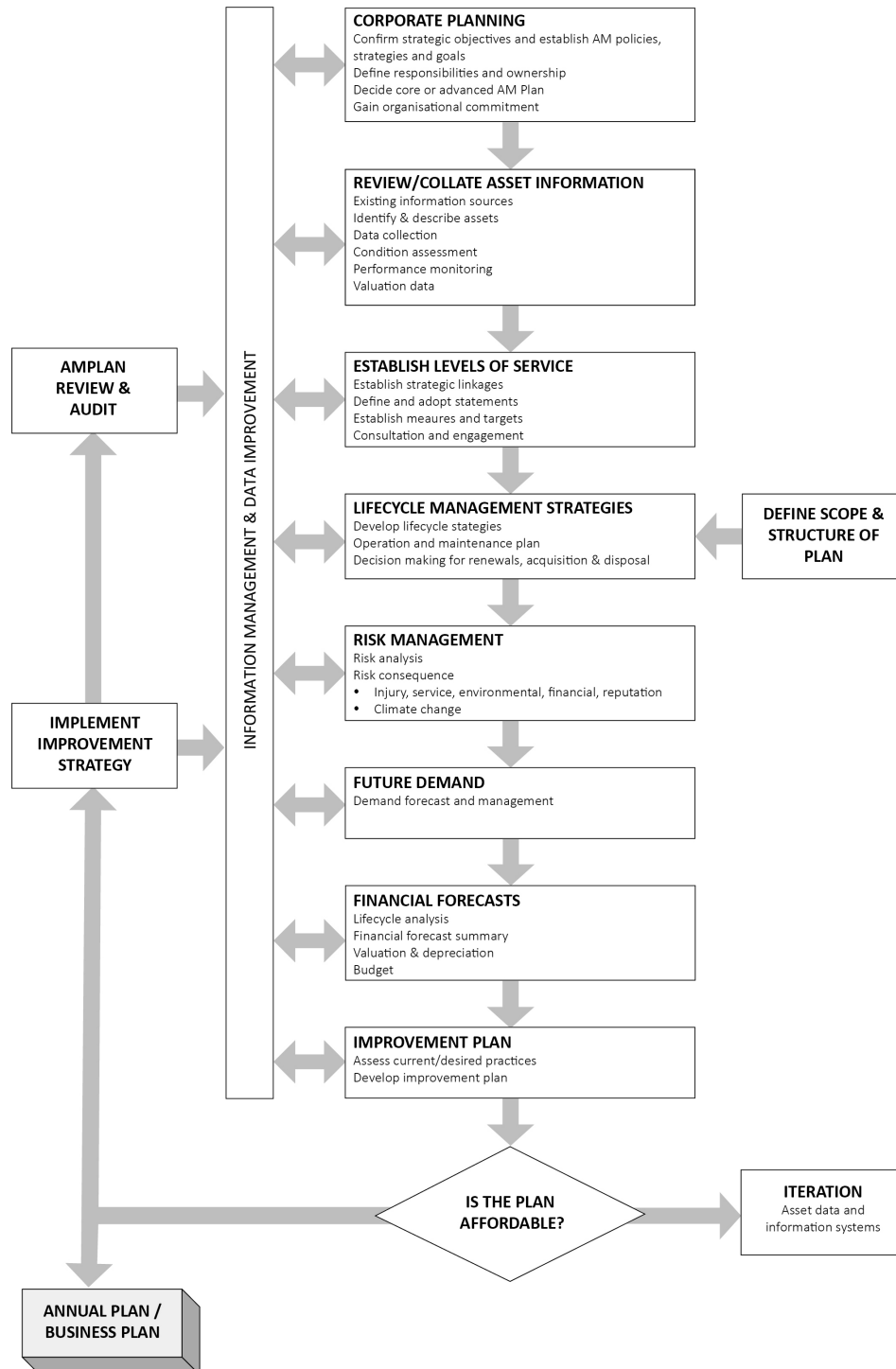
<sup>1</sup> Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13

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

A road map for preparing an AM Plan is shown below.

**Figure 3 - Road Map for preparing an Asset Management Plan**

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

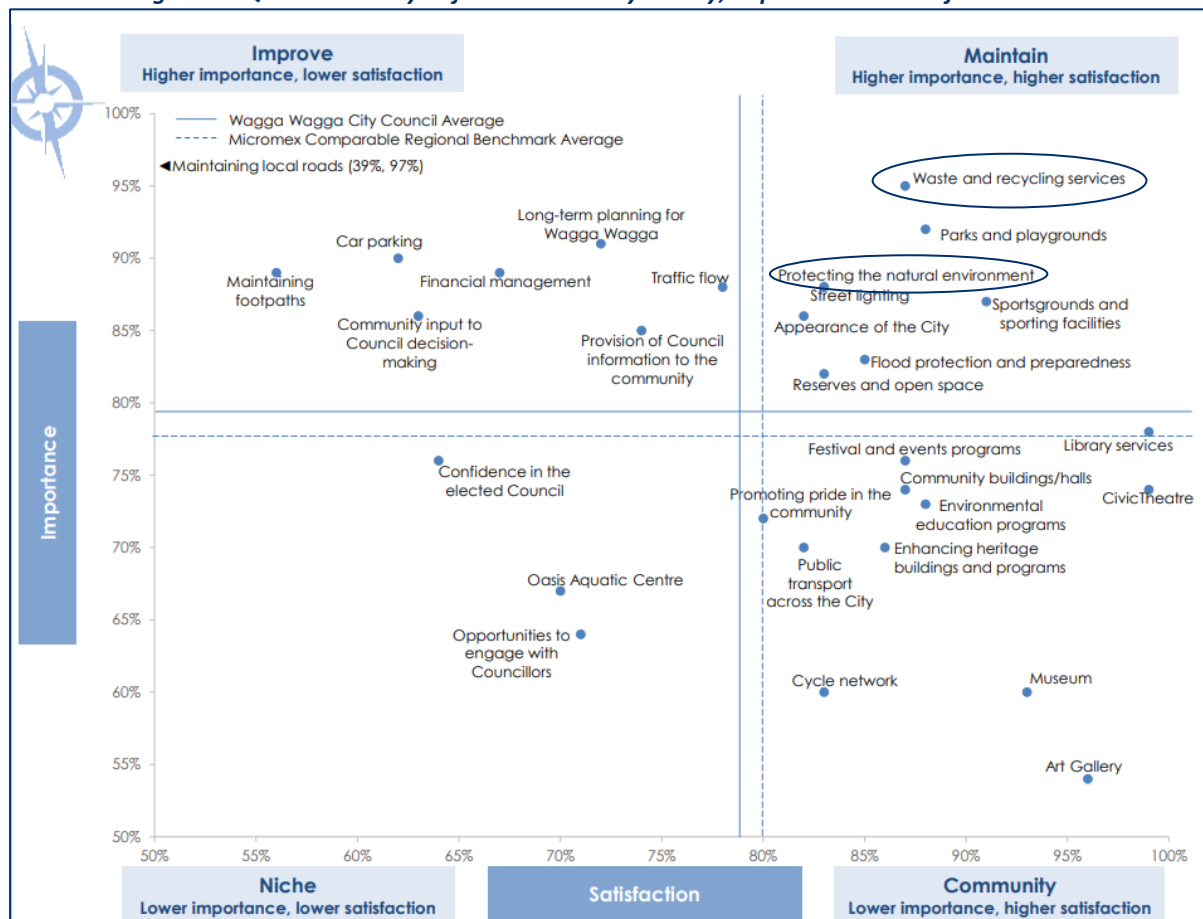


### 3.0 LEVELS OF SERVICE

#### 3.1 Customer Research and Expectations

Wagga Wagga City Council has conducted local government satisfaction surveys since 2006. This telephone survey samples residents on the levels of satisfaction with Council services and their importance.

**Figure 4 - Quadrant Analysis from Community Survey, importance vs satisfaction 2021**



Source: Wagga Wagga Community Survey Results 2021 [\\*Slide 1 \(nsw.gov.au\)](#)

2021 Customers Satisfaction survey feedback relevant to sewer and sewerage included;

- Customer ratings for the waste and recycling service have both increased since 2017 and are considered highly important and have been rate with a high satisfaction level (95% importance +1% since 2017, 87% satisfaction +4% since 2017).
- Protecting the environment is also seen as highly important and have a high satisfaction level (88% increasing by +1%, 83% decreasing by 3%).
- 38% of residents contacted Council – evenly distributed across the demographics of 35 to 60+ years of age. (32% in 2017)
- Of this 5% were related to sewerage services, the same results of 5% in 2017
- 77% of were at least somewhat satisfied with the handling of the contact, 44% were very satisfied compared to 40% in 2017.

This result reflects satisfaction with customer service expectations. Council's is responsible for the effective and efficient delivery of sewerage services to the community. Our sewerage systems collect sewage and liquid trade waste from customers and transport it to where it is treated and then dispose of it to the environment or recycle it by irrigation.

Council completed a survey of 1,280 sewerage users in 2014 to determine the current additional services they were willing to fund, to inform the Sewerage and Recycled Strategic Business Plan 2014-2019.

The themes of the responses showed the following:

- customers are supportive of expanding local effluent reuse schemes, yet 52% opposed increased sewer charges to subsidise the schemes,
- 18% of respondents reported a sewer blockage to Council, which is triple the network rate which may bias the results of the survey,
- rapid response to service requests was the highest priority for customers followed by regulatory compliance, and
- customers were most willing to pay the same as the current rates, with about half tolerating up to a 10% increase for this purpose.

The priorities identified are shown in the table below.

**Table 3 - Trends in Customer Sewer Priorities**

Importance	2005 Priorities	2011 Priorities	2014 Priorities	All Surveys Priorities
Rapid Response	1	1	1	1
Meets Regulations	3	3	2	2
Best Health	2	2	3	3
Best Possible Restoration	4	5	4	4
Best Environmental	5	4	5	5
As Cheaply as possible	7	6	6	6
Easy Access to performance info	6	8	8	7
Priced to encourage industry	8	7	7	8

The trends have been steady for 9 years and considered relevant for this Plan. The trends are shown in the table below.

**Table 4 - Willingness to pay for additional service (recycled water costs)**

When to Invest	Percentage of Responses	Percentage of Respondents Rejecting Trade-off
Cost Less/same	48%	4%
Never should	4%	
If <10% More	22%	52%
If <20% More	8%	74%
If <50% More	4%	82%
Regardless of the Cost	14%	86%

## 3.2 Strategic Direction

*The vision for the future from the [Community Strategic Plan 2040](#) is “in 2040 Wagga Wagga will be a thriving, innovative, connected and inclusive community on the Murrumbidgee. Rich in opportunity, choice, learning and environment. Wagga is a place where paths cross and people meet.”*

To ensure we achieve this community vision, we need to begin to embed elements of it in today’s planning. Four key words have been chosen by the community to be used as guiding principles in planning for our future. These four principles are – Thriving, Innovative, Connected and Inclusive.

In the Community Strategic Plan, the community agreed upon a number of priorities which are really important. These have been categorised into 5 strategic directions for the city. These are Community Leadership and Collaboration, Safety and Health, Growing Economy, Our Identity and Sense of Place and Our Environment. Asset management fits into the environment strategic direction and relates to the objectives of:



- we plan for the growth of the city, and
- we create and maintain a functional, attractive and health promoting environment.

This Asset Management Plan relates to the outcomes of:

- we have sustainable urban development, and
- we create and maintain a functional, attractive and health promoting built environment.

The strategies from the Community Strategic Plan addressed in this asset management plan are:

- provide and maintain appropriate infrastructure and services that support current and future needs,
- maintain infrastructure assets, and
- implement asset management planning.

The mission statement for the WWCC Sewerage Business is based on the mission statement suggested by the NSW Water and Sewerage Business Planning Guidelines. It is to provide a cost-effective sewerage service to the urban centres of Wagga Wagga, Forest Hill, Uranquinty, Tarcutta, Ladysmith and Collingullie which meets the Levels of Service to which customers have agreed, and for which they are prepared to pay, and which satisfies all statutory requirements. The service will be provided equitably and in a commercial manner, taking into account the values of the broader community. The service will be environmentally sensitive, promote ecological sustainability within the area of operations, protect public health and make best use of regional resources.

**Table 5 - Strategic directions and how these are addressed in this Plan**

Strategic Direction	Objective	How strategic directions are addressed in the AM Plan
Community leadership and collaboration	Council and management decisions are evidence based, equitable and transparent.	The plan provides a clear report on the situation with currently held assets and projections for those assets into the future, allowing informed decisions to be made.
Community leadership and collaboration	We provide transparent and sustainable financial management and deliver consistent and fair decision making to ensure our internal processes enhance external outcomes.	The plan provides a framework to promote better understanding of sustainable service delivery practices. It also sets out service requirement and seeks to define the way these are achieved and maintained over the long term.
Community leadership and collaboration	We understand our customer needs and have the technology and resources to support the organisation's service delivery goals.	The plan links to the service level document outlining the service level required, thereby providing a framework of what services Council can provide and how those services will be maintained into the future.
Our Environment	Development is thriving, sustainable and clean with access to appropriate services and infrastructure	Suitable provision of assets into the future are considered as part of the asset management plan.

### 3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the sewerage service are outlined in the table below.

**Table 6 - Legislative Requirements**

Legislation	Requirement
Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a Long Term Financial Plan supported by asset management plans for sustainable service delivery.
Local Government (General) Regulation 2021	Sets out roles, purposes, responsibilities and powers of local government, in addition to those set out in the Local Government Act 1993, including integrated planning and reporting guidelines.

Legislation	Requirement
Environmental Planning & Assessment Act 1979	Requirement for Local Environmental Plans and Development Control Plans. Provides for Council control of development of towns and approval of infrastructure expansion.
Australian Accounting Standards	Provides the conceptual framework and standards for accounting and financial reporting.
Work Health and Safety Act 2011	Impacts all operations in relation to safety of workers and the public. Council's responsibility to ensure health, safety and welfare of employees and others at places of work.

### 3.4 Customer Values

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

Customer Values indicate:

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

Customers generally value the following from Council's sewerage network:

- free flowing system from properties through connections into the Council network,
- odour free service,
- healthy disposal of black and grey water into the system,
- protection of the local environment from impacts of untreated domestic and trade waste,
- limited odour or noise impacts from treatment plants and sewer pump stations, and
- investigate efficient and low-cost wastewater reuse opportunities.

Council has an obligation to operate its sewerage water business in such a way as to minimise pollution of the environment, protect ecologically sensitive areas and to promote ecological sustainability.

During the last decade, key changes to Council's environmental performance include;

- upgraded Wagga Wagga Sewage Treatment Plants to "sensitive waters" discharge standards. The remaining smaller plants dispose of nutrients via land-based application systems, and
- an increase in energy consumption associated with the improved standard of treatment

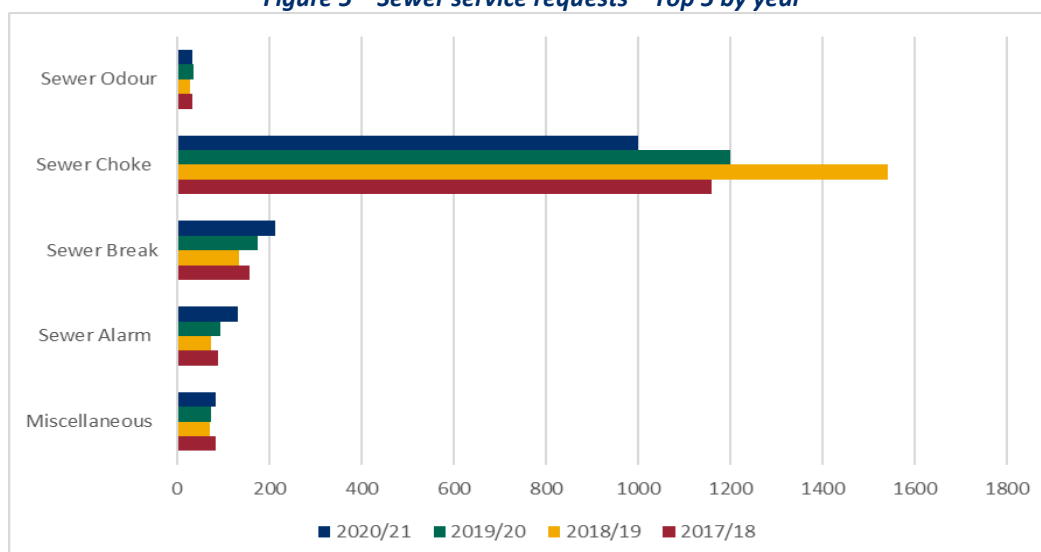
Water discharged to the Murrumbidgee River has improved considerably and has been recognised as an offset to water extractions from the river, noting that customers have indicated that they are not willing to subsidise the production of recycled water.

Council's customer request system shows the most common customer requests focus on:

1. Sewer choke
2. Sewer break
3. Sewer alarm
4. Miscellaneous requests – usually undefined by customer into a category
5. Sewer odour

This is shown below.

**Figure 5 – Sewer service requests – Top 5 by year**



The 2018/19 increase in customer requests to address sewer chokes may relate to decreased rainfall during the period (approximately 60- 80% of the mean).

### 3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

<b>Condition</b>	How good is the service ... what is the condition or quality of the service?
<b>Function</b>	Is it suitable for its intended purpose .... Is it the right service?
<b>Capacity/Use</b>	Is the service over or under used ... do we need more or less of these assets?

In the table below under each of the service measures types (Condition, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

These are measures of fact related to the service delivery outcome (e.g. number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

**Table 7 - Customer Level of Service Measures**

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
<b>CUSTOMER LEVELS OF SERVICE – Sewer Mains</b>				
Condition	Pipes in high priority areas made from earthenware and asbestos cement are renewed as required	Condition assessment 2016/17	Condition 1 = 62.9% Condition 2 = 36.2% Condition 3 = 0.0% Condition 4 = 0.0% Condition 5 = 0.9%	Maintain parity or reduce number of customer requests from previous years
<b>CUSTOMER LEVELS OF SERVICE – Sewer Manholes</b>				
Condition	Sewer Nodes in high priority areas are renewed as required	Condition assessment 2016/17	All in Condition 1 = 100%	Maintain parity or reduce number of customer requests from previous years
<b>CUSTOMER LEVELS OF SERVICE – Pumping Stations</b>				
Condition	Structural elements of the pump stations in condition 4 and 5 are remediated as planned  Pumping stations have the capacity to store and pump required volumes of sewage	Condition assessment 2016/17	Condition 1 = 38.3% Condition 2 = 26.1% Condition 3 = 21.2% Condition 4 = 11.0% Condition 5 = 3.5%	Maintain parity or reduce number of customer requests from previous years
<b>CUSTOMER LEVELS OF SERVICE – Sewer Treatment Plants</b>				
Condition	Refurbish treatment plant elements in condition 4 and 5	Condition assessment 2016/17	Condition 1 = 2.3% Condition 2 = 61.1% Condition 3 = 31.4% Condition 4 = 4.3% Condition 5 = 0.9%	Maintain parity or reduce number of customer requests from previous years
Function	Reduce impact of Sewage Treatment Plants on surrounding residents	- Noise at residences less than 5dB above background noise level. - Odour undetectable at residences outside the utility's buffer zone		

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
<b>CUSTOMER LEVELS OF SERVICE – Sewer Network</b>				
Function	Domestic sewage provided in defined service area	Connections	Area 100% serviced	
Function	Acceptance of commercial and industrial waste	Waste accepted		
Function	Meet minimum performance standards set by license			
Function	Controlled, expected (overflow structure) – related to rainfall and design  Controlled, unexpected (flow relief structure)  Uncontrolled, unexpected overflow	<ul style="list-style-type: none"> <li>- Not more than 2 times/yr</li> <li>- Not more than once every 5 years</li> <li>- Private : Not more than 50 times/1000 properties/year</li> <li>- Public : sensitive areas (eg. Baylis St) = &lt;1/5yr</li> <li>- Public : elsewhere: Not more than 30 times/100kms/yr of main</li> </ul>	95% of residential properties affected by more than 3 failures within 5 years will have the fundamental cause addressed within 12 month	

Note: [Guided by the NSW Water and Sewerage Strategic Business Planning Guidelines](#)

The level of service proposed for the sewerage business is generally based on the parameters recommended by the NSW Water and Sewerage strategic business Planning Guidelines (NSW Office of Water, 2011). In addition to the Customer Levels of Service the below table shows additional service measures specific to the sewer network.



**Table 8 – Additional Service Levels**

Service	Level of Service	Current Performance	Trend
Availability			
No. Sewerage Treatment Works	7	7	Steady
Total chokes and breaks in both gravity (reticulation) and rising (pressure) mains resulting in an interruption to the sewerage service or overflows.	400	432	
Network infiltration per 100km main		7.67ML	
Connections			
Total connected properties (residential plus non-residential)	90%	26,759	Increases with urban population growth
Population served with sewerage service in June this reporting year.	All		Increasing
New residences connected (% of connected residential properties)	All	2%/yr	Steady
Unserved urban population (Reported)	n/a	788	
Unserved urban properties (Reported)	n/a	315	
Service – Average system failures			
Average Sewerage Interruption (minutes)	90	81.00	Increasing
Response Times (hours) Priority 1	1 (2 after hours)	On track	May need better reporting in future, currently interruption time is only slightly higher than response time
Response Times (hours) Priority 2	3 (4)		
Response Times (hours) Priority 3	Next working day		
Response to Customer Complaints			
Billing	0	0	
Odour	2.0 per odour source	2.0	Steady
Total service complaints (chokes, services and odour) excl. billing per 1,000 properties	50	51.20	Gradually reducing
Health			
Health Incidents per 1000 properties categories (1,2&3)	0	0	Steady
Environment			
Sewer Overflows - Total - Reported to Regulator	2	3	Steady
Percent of Sewage Treated samples that were Compliant	95%	96.07%	Steady
Net greenhouse gas emissions from all operations relating to sewerage (t CO2) per 1000 properties	<150	140.48	
Financial			
Asset Maintenance Ratio - "Current annual maintenance" as %age of "required annual maintenance"	100%	83%	
Estimated Cost to Bring up to Satisfactory Condition/Standard	0	\$8.09M	Increasing

Source: [DPIE LWU performance monitoring data and reports](#)

### 3.6 Technical Levels of Service

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

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

- **Acquisition** – the activities to provide a higher level of service (e.g. replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new sewer pump station).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleaning, mowing grass, energy, inspections, etc.)
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. jetting).
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. pipeline replacement).

The table below shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the forecast activity requirements being recommended in this AM Plan.

**Table 9 - Technical Levels of Service**

Service Attribute	Service Objective	Target Activity Measure Process	Current Performance	Estimated Required Budget	Budget as per Long Term Financial Plan	Funding Ratio (Budget/ Required Budget)
<b>Operations</b>	Operate sewer treatment plants at Koorungal, BISTF and Narrung.	Operate the sewer treatment plants to ensure sewage is treated efficiently at Koorungal, BISTF and Narrung.	Weed spraying, mowing, minor repairs and mechanical and electrical repairs	*\$45,279,027 over 10 years	*\$45,279,027 over 10 years	<b>100%</b>
	Operate sewer treatment plants excluding Koorungal, BISTF and Narrung.	Operate sewer treatment plants excluding Koorungal, BISTF and Narrung.		*\$7,695,956 over 10 years	*\$7,695,956 over 10 years	<b>100%</b>
	Operate pump stations	Operate pump stations		\$12,459,195	\$12,459,195	<b>100%</b>
			<b>Total Operations</b>	<b>\$65,434,178</b>	<b>\$65,434,178</b>	<b>100%</b>
<b>Maintenance</b>	Maintain sewer pipes and manholes	Maintain sewer pipes and gravity mains to clear blockages	Jetting and root cutting, clearing blockages, small segment repairs, odour control – target 500m/week	\$26,429,048 over 10 years	\$26,429,048 over 10 years	<b>100%</b>
	Maintain pump stations	Maintain pump stations to manage odour. Service pumps to meet expected useful life.	Clean pump stations daily. Pumps pulled and checked 3 monthly and serviced every 6 months	\$382,373 over 10 years	\$382,373 over 10 years	<b>100%</b>
	Maintain sewer treatment plants at Koorungal, BISTF and Narrung.	Maintain the sewer treatment plants to ensure sewage is treated efficiently at Koorungal, BISTF and Narrung.	Weed spraying, mowing, minor repairs and mechanical and electrical repairs	*\$19,405,297 over 10 years	*\$19,405,297 over 10 years	<b>100%</b>
	Maintain sewer treatment plants excluding Koorungal, BISTF and Narrung.	Maintain the sewer treatment plants to ensure sewage is treated efficiently at the facilities.		*\$2,957,894 over 10 years	*\$2,957,894 over 10 years	<b>100%</b>
			<b>Total Maintenance</b>	<b>\$49,174,612</b>	<b>\$49,174,612</b>	<b>100%</b>
<b>Renewal</b>	Renew Cartwright's Hill Pump Station - SPS09		Proposed 2024/25 and 2025/26	\$250,000	\$250,000	<b>100%</b>
	Renew Forsyth St Pump Station - SPS02		Proposed 2022/23 and 2023/24	\$800,000	\$800,000	<b>100%</b>

Service Attribute	Service Objective	Target Activity Measure Process	Current Performance	Estimated Required Budget	Budget as per Long Term Financial Plan	Funding Ratio (Budget/ Required Budget)
	Narrung St Treatment Plant Flood Protection Infrastructure		Proposed 2022/23	\$499,591	\$499,591	100%
	Renew Shaw Street SPS06 Pump Station		Proposed 2025/26	\$280,000	\$280,000	100%
	Renew - Tarcutta Sewage Treatment Works		Proposed 2022/23	\$249,236	\$249,236	100%
	Renew - Uranquinty Pump Station - SPS31		Proposed 2026/27	\$520,000	\$520,000	100%
	Renew - Wiradjuri Sewer Pump Station - SPS10		Proposed 2024/25 and 2025/26	\$88,518	\$88,518	100%
	Sewer Gravity Mains Renewal Program		Proposed 2022/23 to 2031/32	\$1,778,842	\$1,778,842	100%
	Sewer Joint Connections Elimination		Proposed 2022/23 to 2031/32	\$576,442	\$576,442	100%
	Sewer Mains Rehabilitation Program		Proposed 2022/23 to 2031/32	\$15,941,835	\$15,941,835	100%
	Sewer Manhole Lids Replacement		Proposed 2022/23 to 2031/32	\$783,401	\$783,401	100%
	Sewer Plant Replacement and Renewal		Proposed 2022/23 to 2031/32	\$585,091	\$585,091	100%
			<b>Total Renewal</b>	<b>\$22,352,955</b>	<b>\$22,352,955</b>	<b>100%</b>
<b>New</b>	Developer Contributed Assets	7.26kms on average/year		Funded by developers	Funded by developers	
	Copland Street Pump Station - SPS39 - New Asset		Proposed 2022/23	\$379,124	\$379,124	100%
	Elizabeth Avenue Forest Hill SPS22 - New Assets		Proposed 2022/23	\$975,183	\$975,183	100%
	Flowmeters Installation at Major Pumpstations		Proposed 2022/23	\$39,862	\$39,862	100%
	Re-use Water - Additional infrastructure to meet quality requirements		Proposed 2022/23	\$1,224,096	\$1,224,096	100%

Service Attribute	Service Objective	Target Activity Measure Process	Current Performance	Estimated Required Budget	Budget as per Long Term Financial Plan	Funding Ratio (Budget/ Required Budget)
	Springvale Pump Station - SPS36 - New Assets		Proposed 2022/23 and 2023/24	\$596,457	\$596,457	100%
	Glenfield East Pump Station - SPS41 New Assets		Proposed 2023/24 and 2024/25	\$2,507,393	\$2,507,393	100%
	Sewer – Olympic Highway - SPS13 New Assets		Proposed 2022/23 and 2023/24	\$944,822	\$944,822	100%
			<b>Total New</b>	<b>\$6,666,937</b>	<b>\$6,666,937</b>	<b>100%</b>
<b>Upgrade</b>	Ashmont SPS, Rising Main and Gravity Main Upgrade		Proposed 2022/23	\$608,596	\$608,596	100%
	Forest Hill Treatment Works - New Assets		Proposed 2022/23 and 2023/24	\$2,305,185	\$2,305,185	100%
			<b>Total Upgrade</b>	<b>\$2,913,781</b>	<b>\$2,913,781</b>	<b>100%</b>

Note: \* Assumed split of budgeted Contract costs - 70% Operations, 30% Maintenance. Figures to be refined in future revisions of this Asset Management Plan.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

## **4.0 FUTURE DEMAND**

### **4.1 Demand Drivers**

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices and environmental awareness for example.

Demand for infrastructure is generated predominantly through either an increased utilisation of existing infrastructure brought about by the factors above or the requirement for new infrastructure to meet the needs of growth in new development.

The demand created by these two circumstances requires analysis to consider the ramifications to existing infrastructure networks and the ability of these networks to cope with the increased infrastructure. This analysis applies in all cases ranging from new subdivisions creating an increased load on existing networks, to changes in existing areas leading to increasing or decreasing utilisation and demand on infrastructure assets.

Council is working with Engineering Consultants, Cardno, to develop a Sewer Model which will assist with identification of inflows, due for completion in mid-2022.

### **4.2 Demand Impact and Demand Management Plan**

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

The planning for infrastructure due to demand is a constant process of review and assessment of existing infrastructure and its ability to cope with increasing demand, versus the need to augment with new infrastructure.

Demand on infrastructure is created through increased utilisation generated from a growing population and changing patterns of behaviour, ranging from social demographics to transport options and solutions. Often this increasing demand will stem from urban or residential growth increasing the utilisation of a range of community infrastructure.

### **4.3 Asset Programs to meet Demand**

The new assets required to meet demand may be acquired, donated, dedicated or constructed.

Acquiring new assets will commit Council to ongoing operations, maintenance and renewal costs for the period that these assets provide a service. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the Long Term Financial Plan.

### **4.4 Climate Change Adaptation**

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

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.<sup>3</sup>

As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

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<sup>3</sup> IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure



Risk and opportunities identified to date are shown in the table below.

<b>Table 10 - Managing the Impact of Climate Change on Assets and Services</b>		
<b>Climate Impacts</b>	<b>Risk Statement (Cause and Effect)</b>	<b>Adaptation Actions</b>
Increased rainfall variability	Increased rainfall variability and increased intensity of storm events leads to fluctuating volumes of water to deal with causing difficulty in maintaining treatment processes resulting in increased costs for electricity and chemicals.	Implement a targeted inflow and infiltration prevention program to minimise increase in volume of water in sewer network from rainfall events.
Increased intensity of storm events		Develop a program of indoor demand management activities to reduce load on sewer network
Increased intensity of storm events	Increased storm events lead to black outs causing pumping failure and sewer overflows resulting in public health issues, environmental harm, and possible fines.	Install permanent generator or alternate off-grid option for each pump site.  Evaluate the adequacy of emergency storage capacity at each treatment plant.
Increase in hot days	Increased hot days lead to odour issues which lead to impacts on the community resulting in complaints from community and possible fines.	Investigate feasibility of oxygen injection and odour control methods
Increased flooding	Increased flooding leads to inundation of vulnerable infrastructure, causing system failure resulting in public health issues, environmental harm, repair costs and possible fines.	Identify specific flood prone assets and evaluate site specific opportunities to move or protect asset.  Implement actions from the Floodplain Risk Management Plan and the Sewer Asset Management Plan.
Increased bushfire risk	Increase in bushfire risk leads to damage of critical infrastructure, causing system failure resulting in public health issues, environmental harm, repair costs and possible fines.	Identify specific bushfire prone assets and evaluate site specific opportunities to move or protect asset.

Source: [Building Resilience to Climate Change. Climate Change Risk Assessment and Adaptation options for Council Assets](#) – Report for City of Wagga Wagga 2018

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

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

The following table summarises some asset climate change resilience opportunities.

<b>Table 11 - Building Asset Resilience to Climate Change</b>		
<b>New Asset Description</b>	<b>Climate Change impact These assets?</b>	<b>Build Resilience in New Works</b>
Generators	With more storm events predicted as a result of climate change, it is expected the sewer network will see more infiltration.	Onsite generators installed
Sewer Network		Consider new technologies to reduce infiltration

## 5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service while managing life cycle costs.

### 5.1 Background Data

#### 5.1.1 Physical parameters

The assets covered by this AM Plan are shown below.

**Table 12 - Assets covered by this Plan**

Asset Category	Number/Length	Replacement Value
Sewer mains	698 kms	\$196,543,703
Sewer manholes	21,574	\$49,683,293
Sewer Pump Stations	41	\$32,781,897
Sewer Treatment Plants	8	\$103,092,205
<b>TOTAL</b>		<b>\$382,101,098</b>

#### 5.1.2 Asset capacity and performance

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

**Table 13 - Known Service Performance Deficiencies**

Location	Service Deficiency
Sewer Network Capacity	There are concerns with the capacity of network with the high level of growth in new areas and increased infill levels. A Sewer Capacity Model is being designed to show the areas of the network where capacity is an issue.

#### 5.1.3 Asset condition

The table below details the condition inspection regime for the assets included in this plan.

**Table 14 - Condition Assessment Regime for Sewer Assets**

Asset Category	Inspection Frequency	Methodology	Last Inspection Date	Next Inspection Due
Sewer Mains	Every 5 years	Camera	2016/17	2022
Sewer Manholes	Every 5 years	Camera	2016/17	2022
Sewer Pump Stations	Every 5 years	Camera	2016/17	2022
Sewer Treatment Plants	Every 5 years	Camera	2016/17	2022

Condition is measured using a 1 – 5 grading system<sup>4</sup> as detailed in the table below. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM plan results are translated to a 1 – 5 grading scale for ease of communication.

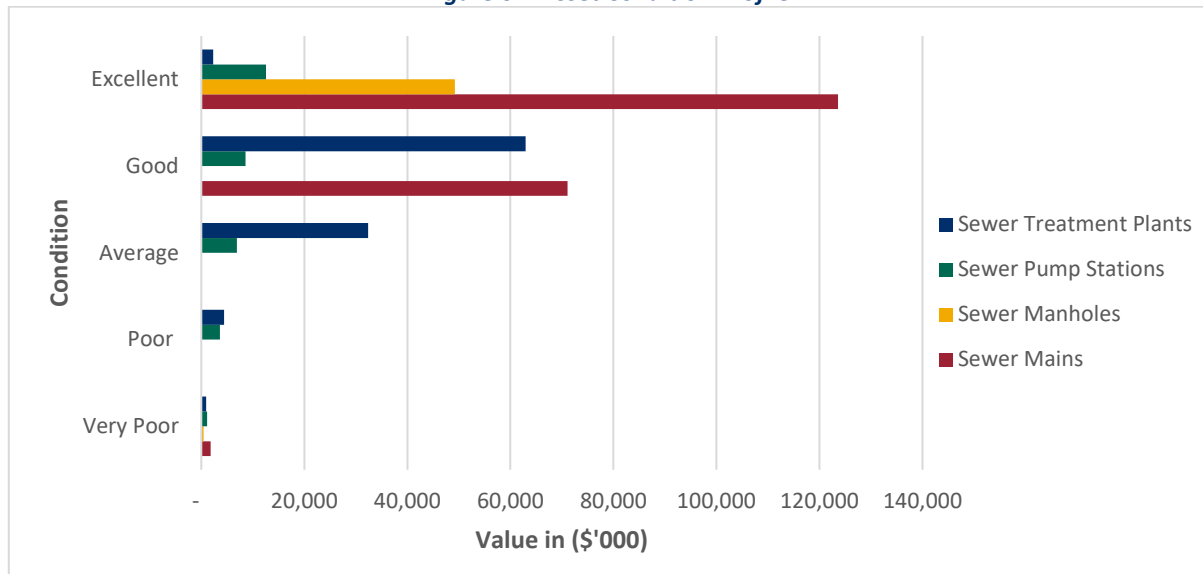
<sup>4</sup> IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

**Table 15 - Condition Grading System**

Condition Grading	Description of Condition
1	<b>Excellent:</b> free of defects, only planned and/or routine maintenance required
2	<b>Good:</b> minor defects, increasing maintenance required plus planned maintenance
3	<b>Average:</b> defects requiring regular and/or significant maintenance to reinstate service
4	<b>Poor:</b> significant defects, higher order cost intervention likely
5	<b>Very Poor:</b> physically unsound and/or beyond rehabilitation, immediate action required

The condition profile of our assets is shown below.

**Figure 6 - Asset Condition Profile**



The overall condition of the sewer network is satisfactory, based on the latest condition data.

## 5.2 Operations and Maintenance Plan

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

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include jetting and tree rout removal.

The target maintenance activities associated with sewer assets included in this AM plan are included in the table below. The table also includes the annual projected maintenance cost (in 2021 dollars) and compares it to the 2021/22 maintenance budgets as per the Long Term Financial Plan as at November 2021.

The trend in maintenance budgets are shown below.

**Table 16 - Maintenance Budget Trends**

Year	Maintenance Budget \$
2019/20 Actual Maintenance	\$3,809,125
2020/21 Actual Maintenance	\$3,506,746
2021/22 Budgeted Maintenance	\$4,061,328
2022/23 Budgeted Maintenance	\$4,256,618

Maintenance budget levels are considered to be adequate to meet service levels.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement and the target intervention levels below.

**Table 17 - Intervention Levels**

Failure	Details	Response Times
<b>System Faults</b>	<b>Priority 1:</b> A major failure to contain sewage within the sewerage system or any problem affecting a critical user (i.e. to sensitive areas) at a critical time	1 hour (working hours) or 2 hours (after hours)
	<b>Priority 2:</b> A minor failure to contain sewage within the sewerage system or any problem affecting a critical user at a non-critical time	3 hours (working hours) or 4 hours (after hours)
	<b>Priority 3:</b> A minor failure to contain sewage affecting a single property or as bad odours.	Next working day
<b>Customer Complaints</b>	Minor operation problems, complaint or enquiry that can be dealt with at a time mutually convenient to both the customer and council.	Respond within 10 working days (written complaints or inquiries) Respond within 2 working days (personal complaints or inquiries)

### 5.3 Asset hierarchy

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

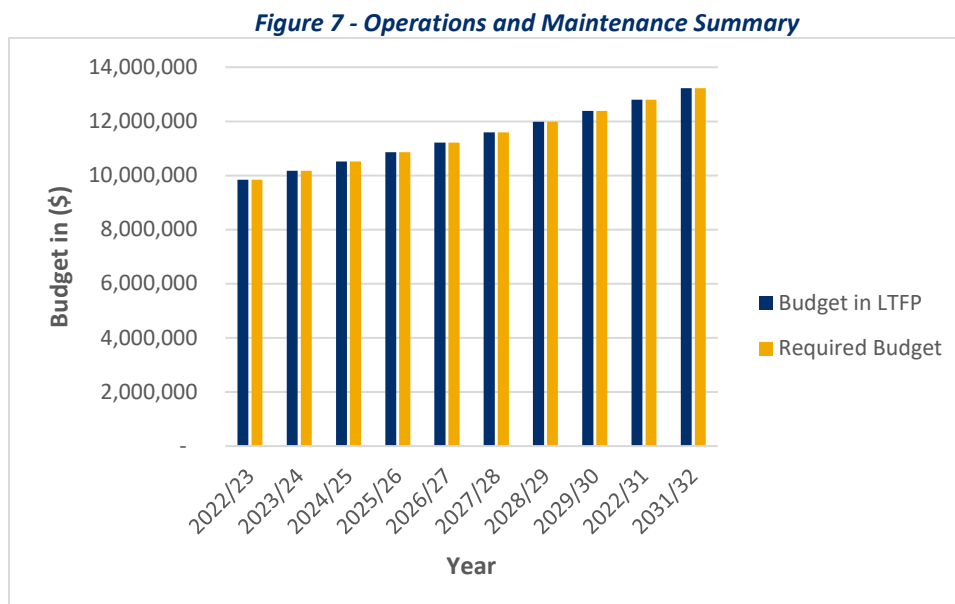
The service hierarchy is shown below.

**Table 18 - Asset Service Hierarchy**

Service Hierarchy	Service Level Objective
Sewer Mains	Assets are not componentised
Sewer Manholes	Assets are not componentised
Sewer Pump Stations	Assets are componentised into – <ul style="list-style-type: none"> <li>- Civil</li> <li>- Electrical</li> <li>- Mechanical</li> <li>- Pipework and Valves</li> <li>- Site Services</li> </ul>
Sewer Treatment Plants	Not currently componentised

### 5.3.1 Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figure 7 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.



The current maintenance budget is sufficient to achieve the required maintenance activities.

## 5.4 Renewal Plan

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

Assets requiring renewal are identified based on an estimate of the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown below. Asset useful lives were last reviewed in 2017 during the revaluation of the sewerage network.

**Table 19 - Useful Lives of Assets**

Asset (Sub)Category	Useful life
Sewer Mains	53 to 210 years
Sewer Manholes	33 to 150 years
Sewer Pump Stations	15 to 150 years
Sewer Treatment Plant	7 to 200 years

### 5.4.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a pipe), or



- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a pump station).<sup>5</sup>

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

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.<sup>6</sup>

The ranking criteria used to determine priority of identified renewal proposals is shown below.

**Table 20 - Renewal Priority Ranking Criteria**

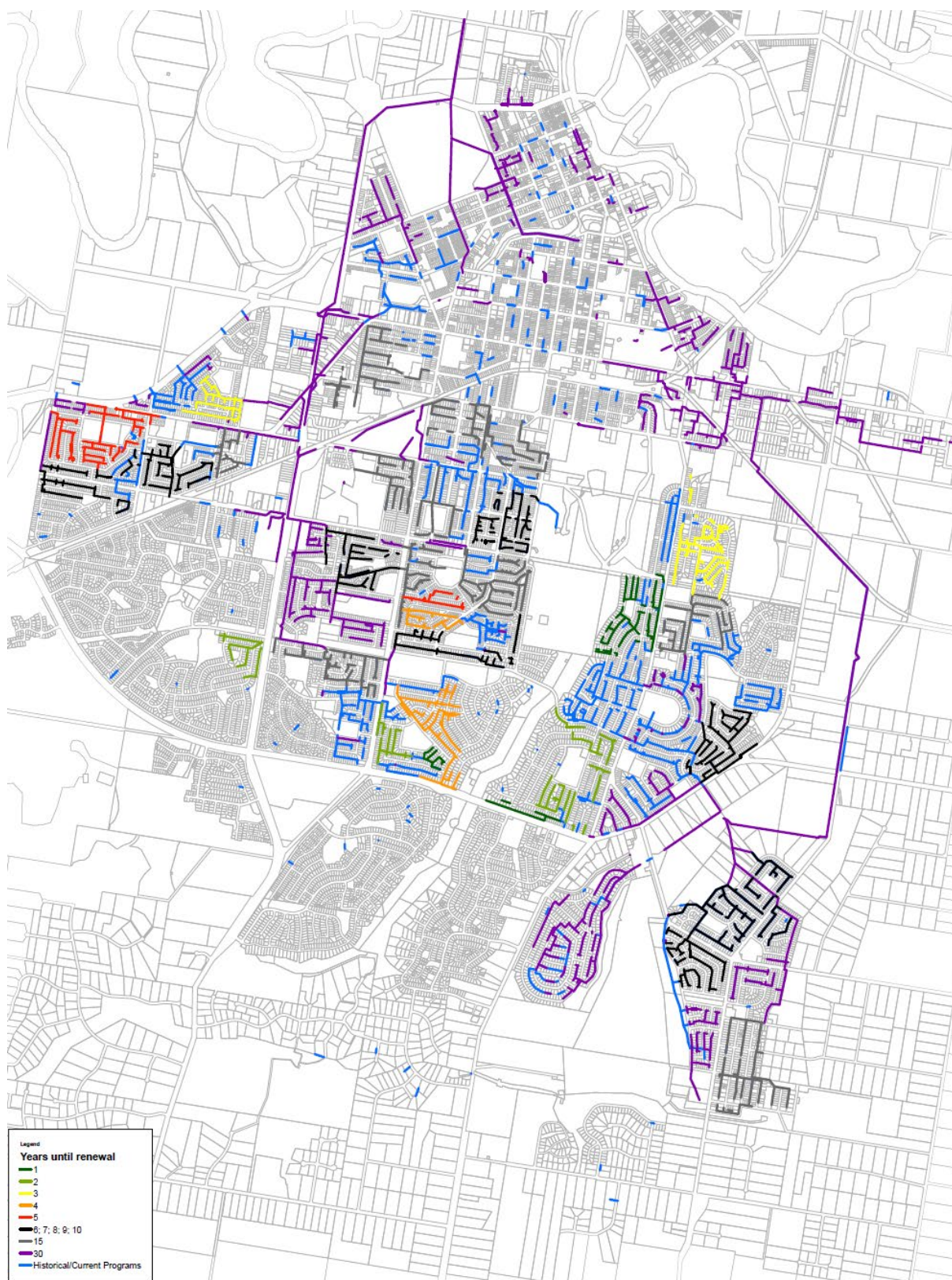
Asset Category	Criteria
Sewer pipes	Material type. Date built considered to check material type. Renewal priority list developed based on number of reported blockages and breakages.
Sewer pump stations – structural elements	Structural condition rating. Capacity rating of the well
Sewer pump stations – pumps	Pump type
Sewer treatment plants – managed by Council	Capacity of infrastructure

Based on this criteria, the following map show a graphical representation of the renewal plan for sewer pipes.

<sup>5</sup> IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

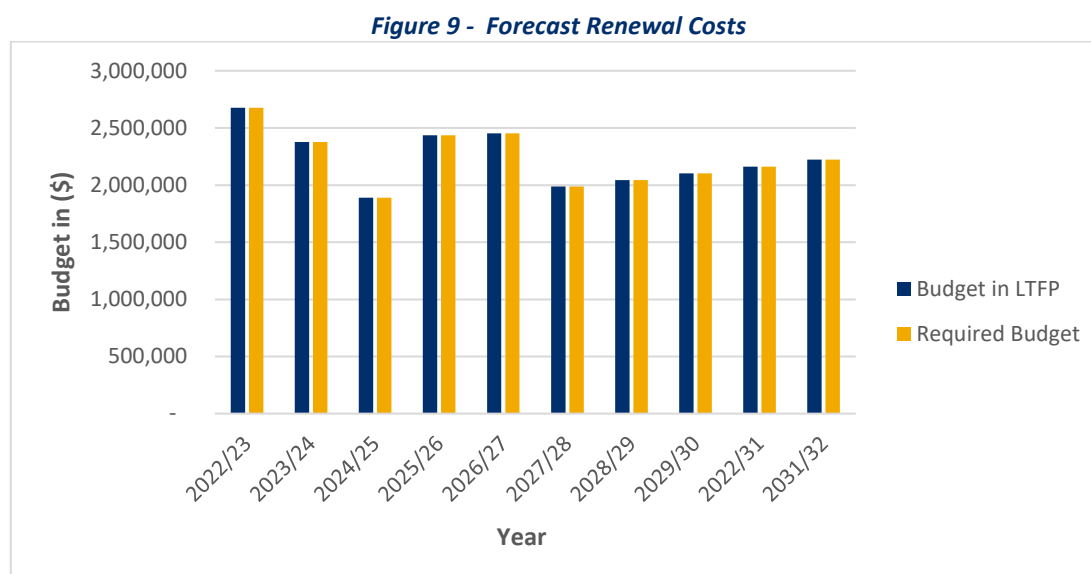
<sup>6</sup> Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

**Figure 8 - Timeframe for Sewer Pipe Renewal as at January 2017**



## 5.5 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 9.



The current renewal budget in the LTFP for sewer assets is considered sufficient to deliver the required renewal of sewer assets.

## 5.6 Acquisition Plan

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

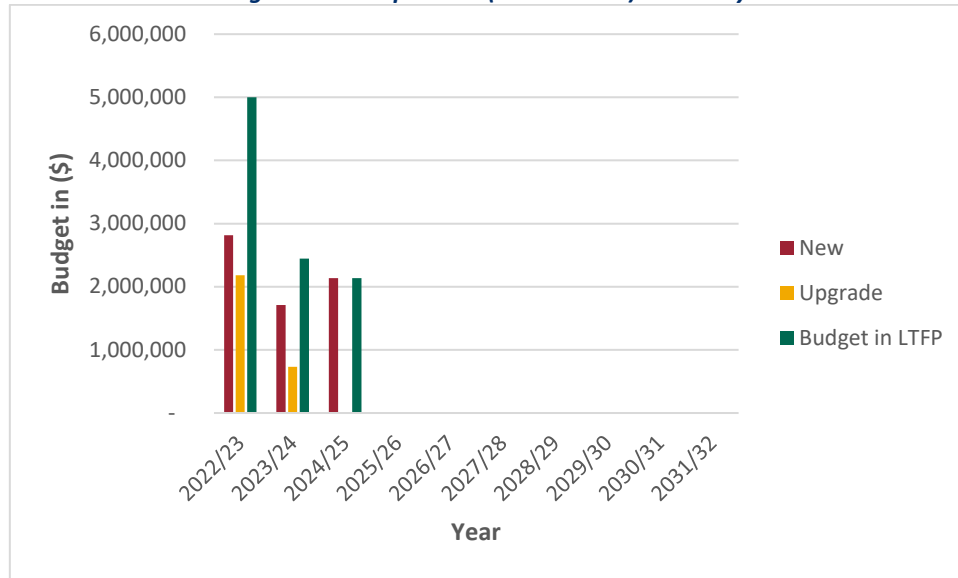
Almost all upgrades and new assets required in the sewer network are needed to support the growth of the city. New and upgraded assets required in the network will be identified in the Sewer Capacity model, currently being developed. The model will identify where there are capacity issues in the network and costed scenarios to provide solutions.

The Development Servicing Plan (DSP) Sewer will be updated based on the Sewer Capacity model to include the identified assets required to support development in the city. The DSP) Sewer will be placed on public exhibition and audited by the NSW Government as required as part of the development.

### 5.6.1 Summary of future asset acquisition costs

The identified new assets required and their funding levels are shown below.

**Figure 10 - Acquisition (Constructed) Summary**



The outcomes of the Sewer Capacity Model are expected to show Council where the sewer network does not have enough capacity to manage the residential growth of the area. It is expected the model will trigger the need for substantial upgrade of the existing sewer network and possible upgrade of existing assets.

## 5.7 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation.

As sewer pipes and pump stations are underground assets there is no plan to dispose of any assets in the network.

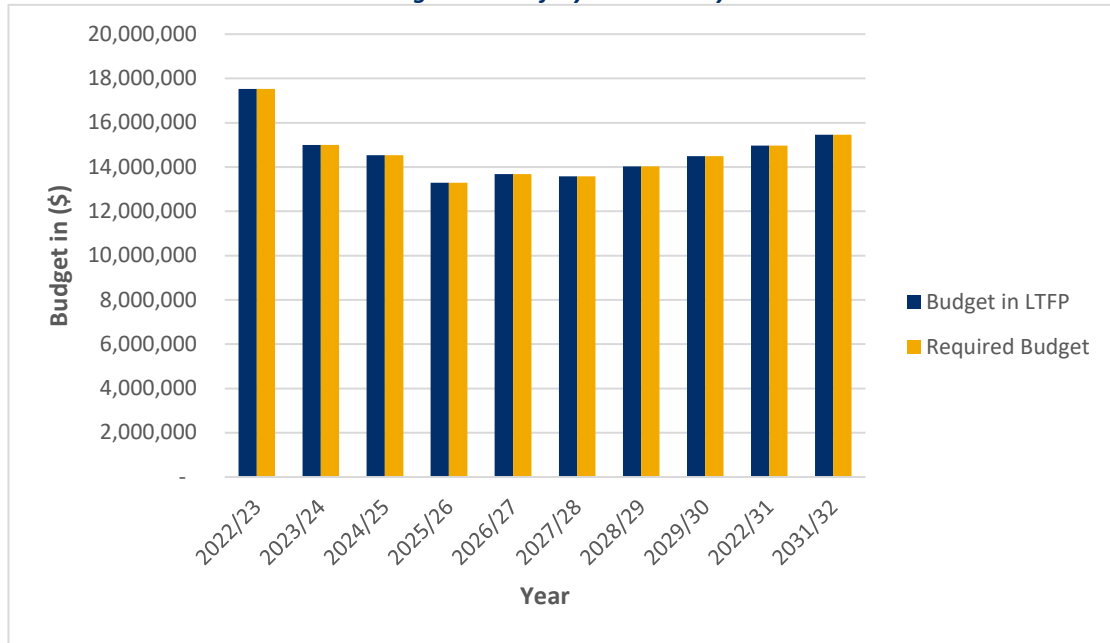
There are no plans to dispose of any sewer assets at the sewer treatment plants.

## 5.8 Summary of asset forecast costs

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

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

**Figure 11 - Lifecycle Summary**



While the current budget is sufficient to fund the identified maintenance, renewal and acquisition of the sewer network, it is expected the Sewer Capacity Model will identify additional new and upgrades required. The costs of this have not been identified at this stage.

## 6.0 RISK MANAGEMENT PLANNING

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

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’<sup>7</sup>.

An assessment of risks<sup>8</sup> associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

### 6.1 Critical Assets

Critical assets are 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.

The sewer network is considered critical.

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

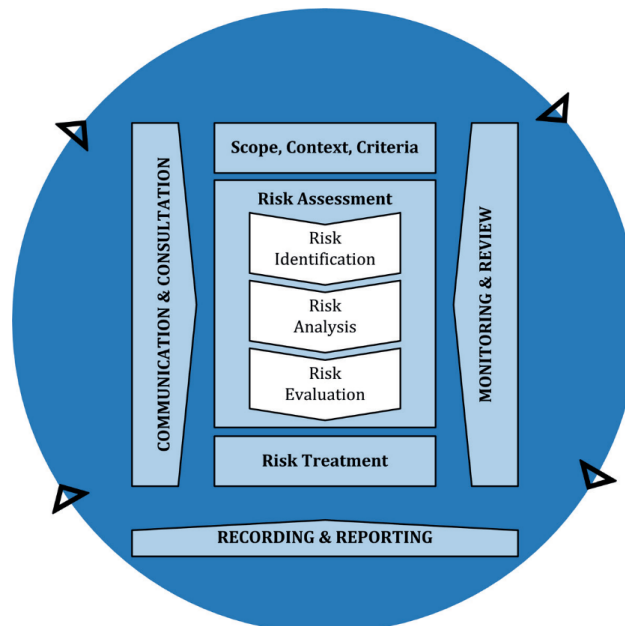
### 6.2 Risk Assessment

The risk management process used is shown in the figure below.

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

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

**Figure 12 - Risk Management Process – Abridged**



<sup>7</sup> ISO 31000:2009, p 2

<sup>8</sup> REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote



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

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

**Table 21 – Risk types**

<b>Risk Types</b>	<b>Description</b>
Financial Risks	Risks the organisation is exposed to that may prevent the achievement of its long term financial sustainability (as outlined in Council's Long Term Financial Plan).
Governance & Compliance Risks	Risks the organisation is exposed to that may not be considered in the best interest of stakeholders, or that the organisation does not behave as a good corporate citizen should, or may leave Council legally exposed.
Reputational Risks	Risks the organisation is exposed to that may lead to widespread and/or sustained damage to Council's reputation.
Environmental Risks	Risks the organisation is exposed to that may prevent it maintaining its commitment to the principles of ecologically sustainable development.
Service Delivery Risks	Risks the organisation is exposed to that may prevent achievement of its core service delivery objectives, including people, knowledge, technology and/or tools and equipment.
Health and Safety	Risks the organisation is exposed to that may compromise the health and safety staff, contractors, volunteers and/or members of the public.

## 7.0 FINANCIAL SUMMARY

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

### 7.1 Financial Sustainability and Projections

#### 7.1.1 Sustainability of service delivery

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

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

##### Asset Renewal Funding Ratio

Asset Renewal Funding Ratio<sup>9</sup> is 100%.

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 100% of the funds required for the optimal renewal of assets.

##### Medium term – 10 year financial planning period

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

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance, acquisition and renewal costs over the 10 year planning period is \$14,654,246 on average per year.

The proposed (budget) operations, maintenance, acquisitions and renewal funding is \$14,654,246 on average per year. This indicates that 100% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget.

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

#### 7.1.2 Forecast Costs (outlays) for the Long Term Financial Plan

Table 22 shows the forecast costs (outlays) required for consideration in the 10 year Long Term Financial Plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the Long Term Financial Plan.

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



**Table 22 - Forecast Costs (Outlays) for the Long term Financial Plan**

Year	Acquisition	Operation	Maintenance	Renewal
2022/23	\$4,998,826	\$5,591,880	\$4,256,318	\$2,676,916
2023/24	\$2,443,480	\$5,781,902	\$4,392,186	\$2,377,206
2024/25	\$2,138,412	\$5,979,420	\$4,531,941	\$1,890,787
2025/26	\$0	\$6,183,624	\$4,674,472	\$2,435,265
2026/27	\$0	\$6,397,945	\$4,822,771	\$2,453,321
2027/28	\$0	\$6,620,954	\$4,976,223	\$1,988,428
2028/29	\$0	\$6,848,420	\$5,132,669	\$2,043,551
2029/30	\$0	\$7,089,099	\$5,296,603	\$2,101,878
2030/31	\$0	\$7,339,821	\$5,460,769	\$2,161,908
2031/32	\$0	\$7,601,111	\$5,630,660	\$2,223,695
<b>Totals</b>	<b>\$9,580,718</b>	<b>\$65,434,178</b>	<b>\$49,174,612</b>	<b>\$22,352,955</b>

## 7.2 Funding Strategy

The proposed funding for assets is outlined in Council's budget and Long Term Financial Plan.

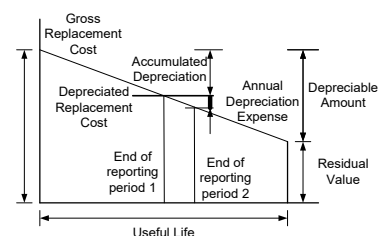
The financial strategy of the entity determines how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

## 7.3 Valuation Forecasts

### 7.3.1 Asset valuations

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at fair value.

Replacement Cost (Current/Gross)	\$382,101,098
Depreciable Amount	\$382,101,098
Depreciated Replacement Cost <sup>10</sup>	\$277,741,135
Annual Depreciation	\$5,360,886



### 7.3.2 Valuation forecast

Asset values are forecast to increase as additional assets are added to Council's asset base.

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

<sup>10</sup> Also reported as Written Down Value, Carrying or Net Book Value.

## 7.4 Key Assumptions Made in Financial Forecasts

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

Key assumptions made in this AM Plan are:

- The services provided by assets are consumed at a constant rate over the pre-defined standard useful lives recorded in council's asset management system for each of the asset sub-categories.
- Present service levels will remain constant for the life of the plan.
- Present levels of expenditure (and the relative distribution of planned and reactive maintenance, and capital renewals & new/upgrades) will remain constant for the life of the plan.

## 7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale<sup>11</sup> in accordance with Table 23.

**Table 23 - Data Confidence Grading System**

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$
B. High	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. Medium	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. Low	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. Very Low	None or very little data held.

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

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<sup>11</sup> IPWEA, 2015, IIMM, Table 2.4.6, p 2|71.

## 8.0 PLAN IMPROVEMENT AND MONITORING

### 8.1 Status of Asset Management Practices

#### 8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data taken from the Assetic asset management system - myData and Technology One – Finance1.

#### 8.1.2 Asset management data sources

The source of the asset data is the Assetic asset management system, myData. Outputs used from myData include opening and closing balances, depreciation and capitalisation/disposal and are used to inform Council's financial statements.

### 8.2 Improvement Plan

The following shows the overall strategic improvement plan for the Asset Management Framework and specific improvements associated with this Plan.

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

**Table 24 - Strategic Asset Management Improvement Plan**

Themes	Purpose	Current Status March 2022
Establish Program Governance and Management	Establish a program governance/ management structure and project implementation team so that roles and responsibilities for the improvement program are clearly understood by stakeholders.	Council has created two newly separate Directorates to support the implementation of this Improvement Program.
Carryover Tasks – from Dec 2019 review	Continuation of incomplete tasks from the 2019 review scope of works, to set the foundation for remaining improvements.	The Projects & Strategy Directorate is accountable for the Strategic Management Systems of Assets.
Asset Management System	Review / update / development of an asset management Strategy, Plans, Processes, Procedures and associated decision logic to support the asset management objectives and strategic intent in the WWCC Asset Management Policy.	Clear documentation of accountabilities strategic, long term and daily asset activities.
Asset Management Technology	Implementation of short-term and long-term information system solutions to support improved asset management.	Review and improve the integration between FinanceOne, Assetic MyData, ESRI ArcInfo and supporting reports from disparate sources across Council including Request Management System, daily cleaner and security reports and so on.
Asset Management Capability	Upskilling the organisations so that WWCC staff have the capability to plan implement and monitor whole of life asset management.	Regional and Rural Councils are challenged to recruit ongoing adequately skilled Engineers and Project Managers to implement this Improvement Program. Innovative means to attract suitably skilled resources and/or other models to deliver this ongoing program must be considered.

**Table 25 - Asset Specific Improvement Plan**

Task	Task	Responsibility	Resources Required	Timeline
1	Identify growth projections and changes in demands on assets	Manager City Strategy	Residential Strategy	Short term
2	Develop valuation forecasts for sewer assets	Manager Finance	Data	Short term
3	Capture the data for sewer assets in Council's asset register myData	Manager Project Operations	Staff time	Short term
4	Review resourcing of pump station maintenance currently 2 FTE clean 43 stations almost daily	Manager Operations	Staff time	Short term
5	Review pump station renewal listed in the Long Term Financial Plan.	Manager Project Operations	Staff time	Short term
6	Develop a condition rating regime for pump stations	Manager Project Operations	Staff time	Short term
7	Capture data on pump station pumps and develop a renewal plan based on the data	Manager Project Operations	Staff time	Short term
8	Link the asset register to the financial system – maintenance funding is currently used to fund pump replacement which should be a capital item	Manager Project Operations and Manager Finance	Staff time	Short term
9	Further risk assessment of critical asset categories (pipes, pump stations and treatment plants) to reflect high, medium and low risk assets	Manager Project Operations and Manager Operations	Staff time	Short term
10	Develop a prioritised renewal list for sewer pipe relining	Manager Operations	Staff time	Short term

### 8.3 Monitoring and Review Procedures

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

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

The AM Plan has a maximum life of 4 years and is due for complete revision and update within 9 months of each Council election.

#### Performance Measures

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

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the Long Term Financial Plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

## 9.0 REFERENCES

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## 10.0 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 noncritical 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