Waste Water

Asset Management Plan

Lismore City Council

WASTEWATER – ASSET MANAGEMENT PLAN

This asset management plan covers the portfolio of Wastewater assets that deliver a wide range of services to the Lismore City Council community.

This asset management plan includes all of Council's treatment, water reuse, pumping and reticulation infrastructure.

As the owner and operator of Wastewater assets, Council has a responsibility for a number of functions including:

- maintenance
- renewal and refurbishment
- upgrades and improvements
- disposal of assets.

The planning of these functions is outlined in this asset management plan.

1.1 PURPOSE OF THIS PLAN

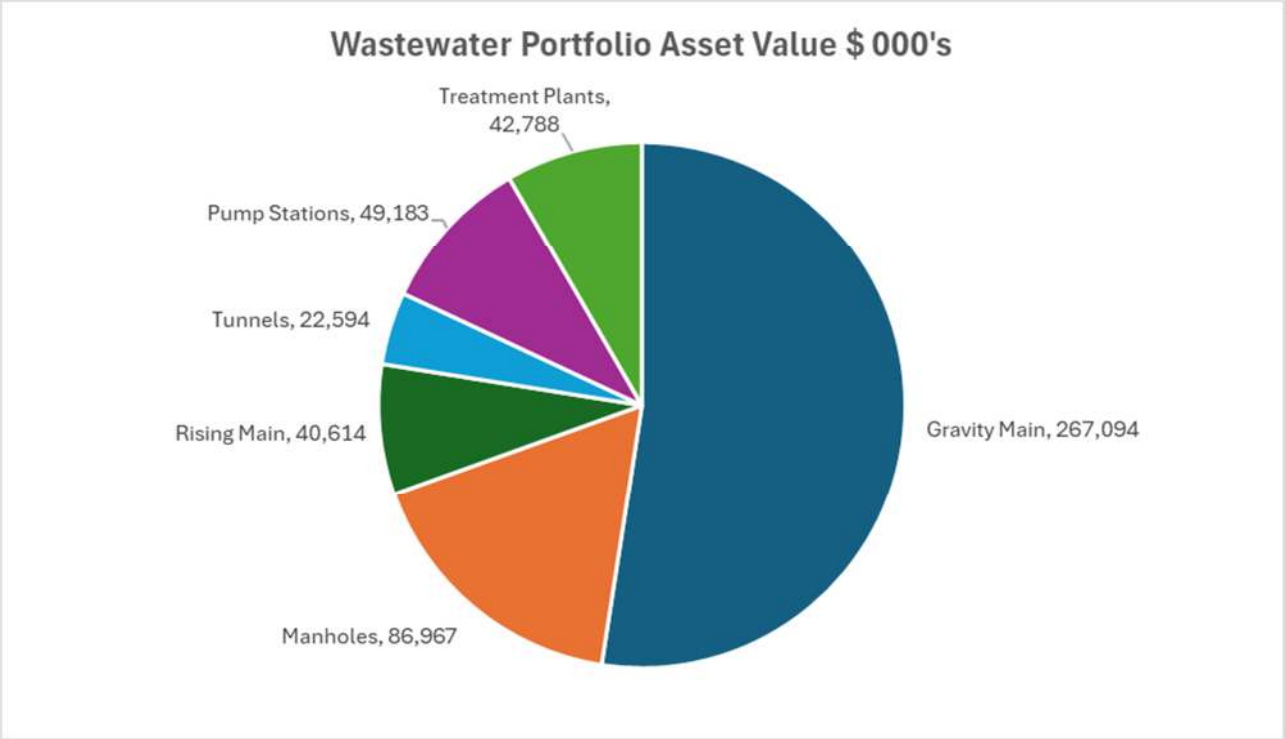
The purpose of this asset management plan is to develop a strategic framework for the maintenance and renewal of Wastewater assets and to provide an agreed level of service in the most effective manner.

This plan includes the following scope of management:

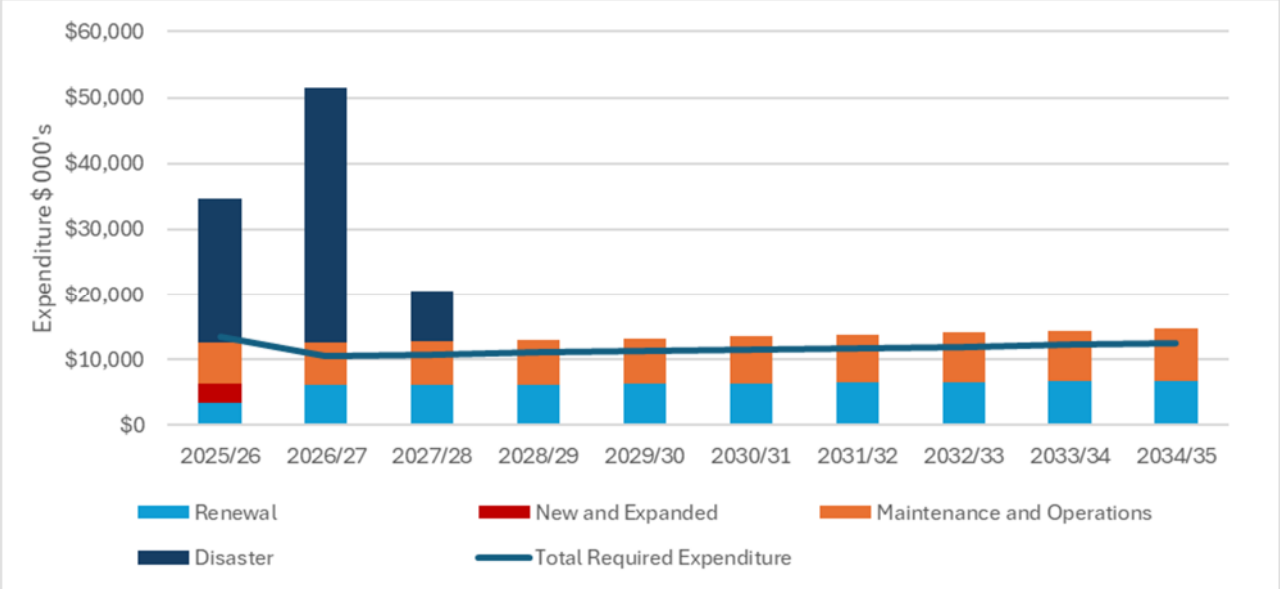
- asset inventory, values and condition
- asset based levels of service
- demand and service management
- risk management
- development of the long-term financial plan (LTFP) for the maintenance and renewal of Wastewater assets.

1.2 PORTFOLIO OVERVIEW

Figure 1 Wastewater Portfolio Overview



Infrastructure Ratios	Budget 2025/26	Estimated 2035/36	Funding Gap $ 000's 2025/26	
Infrastructure Renewals ratio Benchmark 100% (Includes disaster funding).	436.33%	98.21%	Yr 1 Yr 5 Average Yr 10 Average	$19,598 $13,383 $6,662
Infrastructure Maintenance Ratio Benchmark 100%	136.93%	142.04%	Yr 1 Yr 5 Average Yr 10 Average	$1,068 $1,121 $1,190
Total Funding Gap			Yr 1 Yr 5 Average Yr 10 Average	$20,666 $14,504 $7,851



1.3 ASSET CLASS SUMMARY

Council's wastewater portfolio has been significantly impacted by the 2022 flood events with $24m worth of infrastructure impaired during the event including Council's recently built East Lismore Treatment plant. While long term CAPEX requirements were mapped out in Council's 30-year Water and Wastewater capital works program, the plan maintains the status quo and does not address the current backlog in the portfolio. Council will need to review whether the current provision of infrastructure meets the needs of the community, if there is a relocation of homes and businesses and to ensure that resilience is the key factor in the replacement of the impaired assets.

1.4 ASSET INVENTORY, VALUES AND CONDITION

The assets covered by this Asset Management Plan are shown below:

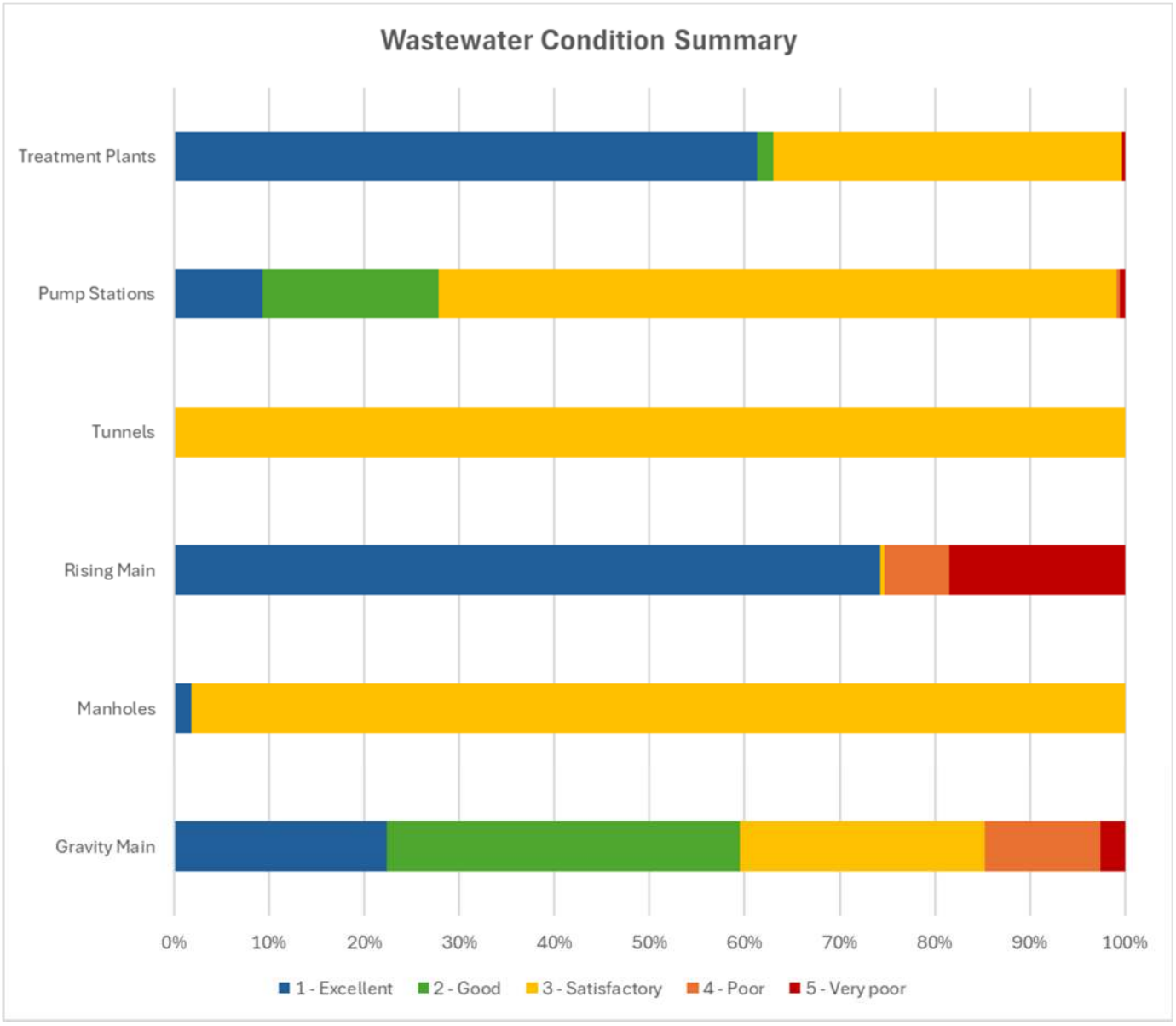
Table 1 Wastewater Inventory

Asset Class	Asset	Unit of Measure	Units
Wastewater	Gravity Mains	KM	332
Wastewater	Rising Mains	KM	46
Wastewater	Sewer Tunnels	LM	1,098
Wastewater	Pump Stations	No.	35
Wastewater	Treatment Plants	No.	3

Table 2 Wastewater Portfolio Valuation

Asset	Gross Replacement Cost $000's	Written Down Value $000's	Annual Depreciation $000's	Condition 1	Condition 2	Condition 3	Condition 4	Condition 5
Wastewater	$509,245	$313,706	-$5,239	24.03%	21.39%	44.73%	6.92%	2.93%

*Figure 2 Wastewater Condition Summary**



**A significant portion of Council's Active Wastewater assets were severely impaired during the 2022 flood event. These assets are likely to be replaced under Disaster Recovery Grant funding and as such are overstating the long-term backlog of the wastewater portfolio. As further details on the replacement of these assets is determined, council will update the AMP accordingly.*

1.5 ROLES AND RESPONSIBILITIES

Council has adopted the following roles and responsibilities matrix for its Wastewater assets.

Table 3 Wastewater Roles and Responsibilities

Position	Role	Asset Class	Responsibilities	Functions
Manager Assets	Asset Owner	Wastewater Active Wastewater Passive	This position takes ownership responsibility for the management of assets and is usually responsible for policy and over all asset strategy	Establish long term policy and strategy Establish existing demand for assets Establish future demand for assets (type and standard) Establish long term community expectation Implement policy and strategy for existing assets Establish community asset service level Ensure integration of asset management into Council's community, delivery and operational plans & resourcing Strategy Maintain and develop asset systems and reporting Ensure asset accounting is accurate and maintained, and asset valuation, Develop capital works prioritisation Develop capital works program Liaison with the organisation as a whole on asset matters
Asset Engineer	Asset Custodian	Wastewater Active Wastewater Passive	This position is the technical expert and has responsibility for collecting and maintaining asset data, determining works programs and maintenance strategies etc.	Develop and oversee capital works and maintenance program Handover and documentation Control budgets Develop asset plans Asset condition rating Risk management Data custodian – Hierarchy, level of detail Recommendation of asset disposal and renewal 4yr program
Manager Water and Wastewater	Asset Delivery – OPEX Service Delivery – Operations	Wastewater Active Wastewater Passive	Responsible for the day-to-day maintenance, operations and services delivered by assets	Controls asset use, in line with policy Deliver programmed and reactive maintenance, internal/external Manage all operations and service delivery functions Manage service user expectations Deliver adopted levels of service
Capital Delivery Engineer	Asset Delivery CAPEX	Wastewater Active Wastewater Passive	Responsible for the day-to-day delivery of capital works.	Controls asset use, in line with policy Deliver and/or manage capital works

1.6 ASSET BASED LEVELS OF SERVICE

Table 4 Wastewater Levels of Service

Key performance indicator	Level of service	Performance measurement process	Target performance	Current performance
Accessibility	Operation of reliable sewerage network in an environmentally responsible manner	Network performance data and customer complaints.	Wastewater overflows per 100km of main in line with IPART accountability measures.	
			Wastewater overflows for 100km of main reported to the environmental regulator in line with IPART accountability measures.	
			Wastewater main breaks and chokes per 100km if main in line with IPART accountability measures.	
Quality/condition	Effective treatment and disposal of sewage	Regulatory reporting	Compliance with Environmental Protection Licence concentration and load limits.	
Reliability/responsiveness	Percent compliance with council's documented response time	CRMS data	90%.	
Community satisfaction and involvement	Customers are happy with the services provided	Community satisfaction survey	The net differential between importance and performance is positive.	
Affordability	The services are affordable and managed at lowest possible cost for required level of service	Review of service agreements and benchmark with other councils	Total operating costs equal or less than the industry average benchmark.	
Sustainability	Long term plans are prepared	Life cycle approach to managing assets	Achieve compliance with 2022 Department of Planning and Environment strategic planning assurance framework.	
	Assets meet financial sustainability ratios	Consumption ratio	Between 50% and 75%	
	Assets meet financial sustainability ratios	Renewal funding ratio	Between 90% and 110%	
	Assets meet financial sustainability ratios	Long term funding ratio	Between 95% and 105%	
Health and safety	A safe working environment provided for people involved in providing the service	Health and Safety - reported incidents	Zero personal injury incidents associated with system operation and maintenance	
			Health and safety manual and contract specification are 100% compliant with WHS act.	

1.7 FUTURE DEMAND

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

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets, and management actions including reducing demand for the service, reducing the level of service (allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset condition.

Currently there is significant uncertainty around the way forward following the devastating 2022 floods, with guidance being sought around any 'planned retreat' and potential relocation of households and infrastructure. In the short term, Council's new and upgraded infrastructure will address the damage sustained during the flood events as well as focus on replacing assets with resilient infrastructure where appropriate. As further guidance and a better understanding of expected growth in the LGA is attained, Council will incorporate demand strategies to address the key growth drivers in the next iteration of Council's asset management plans.

Table 5: Future demand

Demand factor	Impact on assets
Internal Migration	Council will need to regularly assess whether the current portfolios are fit for purpose and have the functionality and capacity to provide the current range of services and any additional services required into the future.
Increasing costs	Will be a requirement to continue to maximise service delivery within the funding limitations, particularly with grant funding delivering 'like for like' replacement for assets damaged during the 2022 flood events. It is likely that these assets will have to be 'upgraded' to deliver a resilient level of service.
Environment and climate	It is likely that the frequency, severity and intensity of natural disaster events will increase, and council will need to plan its infrastructure accordingly.

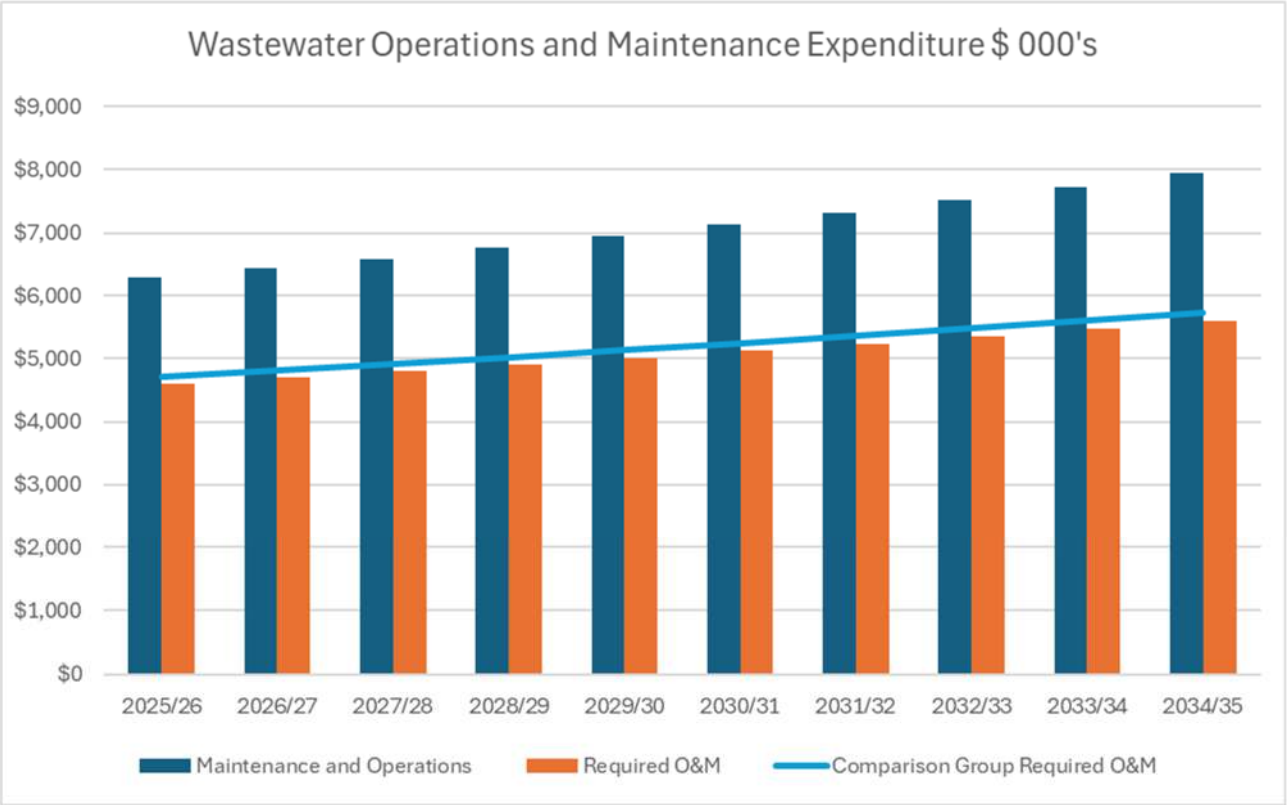
1.8 LIFECYCLE – MAINTENANCE STRATEGY

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 functioning but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life. Typically, this can be categorised as:

- Operations - regular activities to provide services such as public health, safety and amenity.
- Reactive Maintenance - work on breakdowns, failures and/or damaged assets that are not operating or are about to fail on an ad hoc basis.
- Planned Proactive and Cyclical Maintenance – works identified through scheduled maintenance/asset inspections whereby assets are not operating as designed or to 100% capacity.

Council currently has no documented maintenance strategy for its reticulation assets with maintenance work being highly reactive to identified faults and customer complaints. Council's active asset network is, however, managed in a highly proactive manner with significant scheduled and planned works programmed in Council's maintenance management system.

Figure 3 OPEX Projections

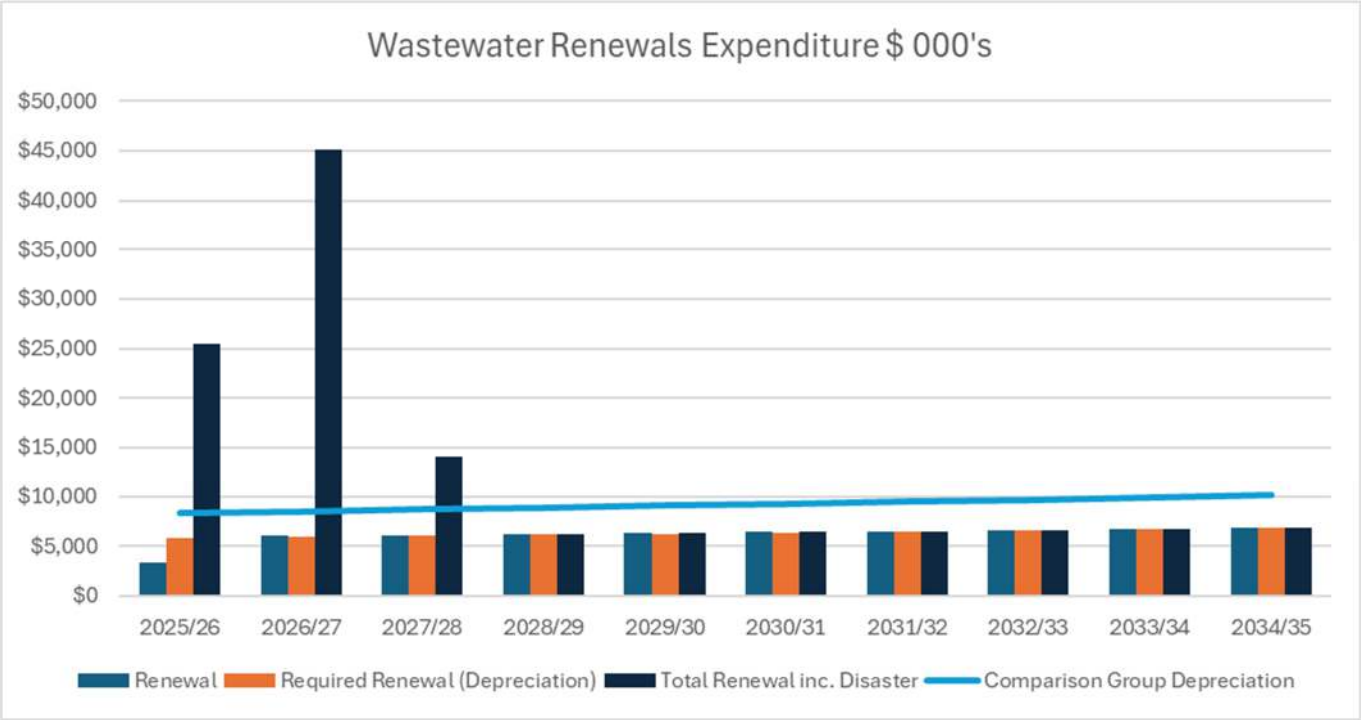


Council compared its budgeted/actual OPEX expenditure for its Wastewater portfolio against similarly categorised councils by the Office of Local Government. Due to the current high level of backlog and poor condition of the portfolio, Council has budgeted operations and maintenance expenditure above the level of spend of comparative Councils. As council finalises it's 30-year plan for its water and sewer portfolios, addressing the backlog and optimising life of assets by prioritising asset renewals over reactive maintenance will be a priority in future iterations of this asset plan.

1.9 LIFECYCLE – RENEWAL/REPLACEMENT STRATEGY

Council's asset renewal strategy is documented in the Water and Wastewater strategic business plan. The 30-year capital program considers the expected future growth, assets in poor condition as well as whether there needs to be changes in levels of service provided.

Figure 4 CAPEX Projections



Council compared its budgeted/actual CAPEX expenditure for its wastewater portfolio against its annual depreciation requirements. This showed that Council is currently meeting the funding to maintain the existing condition of the network. However, it should be noted that wastewater infrastructure has extended economic lives and Council's capital program spans 30 years with major infrastructure replacement planned outside the 10-year AMP window.

During the flood event, significant damage was sustained by the East Lismore Wastewater Treatment Plant which is anticipated to be renewed through flood recovery funding. Preliminary renewal and grant funding estimates have been incorporated into these iterations of this asset management plan. As further details become available to Council they will be incorporated into future iterations.

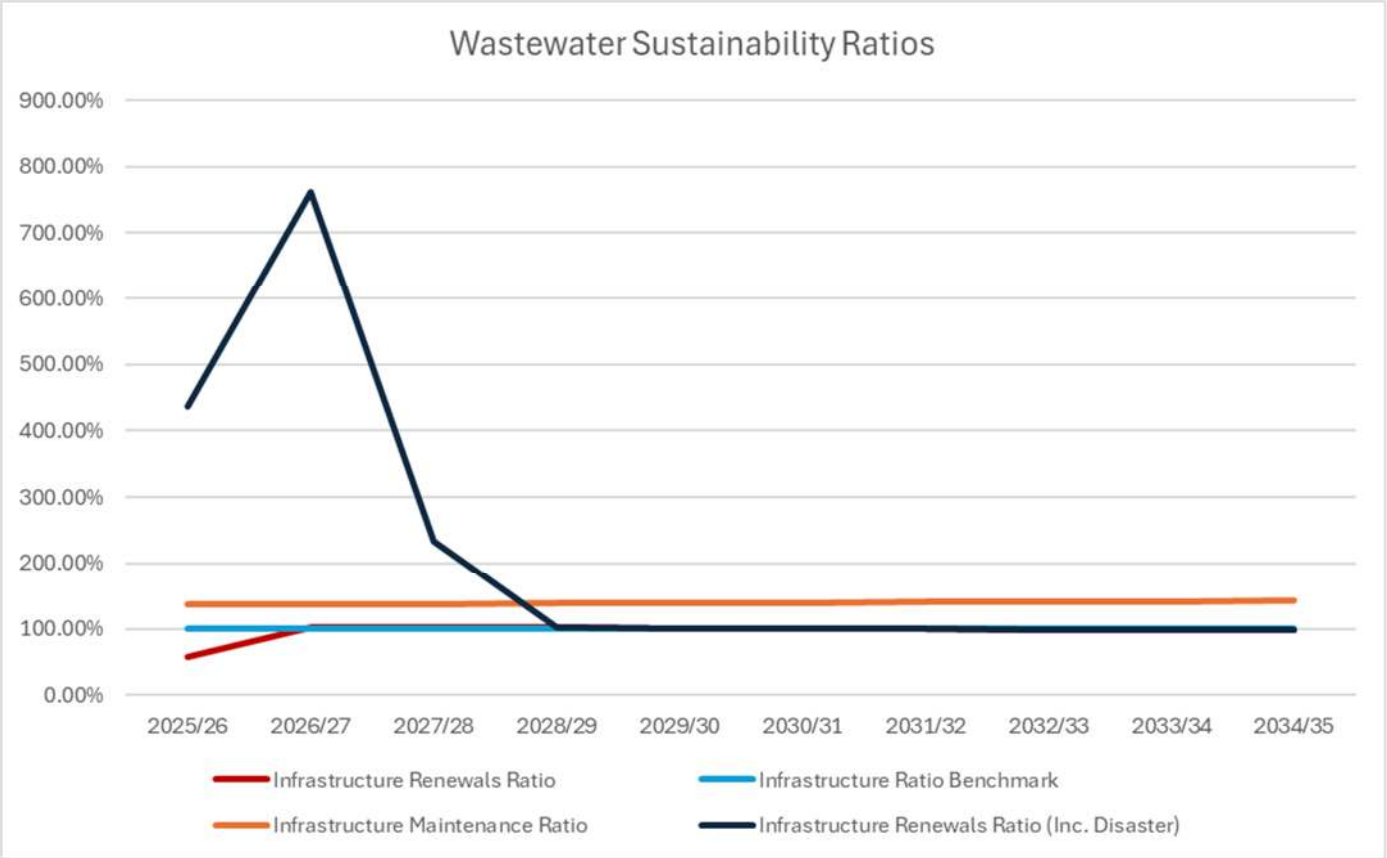
Further, Council also compared its depreciation against similarly categorised councils by the OLG which showed that Council depreciates its assets at a rate lower than that of the comparison group.

1.10 EXPENDITURE PROJECTIONS

Table 6 Wastewater Expenditure Projections

Budget Gap by Asset Group ($,000s)			2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35
Wastewater	**Actual**											
		Renewal	$3,370	$6,059	$6,116	$6,204	$6,293	$6,382	$6,472	$6,562	$6,667	$6,773
		Disaster Funding	$22,055	$39,011	$7,920	$0	$0	$0	$0	$0	$0	$0
		New and Expanded Assets	$3,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Maintenance and Operations	$6,292	$6,441	$6,593	$6,769	$6,951	$7,137	$7,328	$7,525	$7,729	$7,939
		Total Expenditure	**$34,718**	**$51,510**	**$20,630**	**$12,974**	**$13,244**	**$13,519**	**$13,800**	**$14,088**	**$14,396**	**$14,712**
	Required											
		Required Renewal (Depreciation)	$5,827	$5,915	$6,003	$6,123	$6,246	$6,371	$6,498	$6,628	$6,761	$6,896
		New and Expanded Assets	$3,000	$0	$0	$0	$0	$0	$0	$0	$0	$0
		Required O&M	$4,595	$4,696	$4,799	$4,905	$5,013	$5,123	$5,236	$5,351	$5,469	$5,590
		Total	**$13,422**	**$10,611**	**$10,802**	**$11,028**	**$11,259**	**$11,494**	**$11,734**	**$11,979**	**$12,230**	**$12,486**
		OPEX Balance (GAP)	$1,697	$1,745	$1,794	$1,864	$1,938	$2,014	$2,092	$2,174	$2,260	$2,350
		RENEWAL Balance (GAP)	$19,598	$39,155	$8,033	$81	$47	$12	-$26	-$66	-$94	-$123
		Overall (GAP)	**$21,295**	**$40,900**	**$9,827**	**$1,945**	**$1,985**	**$2,025**	**$2,066**	**$2,109**	**$2,166**	**$2,226**
		Overall (GAP) *excluding Disaster Funding*	-$760	$1,889	$1,908	$1,945	$1,985	$2,025	$2,066	$2,109	$2,166	$2,226
		Comparison Group – Depreciation	$8,290	$8,472	$8,658	$8,849	$9,044	$9,243	$9,446	$9,654	$9,866	$10,083
		Comparison Group - Total	$12,995	$13,281	$13,573	$13,872	$14,177	$14,489	$14,807	$15,133	$15,466	$15,806
		Comparison Overall (GAP)	**$21,723**	**$38,229**	**$7,057**	**-$898**	**-$934**	**-$970**	**-$1,007**	**-$1,045**	**-$1,070**	**-$1,094**

Figure 5 Wastewater Sustainability Ratios



1.11 CRITICAL ASSETS

Critical assets are those assets that are likely to result in a more significant financial, environmental and social cost in terms of impact on organisational objectives. By identifying critical assets and critical failure modes, organisations can target and refine investigative activities, maintenance plans and capital expenditure plans at critical areas. Council is currently in the process of assessing and documenting the criticality of its Wastewater portfolio.

The following attributes are currently being considered as part of this analysis:

Table 7 Criticality Criteria

Criteria	High	Medium	Low
Reticulation			
Rising main	Yes		
Carrier	Yes		
Material	VC/AS	Concrete / PVC	
Flood zone			Yes
Water Way	Line runs parallel to waterway	Line runs perpendicular to waterway	
Size	> 300mm Diameter	200 - 300mm Diameter	150mm diameter
Pump Stations			
Storage Capacity	Small	Medium	Large
Backup pump and power	No	Accessible	Yes
Catchment	Large	Medium	Small
Flood zone	Yes		

1.12 RISK MANAGEMENT

Council utilises a corporate risk framework which aligns with ISO 31000:2018. The framework is currently under review and development and highlights the strategic risks which impact Council's asset portfolio.

Table 8 Risk Framework

Service or Asset at Risk	What can Happen	Risk Rating	Risk Treatment Plan	Residual Risk
Deterioration of wastewater systems	Blockages	High	Continue to improve data by carrying out sample inspections on a regular basis Required renewal of sewer system components is being achieved in the short to medium term Future planning improvements can be made by further documented service level risks and utilisation of these in establishing future renewal priorities	
Deterioration of wastewater systems	Structural failures, increased maintenance	High	Additional analysis of data inventory, assessment of useful lives will be critical to ensure the long-term financial planning for wastewater systems is reliable	
Deterioration of wastewater system asset components	Structural failures, increased maintenance	High	Continue to develop the detail of the costs to manage the sewer system so that a strong case can be made for adequate funding	
Sewer system not available	Public health or environmental issues	High	Monitor works requirements and land use planning requirements so that future needs can be anticipated	

1.13 CONFIDENCE LEVELS

The confidence in the asset data used as a basis for the financial forecasts has been assessed using the following grading system, as outlined below.

Table 9: Asset data confidence scale

Confidence grade	General meaning
Highly reliable	Data based on sound records, procedure, investigations and analysis that is properly documented and recognised as the best method of assessment.
Reliable	Data based on sound records, procedures, investigations and analysis which is properly documented but has minor shortcomings; for example, the data is old, some documentation is missing, and reliance is placed on unconfirmed reports or some extrapolation.
Acceptable	Data based on sound records, procedures, investigations and analysis with some shortcomings and inconsistencies.
Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported or extrapolation from a limited sample.
Very uncertain	Data based on unconfirmed verbal reports and/or cursory inspection and analysis.

A summary of confidence in asset data for all asset classes is detailed in the table below.

Table 10: Asset data confidence rating

Asset class	Inventory	Condition	Age	Overall
Wastewater	Reliable	Acceptable	Reliable	Reliable

The overall confidence level of the plan is considered to be '**reliable**'.

1.14 IMPROVEMENT PLAN

Council is currently in the process of recovering from the 2022 flood and determining the way forward for its community and the LGA, and as such has been operationally focused to ensure the day-to-day functions of councils can get back on track following the impacts of the natural disaster. Future iterations of this asset management plan will focus on a more strategic approach to managing the Wastewater portfolios. The improvement plan below sets out the pathway for council to achieve this.

Table 11 Improvement Plan

Action	Priority	Responsible	Timing
Asset knowledge and data			
Council to develop and document guidelines and adopt a consistent approach for condition and defect assessment.	M	Assets	30/12/23
Council to identify assets with performance/capacity deficiencies to be prioritised for upgrade	M	Assets	30/09/23
Strategic asset planning processes			
Council to review long-term (ten-year) lifecycle costing requirements including CAPEX and OPEX as well as the depreciation and maintenance requirements of Wastewater portfolio.	H	Assets Finance	28/02/24
Council to develop comprehensive maintenance and renewal strategy for the management of its assets.	H	Assets	28/02/24
Council to review current service levels and SLAs and develop outcome-based service levels which align with IP&R Framework.	H	Assets Operations	28/02/24
Council to engage community on developed service levels.	H	Assets	30/09/24
Council to undertake risk and criticality assessment of its asset portfolios. In particular assets likely to be impacted by natural disasters and develop a suite of potential intervention/treatment options to increase asset resilience.	H	Assets Operations	30/09/23
Operations and maintenance work practices			
Council is to implement a maintenance management system that records maintenance activity outputs against defined assets.	H	Internal	30/09/24
Following criticality assessment, Council to develop management strategies for critical infrastructure.	H	Assets Operations	30/09/24
Organisational context			
Council to undertake an in-depth workforce review of asset management roles and responsibilities and ensuring that all functions of asset management are covered and are being carried out.	H	Executive	30/09/23

1.15 CAPITAL WORKS PROGRAM

Refer to 2025/26 Adopted Budget by program.