Asset Management Plan

Community Wastewater Management Systems

District Council of Tumby Bay

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Document Control

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Contents

Tables

Figures

1 Introduction

1.1 Background

The District Council of Tumby Bay is situated to the north of Port Lincoln on the east coast of the Eyre Peninsula, is approximately 630km from Adelaide and covers an area of 261,950 hectares. The district has a population of 2,817 (Census 2021). The township of Tumby Bay is located 45km north of Port Lincoln. Tumby Bay has an approximate population of 1,511 with an increased population during the summer months.

Tumby Bay is the major centre of the Council area, Port Neill a small coastal town 40km northeast of Tumby Bay, Ungarra a small farming town located 28km northwest of Tumby Bay and Lipson a small historic farming town located 12km northwest of Tumby Bay.

Council provides Community Wastewater Management Systems (CWMS) to residential and commercial properties in the townships of Tumby Bay and Port Neill.

In Tumby Bay, the wastewater is collected through a gravity pipe network. Nineteen pump stations are distributed across the township to pump the collected wastewater through rising mains to a wastewater treatment plant. The treated water is then distributed for reuse and irrigates several open space areas via subsurface irrigation assets. A storage lagoon situated to the north of town is also used to store treated wastewater prior to reuse by irrigation at the Golf Course.

In Port Neill, the wastewater is also collected through a gravity pipe network. Two pumping stations pump the wastewater through rising mains to a lagoon situated to the north of town. Wastewater is pumped from the lagoon through a small filtration plant and to the oval for reuse by subsurface irrigation.

An overview of the CMWS infrastructure assets covered by this asset management plan are shown in Table 1.1 and Figure 1.1.

Figure 1.1 Distribution of CWMS Assets by Replacement Value as at 30th June 2023

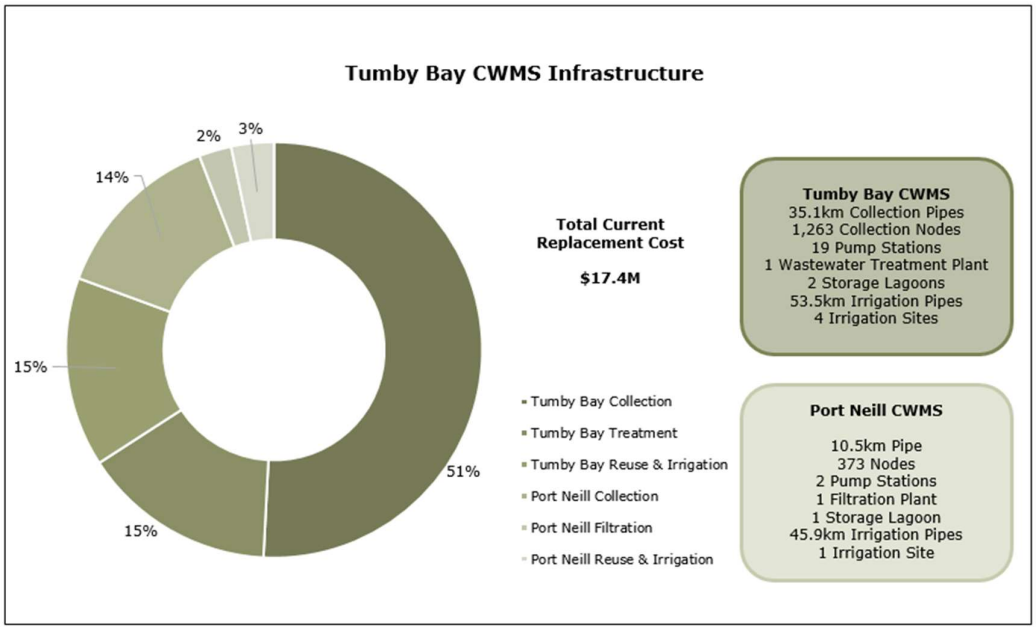


Table 1.1 Assets covered by this plan

Asset Category	Dimension	Replacement Value
Tumby Bay		
Gravity System Assets		**$4,682,215**
Pipe	22.78km	
Nodes	1,263	
Pressure System Assets		**$4,154,253**
Pipes	12.35km	
Pump Station Assets	19	
Wastewater Treatment Assets		**$2,617,180**
Storage Lagoon	2	
Treatment Plant	1	
Reuse and Irrigation Assets		**$2,564,820**
Irrigation Pipes	53.5km	
Irrigation Nodes	648 items	
Tumby Bay Total		**$14,018,468**
Port Neill		
Gravity System Assets		**$1,646,159**
Pipe	8.3km	
Nodes	375 items	
Pressure System Assets		**$711,568**
Pipes	2.3km	
Pump Station Assets	2	
Wastewater Treatment Assets		**$439,314**
Storage Lagoon	1	
Filtration Plant	1	
Reuse and Irrigation Assets		**$575,625**
Irrigation Pipes	45.9km	
Irrigation Nodes	65 items	
Port Neill Total		**$3,372,666**
CWMS Current Replacement Cost		**$17,391,134**

1.2 Plan Framework

This CWMS infrastructure asset management plan is based on the fundamental structure of the IPWEA Asset Management for Small, Rural or Remote Communities template and has been tailored to suit the requirements of The District Council of Tumby Bay.

Council provides services for the community in part through the provision of infrastructure assets. Council have acquired these assets directly through construction by council staff or contractors and by donation of assets constructed by developers and others over time.

The goal in managing infrastructure assets is to meet the required level of service in the most cost-effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach.
- Developing cost-effective management strategies for the long term.
- Providing a defined level of service and monitoring performance.
- Managing risks associated with asset failures.
- Sustainable use of physical resources.

Key elements of the plan are:

- Levels of service – specifies the services and levels of service to be provided by council.
- Future demand - how this will impact on future service delivery and how this is to be met.
- Life cycle management – how the organisation will manage its existing and future assets to provide the required services.
- Risk Management
- Financial summary – what funds are required to provide the required services.
- Plan improvement and monitoring – how the plan will be monitored to ensure it is meeting the organisation's objectives.

Key Stakeholders in the preparation and implementation of this AMP are shown in Table 1.2.

Table 1.2 Key Stakeholders

Key Stakeholder	Role in AMP
Mayor and Elected Members	Represent needs of community. Allocate resources to meet the Council's objectives in providing services while managing risks. Ensure Council is financially sustainable. Adopting AM plan, annual infrastructure budget approvals, support Council staff with plan implementation.
Chief Executive Officer	Endorse the development of asset management plans and provide the resources required to complete this task. Set high level priorities for asset management system development and raise the awareness of this function among staff and contractors. Support the implementation of actions resulting from this plan and lead improvements to asset management strategies and service delivery. Support for an asset management driven budget and LTFP.
Manager – Works and Infrastructure	Lead the development of Asset Management Plans Deliver the annual Capital, operational and Maintenance works plans. Coordination of works team and external contractors Manage Technical Levels of Service
Deputy Chief Executive Officer	Consolidation of the asset register and ensuring the asset valuations are accurate. Development of supporting financial policies such as capitalisation and depreciation.

Key Stakeholder	Role in AMP
	Preparation of asset sustainability and financial reports incorporating asset depreciation in compliance with current accounting standards.
Community (residents, businesses, property owners), Visitors	End users of the Assets Provide feedback on Levels of Service Reporting defects and deficiencies through Councils service request system
Insurers	Mutual agreement with Council to cover risk exposure.
CWMS Operators & Maintenance (Contractors)	Operate, inspect, test, maintain, pump outs, standby for emergency - Managed by Council staff under contract agreement with defined service level.
Department of Health (SA Health)	Issues the approvals for wastewater systems and water reuse.
Environmental Protection Agency (SA EPA)	Issues the license to undertake wastewater treatment and re-use
Essential Services Commission of South Australia (ESCOSA)	Issues Councils Water Industry retail licence
Office of the Technical Regulator (OTR)	Approval of Safety, Reliability, Maintenance and Technical Management Plan (SRMTMP)
Asset Management Consultants	Provide support for the development of asset management plans and the implementation of effective asset management principles within Council. Provide Asset Revaluation Support

2 Levels of Service

Levels of service relate to outcomes the customer receives in terms of quality, quantity, responsiveness and performance as provided by the asset, they are developed in line with Councils strategic and corporate goals and legislative requirements.

2.1 Strategic and Corporate Goals

Council's new strategic plan is under development and will generate a new vision and will set out Council's strategic and corporate objectives for the next 10 years.

The AM Plan is built upon best practices for infrastructure asset management, and it is anticipated that it will deliver outcomes consistent with Council's long-term vision.

2.2 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.

To assist in this process of determining the level of service all CWMS assets are classified using the following hierarchy:

Table 2.1 Asset Service Hierarchy

Service Hierarchy	Service Level Objective
CWMS Pipes	
Property Connections	Pipework from customer septic tank to gravity main
Gravity Mains	Main gravity flow pipes to pump stations
Rising Mains	Main pipes from pump stations to treatment plant and treatment plants to storage lagoons.
CWMS Nodes	
Flushing Points	Access points for back flushing of pipework
Inspection Points	Access for pipe inspection
Other	Air relief valves and vent stacks
CWMS Pump Stations	
Pumps	Transfer wastewater from pump station to treatment plant
Valves Pipes and Fittings	Management of wastewater flow within pump station
Civil	Sumps, tanks and valve pits
Mechanical	Actuators, enclosures, emergency showers etc
Electrical and Instrumentation	Flow meters, level switches and controls
CWMS Treatment, Storage & Re-Use	
Pumps	Transfer wastewater within treatment plant and to storage
Valves Pipes and Fittings	Management of wastewater flow within treatment plant
Civil	Sumps, tanks and valve pits
Mechanical	Actuators, enclosures, emergency showers etc
Electrical and Instrumentation	Flow meters, level switches and controls

Service Hierarchy	Service Level Objective
Storage assets	Ponds and lagoons to detain treated water for required period
Re-use assets	Irrigation pipe, valve, pump and sprinklers at water re-use sites;

2.3 Legislative Requirements

Council has to meet many legislative requirements including Australian and State legislation and State regulations. These include the legislation outlined in Table 2.2.

Table 2.2 Legislative Requirements

Legislation	Requirement
Local Government Act 1999	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.
Work Health & Safety Act	Sets out roles and responsibilities to secure the health, safety and welfare of persons at work and covering injury management, emphasising rehabilitation of workers particularly for return to work. Organisations are to provide a safe working environment and supply equipment to ensure safety.
Water Industry Act 2012 and Regulations 2012.	Defines licensing, technical, and safety requirements, for water industry entities. The regulations also address the protection and use of water and sewerage infrastructure and equipment, and water conservation measures.
Workers Rehabilitation and Compensation Act 1986.	Establishes the compensation and rehabilitation scheme and sets out the rights and obligations in relation to injured workers and employers.
South Australian Public Health Act 2011 and Regulations (Wastewater) 2013.	Details the legislative requirements for the manufacture, installation, operation and maintenance of wastewater systems.
Environment Protection Act 1993.	Provides the regulatory framework to protect South Australia's environment, including land, air and water.
Environment Protection (Water Quality) Policy 2015.	Provides the most specific and detailed protection of the state's surface, marine and underground water sources
Dangerous Substances (Dangerous Goods Transport) Regulations 2023	Provides the regulatory framework for the packaging and transportation of dangerous goods by road and rail.
Water Resources Act 1997.	Provides for the management of the States water resources.
Natural Resources Management Act 2004 and associated Regulations.	The Act establishes an integrated scheme to manage South Australia's soil, water, pest plants and animals, and biodiversity across the state. In particular, this Act provides for the protection and management of catchments and the sustainable use of water resources

The District Council of Tumby Bay operations in relation to CWMS and associated installations comply with following codes, standards, criteria and guidelines:

- Guidelines, Design Criteria and Standards for Community Wastewater Management Schemes (LGA).
- Community Wastewater Management System Codes 2013 (DHW).
- Onsite Wastewater Systems Code 2013 - (DHW)
- Sewerage Code of Australia (WSA 02) and any SA Water supplementary documentation
- Sewage Pumping Station Code of Australia (WSA 04).

- AS/NZS 3500: Plumbing and drainage.
- AS/NZS 5667: Water quality - Sampling - Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples.
- AS/NZS 2031: Water quality - Sampling for microbiological analysis (ISO 19458:2006, MOD).
- AS/NZS ISO 3100: Risk management - Principles and Guidelines.
- The National Construction Code (NCC) Volume 3 Plumbing Code of Australia (PCA) including South Australian Variations and/or Additional Provisions as listed in Appendix A.
- Standard Form: Technical Specification-Construction of Septic Tank Effluent Drainage Schemes (DH, LGA).
- Septic Tank Effluent Drainage Scheme Design Criteria (DH, LGA).
- South Australian Biosolids Guidelines for the Safe Handling, Reuse or Disposal of Biosolids (EPA).
- South Australian Recycled Water Guidelines (DHW).
- Australian Guidelines for Water Recycling: Managing Health and Environmental Risks (Phase1) (NRMMC, EPHC).

2.4 Community Levels of Service

Community Levels of Service relate to the service outcomes that the community expects in terms of reliability, responsiveness, amenity, safety and financial management.

Table 2.3 Community Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Reliability	Minimise interruption to service provision.	Reported service interruptions due to CWMS infrastructure failure.	Minimal interruption to service delivery
	Collection system operation without blockage.	Reported or identified blockages.	Minimal interruption to service delivery
	Maintenance of service during power outage.	Manage system in accordance with contingency plan to minimise and manage overflow.	Activation of contingency plan as required.
	Meeting SA Health and EPA standards	Compliance with approval conditions	Continued compliance with SA Health and EPA requirements.
Responsiveness	Response to blockages and alarms within set timeframe.	Response to critical alarms and complaints.	Within 2 hours
	Response time to customer requests & time taken to complete requests	All requests adequately responded to and dealt with within Policy timeframes	Continued responsiveness within Council policy
Amenity	Maintain visual amenity of CWMS infrastructure.	Maintain equipment and land clear from weeds and debris.	Weed spraying of CWMS sites in conjunction with footpath spraying program.
	Control odour generation from pump stations, treatment plants and storage lagoons.	Reported odour complaints.	<5 per year
Safety	Ensure public safety around high-risk system components including pump stations, manholes, treatment plant and storage lagoons.	All lockable infrastructure secured from public access.	No unauthorised access to CWMS infrastructure.
	Manage public access to sites irrigated with reclaimed water.	Irrigation operation in conformance with Irrigation Management Plan.	Minimise risk to public health from public area irrigation.
Finance	Ensure annual services charges meet requirements for compliant operations of scheme and planned asset renewals.	Adequate recording and reporting on costs and charges.	Charges cover operations, maintenance and renewal.
	Annual budget reporting in line with Council financial processes.		

2.5 Technical Levels of Service

Technical Levels of Service support the community service levels and are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the council undertakes to best achieve the desired community outcomes.

Table 2.4 Technical Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Quality	Treated effluent to comply with license conditions. Infrastructure compliant with current SA Health and EPA standards.	Quarterly sampling and testing by NATA accredited laboratory. Infrastructure compliant or plans for upgrade to meet compliant levels.	Consistently within SA Health requirements for water quality.
Reliability	Ongoing operation of pump stations and treatment plant. Availability of treated effluent for irrigation.	System outage frequency and duration due to CWMS infrastructure failure. Acceptable quantity and quality of water to meet irrigation requirements.	No impact on customers as a result of system downtime. 90% of foreshore and town oval irrigation requirements for Tumby Bay met through reclaimed water.
Maintenance	System maintenance in accordance with component manufacturers' recommendations and Council Operations and Maintenance Plan.	Reporting	Compliance with recommendations - Records maintained of all system maintenance.
Renewal	Planned asset renewal and upgrade undertaken to maintain system in compliant operational condition.	Asset management plan integrated with Long Term Financial Plan and annual budget process.	Updated plans adopted for budgeting and reviewed annually.
Capacity	Ensure adequate capacity for future growth forecasts.	System planning based on growth forecasts and development planning.	System catchment component plans completed and aligned to growth forecasts and development planning.
Safety	System free of preventable hazards	Assessment of hazardous components and tasks in accordance with Hazard Management Procedure.	No lost time injury associated with CWMS operations.

3 Future Demand

3.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc. Demand factor trends and impacts on service delivery are summarised in Table 5.

Table 3.1 Demand Factors, Projections and Impact on Services

Demand Driver	Present Position	Projection	Impact on Services
Population and new connections growth.	Tumby Bay: Historical background population growth of approx. 0.8% per annum Port Neill: Historical background population growth of 0% per annum. Estimated combined annual growth of 0.6%	Continued growth in accordance with historical trends, noting the potential future impact of significant regional economic development including mining operations and regional export port.	Minimal impact at current growth rates. Major development could result in an upgrade requirement for the capacity of treatment plants and storage.
Climate Change	CWMS system setup to handle current levels of stormwater inflow.	More frequent heavy rain events likely.	Higher frequency and intensity potentially leading to greater stormwater inflows to CWMS treatment plant and storage lagoons.
Climate Change	CWMS provides irrigation for parks and Golf course	Increasing hot and dry conditions will lead to additional irrigation requirements.	Current storage capacity insufficient to meet additional demands.

3.2 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Council will determine the ability of the existing schemes to manage increased output for new developments within townships. Developers will be required to provide additional infrastructure for existing schemes and upgrade where necessary to ensure adequate wastewater disposal. Opportunities identified to date for demand management are shown in Table 3.2.

The impact of climate change on assets is an emerging and complex discussion and further opportunities will be developed in future revisions of this AM Plan.

Table 3.2 Demand Management Plan Summary

Service Activity	Demand Management Plan
Wastewater Collection and Treatment	1. Continued evaluation of the impact of new proposed developments on existing infrastructure. 2. A review of system capacities will be required if potential for higher growth is identified, and this will be incorporated into future iterations of the Asset Management Plan as requirements are known. 3. Continue to work to identify potential stormwater inflows. Increase community awareness on the effects of the excessive inflow rates to help in reducing the number of faulty private drains and illegal stormwater connections. 4. Develop an upgrade proposal for the old facultative lagoon including re-lining to provide additional treated water storage capacity for seasonal irrigation.

4 Life Cycle Management

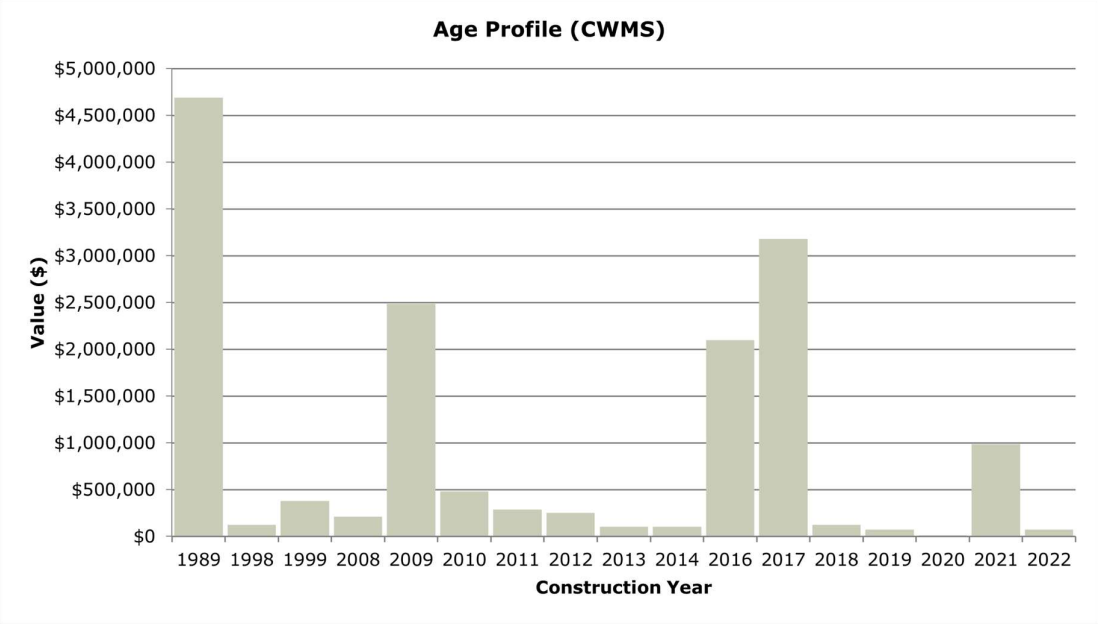
The life cycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in Section 2) while optimising life cycle costs.

4.1 Background Data

The District Council of Tumby Bay's CWMS assets are located in the townships of Tumby Bay and Port Neill and the assets covered by this asset management plan are shown in Table 1.

The age profile of the assets shown by Current Replacement Cost (CRC) included in this plan is shown in Figure 4.1.

Figure 4.1 CWMS Asset Age Profile



The Tumby Bay system was first built in 1989 consisting of gravity pipes, rising mains, inspection points and pump stations. New assets were added to the system and the majority of the pumps have been replaced at the pump stations between 2004 and 2017. The wastewater treatment plant was constructed in 2009 along with the addition of new irrigation assets providing reuse options for Council. Capital renewal, upgrade and new additions have continued annually since 2009. A new storage lagoon was constructed to the north of the existing storage lagoon in 2016.

The Port Neill CWMS system was built and commissioned in 2017. The system includes a gravity collection network with two pump stations and rising mains to the storage lagoon. A filtration plant and pump station situated adjacent to the storage lagoon transfers reuse water to the town oval for subsurface irrigation.

In 2021 the Tumby Bay treatment plant underwent a significant upgrade in line with regulatory requirements to improve treatment capacity and disinfection capabilities.

4.1.1 Asset Capacity and Performance

Council's services are generally provided to meet design standards where these are available. Currently there are no areas of concern with service deficiencies, however there are opportunities

to consider the construction of additional treated water storage at the old facultative lagoon. This would allow for additional storage capacity in wet years to better provide for seasonal irrigation needs.

Table 4.1 Condition Scores

Condition Rating	Description
0	Very Good: <5years old no sign of deterioration
25	Good> 5years old no sign of deterioration
50	Poor > 5yrs signs of deterioration
75	Due for recondition / replacement
100	Immediate recondition / replacement required

An equivalent year of acquisition for condition-based assets has been calculated (Expiry - Standard Life) for inclusion in the Age Profile shown in Figure 4.1.

4.1.2 Asset Valuations

The value of the CWMS assets recorded in the asset register as at 1 July 2023 covered by this asset management plan is shown below. Assets were last revalued at 1 July 2022.

Current Replacement Cost	$17,391,136
Written Down Value	$13,041,639
Annual Depreciation Expense	$333,988

Depreciation expense shown is the 2022-23 forecast as reported at the 1 July 2022 revaluation.

The current rate of consumption (annual depreciation / current replacement cost) for CWMS assets is 1.9%. This indicates on average over the life of the asset that 1.9% of the depreciable amount is consumed annually. The translation of this consumption rate into renewals is subject to a decision on funding, service level determination and condition.

4.2 Risk Management

Council has a formal corporate risk management plan and an approved SRMTMP and RWMP which deal with operational, public and environmental health risks associated with the re-use of treated effluent in public areas.

For the purposes of Asset Management, a high-level assessment of risks associated with service delivery from CWMS infrastructure assets has been undertaken. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. It then develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical infrastructure risks, assessed as being 'Very High' - requiring immediate corrective action and 'High' - requiring prioritised corrective action have been identified with associated costs for treatment.

Service or Asset at Risk	What Can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk	Treatment Costs
Treatment Capacity	Failure to plan for future major development could lead to overcapacity of CWMS system.	H	Integration of future development programs with infrastructure planning to ensure CWMS system development meets future requirements	M	Included within Council operating budget and supplemented by developer contributions.
Asset Condition	Failure to plan for financial renewal of critical assets can lead to deteriorating service level and asset condition.	H	Valuation and assessment schedule, Asset Management Plans developed in line with Long Term Financial Plan	L	Included within Council operating budget
Asset Integrity	Climate Risk – Erosion and inundation risks to CWMS pump stations.	H	Coastal adaptation planning to cover critical infrastructure assets including CWMS	M	Costs to be determined though coastal adaptation planning process.
Loss of Key Staff	Key experienced staff have the technical skills and local knowledge to support the maintenance and renewal of the CWMS assets	H	Multiple people trained in aspects of operations to protect from loss of staff. Review and update the documentation of current work practices.	L	Ongoing costs are included in the operations budget
Loss of Key Contractors	Shrinking contractor pool may impact the ability to complete operations, maintenance and renewal activities.	H	Early procurement process, utilising vendor panel and equivalent, increased budget/service charge if required.	M	Potential cost increases at end of current contract terms.
Upgrade costs	Future regulatory change could drive significant cost increases through upgrade and operational requirements. Obsolescence in technology leading to early replacement of asset components	H	Monitor developments through SA Health OTR, LGA and industry networks for future change planning. Target upgrades in line with asset renewal timings.	M	Costs to be developed as requirements are identified.
Asset Information	Lack of asset condition information could lead to compromised decision making.	H	Potential physical condition assessment for underground pipe and civil structures at next revaluation.	M	Approximately $25k for targeted CCTV assessment process.

4.3 Required Expenditure

This asset management plan identifies the projected Maintenance, Operations, Renewal, Upgrade and Disposal expenditures required to provide the agreed level of service to the community over a 15-year financial planning period, this provides input into the Long Term Financial Plan aimed at providing the required services in a sustainable manner.

4.3.1 Maintenance and Operations

Maintenance and Operations activities for Councils CWMS system are managed by internal staff and supported by key qualified contractors where required.

Maintenance is the regular on-going work that is necessary to keep assets functioning, including instances where portions of the asset fail and need immediate repair to make the asset functional again. Maintenance includes reactive (unplanned), proactive (planned) and specific maintenance work activities. Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement.

Operations includes regular activities to provide services. Examples of typical operational activities for CWMS include chlorine supply, de-sludging, pipe flushing, inspections, and utility costs. Septic tanks on private properties are not part of Councils assets however Council arranges for all septic tanks connected to the CWMS systems to be de-sludged as part of regular operations.

Council's future CWMS infrastructure maintenance and operational forecasts are based on the costs provided for previous years and have been set at the level of the 2023-24 budget which considers recent materials and labour inflation and optimised maintenance schedules. At Tumby Bay one quarter of the septic tanks are desludged each year whilst at Port Neill all the septic tanks will be desludged once every four years. The variation in annual budgets reflect this cycle.

The costs associated with Maintenance and Operations have been summarised for each financial year over the 15-year planning period and shown in Table 4.2, the figures include all relevant internal costs and external expenditure.

The average annual Maintenance and Operations cost over the 15-year planning period is $472k.

Table 4.2 Projected Operation and Maintenance Expenditure

Financial Year	Operations & Maintenance
2024-25	$482,437
2025-26	$466,293
2026-27	$471,947
2027-28	$478,508
2028-29	$482,437
2029-30	$466,293
2030-31	$471,947
2031-32	$445,910
2032-33	$482,437
2033-34	$466,293
2034-35	$504,545
2035-36	$445,910
2036-37	$482,437
2037-38	$466,293
2038-39	$471,947
Total	**$7,085,634**

4.3.2 Capital Renewal

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 or upgrade resulting in additional future operations and maintenance costs.

A capital threshold of $5,000 has been applied in the development of the Renewal plan, items with a value less than the threshold are assumed to be replaced under the maintenance budget.

For much of the renewal plan, assets requiring renewal are identified through the analysis of the asset register data to project the renewal costs (current replacement cost) and renewal timing (construction year plus updated useful life to determine the renewal year).

In some cases, an alternative approach was utilised to estimate the timing and cost of forecast renewal work – There is a plan to partially renew pump station control systems due to the PLC's becoming obsolete and unsupported and the replacement of the educt vent pipes with ground-based filters.

Some longer life tank assets are falling due for replacement in 2038-39 leading to a larger than average renewal forecast for that year. Council will consider detailed condition inspection of these assets during the term of this AM Plan to determine if the standard life for these assets can be extended and the renewal works postponed.

The costs associated with Renewal have been summarised for each financial year over the 15-year planning period and shown in Table 10. A detailed listing of renewal works is included in Appendix A. The average annual capital renewal cost over the planning period is $92.2k.

Table 4.3 Required Capital Renewal Expenditure

Financial Year	Capital Renewal Expenditure
2024-25	$117,500
2025-26	$140,000
2026-27	$52,500
2027-28	$30,000
2028-29	$64,720
2029-30	$30,000
2030-31	$30,000
2031-32	$30,000
2032-33	$49,060
2033-34	$117,290
2034-35	$30,000
2035-36	$119,645
2036-37	$189,647
2037-38	$30,000
2038-39	$352,575
Total	**$1,392,937**

4.3.3 Upgrade and Acquisition

Upgrade or Acquisition expenditure is major work that creates a new asset that did not previously exist or works which upgrade or improve an existing asset beyond its existing capacity. This may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development.

There are currently no plans for any physical Upgrade or Acquisition works for the Tumby Bay or Port Neill CWMS systems, however a number of engineering review and assessment projects for potential upgrade/improvement will be conducted during the first 3 years of this AMP planning period:

- 2024-25-Additional wastewater storage capacity: At Tumby Bay over the next 10-15 years it is likely that additional capacity will be required for wastewater storage and repurposing of the old facultative lagoon footprint for the construction of additional lined storage will be reviewed for feasibility.
- 2025-26-Review costs and benefits of SCADA as a monitoring tool – with continuing technological advancement newer SCADA systems may be cost effective for online monitoring of the Tumby Bay and Port Neill Systems and offer opportunities to reduce call out fees and provide real time process and fault information.
- 2026-27-A feasibility study will be carried out for the upgrade of the manual filter at Port Neill Oval irrigation site to self-cleaning reducing maintenance and operation costs. Design work will be required to determine options for a disposal path for backwash water as the site is remote to the CWMS collection network.

The cost estimates associated with these assessments are shown in Table 11, future iterations of this AMP may include forecasts for the physical implementations of these upgrades if the engineering reviews and assessments are favourable.

The total annual capital Upgrade/Acquisition cost over the 15-year planning period is $25,000.

Table 4.4 Budgeted New/Upgrade Expenditure

Financial Year	Capital Upgrade Expenditure
2024-25	$10,000
2025-26	$10,000
2026-27	$5,000
Total	**$25,000**

4.3.4 Disposal

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Council has not identified any CWMS infrastructure assets to be disposed in the 15-year planning period.

4.3.5 Financial Projections

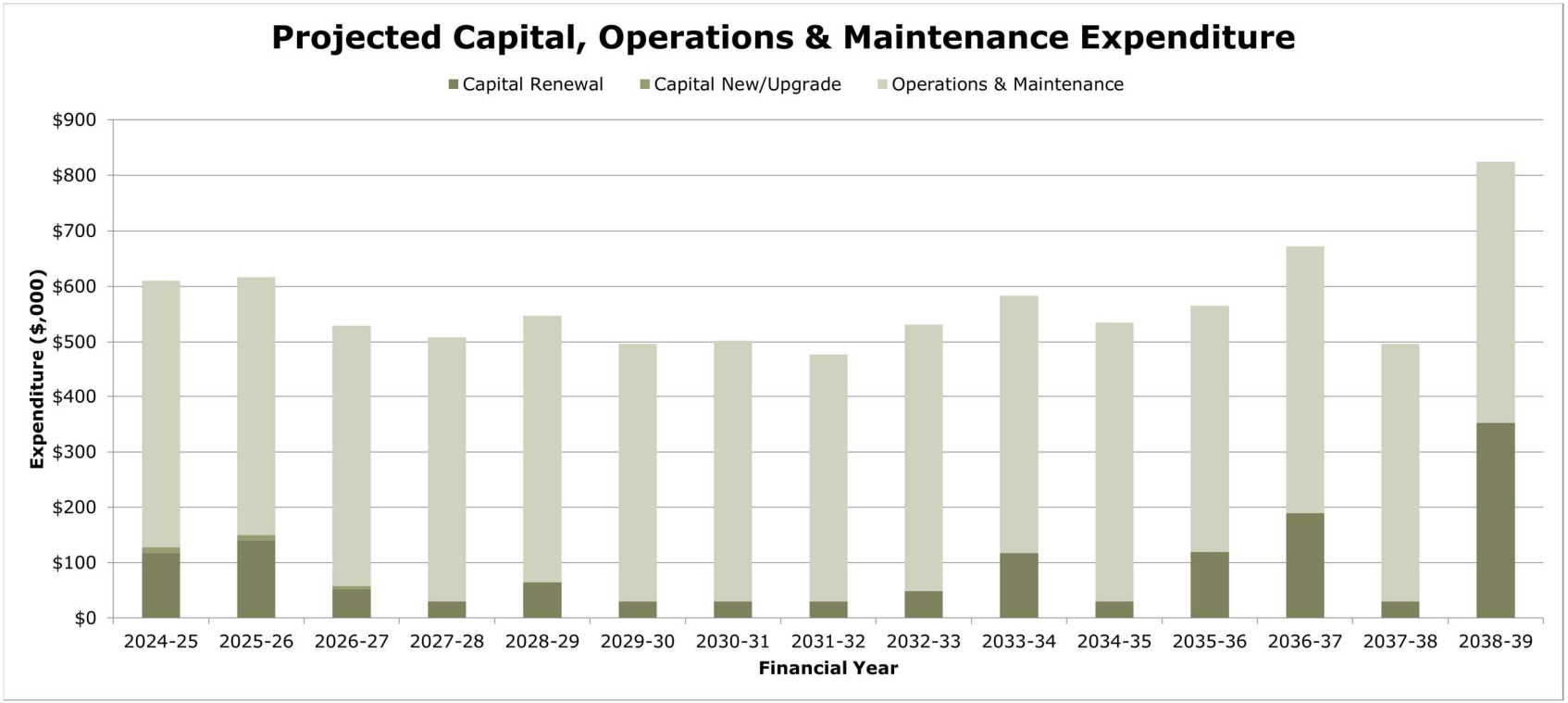
The financial projections for the 15-year planning period are summarised in Table 4.5 and Figure 4.2 for projected Maintenance & Operations, Capital Renewal, Capital Upgrade and total estimated budget funding.

The average projected operations, maintenance and capital expenditure required over the 15-year planning period is $566k per year.

Table 4.5 Operating and Capital Expenditure

Financial Year	Operation and Maintenance	Capital Renewal	Capital Upgrade	Estimated Budget Funding
2024-25	$482,437	$117,500	$10,000	$609,937
2025-26	$466,293	$140,000	$10,000	$616,293
2026-27	$471,947	$52,500	$5,000	$529,447
2027-28	$478,508	$30,000	$0	$508,508
2028-29	$482,437	$64,720	$0	$547,157
2029-30	$466,293	$30,000	$0	$496,293
2030-31	$471,947	$30,000	$0	$501,947
2031-32	$445,910	$30,000	$0	$475,910
2032-33	$482,437	$49,060	$0	$531,497
2033-34	$466,293	$117,290	$0	$583,583
2034-35	$504,545	$30,000	$0	$534,545
2035-36	$445,910	$119,645	$0	$565,555
2036-37	$482,437	$189,647	$0	$672,084
2037-38	$466,293	$30,000	$0	$496,293
2038-39	$471,947	$352,575	$0	$824,522
Total	**$7,085,634**	**$1,382,937**	**$25,000**	**$8,493,571**

Figure 4.2 Projected Operating and Capital Expenditure over 15 year AMP planning period



5 Plan Improvement and Monitoring

The following tasks have been identified for improving future versions of the plan. Council should assign responsibilities and resources to these tasks as part of the endorsement of the plan.

Table 5.1 Tasks identified for improving future versions of the plan

Task No.	Task	Responsibility
1.	Conduct a risk assessment process to further develop the risk management strategy and plan for the CWMS assets	Council
2.	The CWMS assets renewal plan is currently based on the age and standard useful lives of the assets for most assets. As the assets age a condition-based approach to determining the remaining lives of the assets will assist in renewal planning. Regular inspections of the assets at the pumping stations and treatment facilities and inspection of a sample of the longer life assets is recommended.	Council
3	Develop additional opportunities for climate change adaptation for CWMS asset management	Council

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

This plan has a life of 4 years and is due for revision and updating within 2 years of each Council election.

6 References

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2020 'International Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2012, Practice Note 6 Long-Term Financial Planning, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn6
- IPWEA, 2014, Practice Note 8 – Levels of Service & Community Engagement, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn8
- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- IPWEA, 2011, Asset Management for Small, Rural or Remote Communities Practice Note, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org
- District Council of Tumby Bay CWMS Asset Valuation 1 July 2022 (220835R003RevA)