CABONNE COUNCIL

SEWER
Asset Management Plan

Adopted June 2017

Document Control					
Rev No	Date	Revision Details	Author	Verifier	Approver
0.5		Draft	SB/TS	BC	
0.9		Update based on feedback from GM			GM
1.0		Final Draft for Public Display			Council

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1 Executive Summary

Council provides environmentally responsible sewerage services, which maintains the health of the Cabonne community, is cost effective, customer focussed and that caters for the sustainable growth of the Shire. The Sewerage network had a fair value of **$37.7M** on the 30 June 2016.

This plan assists Council in the decision making process and is presented at a high level to provide key information that can be used in the determination of levels of service and funding required. The following table identifies the asset categories in this plan, the five (5) year average costs and funding gap if one exists. Figure 1.1 indicates the proposed expenditure over the next 5 years.

Table 1.1: Sewerage Asset Portfolio Overview (in 2017 $,000)

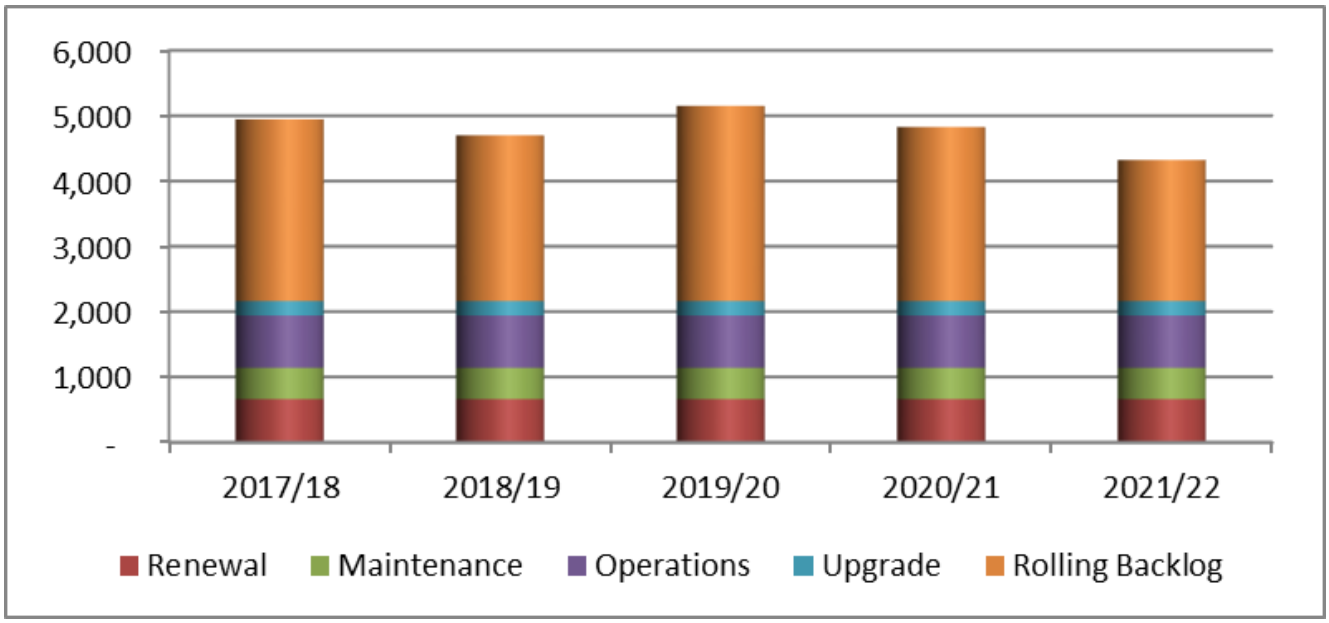
Component	Number	Operation & Maintenance Budget[1]	Renewal Budget[1]	Upgrade & New Budget[1]	Average Renewal Funding Gap[1]	Backlog (2016/17)	Backlog (2021/22)
Reticulation (Gravity)	63 km	1,282.4	0	0	-	0	0
Reticulation (Pressure)	44.3 km		0	0	-	0	0
Treatment Plant	7		540.4	220,577.0	152.0	1,310.8	759.8
Pump Stations	11		120.1	0	380.0	1,260.7	1,400.0
Rising mains	7.9 km		0	0	-	0	0
Irrigation	1		0	0	83.6	210.4	334.2
TOTAL		1,282.4	660.5	220.6	615.5	2,571.5	2,159.7

Notes:

1. *Budget Figures are the 5 year annual average amounts*
2. *Where O&M budgets are not specifically tied to a component they are listed here including items such as: electricity, cleaning, internal costs, plant hire and insurance.*

Figure 1.1 identifies the proposed expenditure over the next 5 years together with the backlog if one exists. There is no identified backlog for year 1 of the plan, as well as no identified backlog for the first 5 years of the plan. The projected budget amounts are based on 2017 dollars.

Figure 1.1: What will we spend over the next 5 years (2017 $,000)?



The process of managing our Sewer assets is one of continually improving the knowledge Council has including maintaining up to date asset registers, condition ratings, the cost of work on the asset and the rate at which assets deteriorate and reach their intervention level. Section 12 contains details of the plan to further improve the details contained in the next Sewer Asset Management Plan.

2 Strategic Objectives

Council operates and maintains the Sewerage assets to achieve the following strategic objectives.

1. Provides infrastructure to a standard that supports the outcomes identified in the Council Community Strategic Plan.

2. Ensure that the system is maintained at a safe and functional standard as set out in this asset management plan.

3. Ensure that services are managed to deliver the requirements of Council's Asset Management Policy and Strategic Asset Management Plan.

Cabonne Council developed a comprehensive community engagement strategy to ensure a broad range of opinions; ideas and visions were captured to help shape the Cabonne Community Strategic Plan. The outcomes & strategies supported by that plan are detailed in the Strategic Asset Management Plan.

To assist in the delivery of the objectives in this plan, a number of key documents & systems have been prepared and should be referred to in considering the findings presented:

Table 2.1: Where can I find additional information?

Document / System	Content
Community Strategic Plan	Outcomes and Strategies identified by the community
Council Asset Policy	How we manage assets
Asset Management Strategy	Overall direction of asset management and portfolio summary
Asset Management Manual	Procedures and Processes that guide the management of assets (currently drafting)
Condition Assessment Manual	Details on the process of assessing condition, including photographic examples of various conditions
Enterprise Risk Management Plan	The identification and management of risks across Council operations
Asset Management System (AssetFinda)	Electronic system that contains the asset register, condition ratings and used to model future renewals
GIS (MapInfo Professional)	Geographical information system that produces maps of assets
Water and Sewerage Strategic Business Plan	It gives details and supporting information for Council's Community Strategic Plan, Delivery Program and Operational Plan and Budget.
STP Site Operational & Maintenance Plans	Details on routine operational & maintenance activities at each Sewer Treatment Plan.

The Cabonne Community Strategic Plan Outcomes supported by the Sewer Asset Management Plan include:

- 5.3 Sustainable solid and liquid waste management practices are in place across Cabonne
  - Develop long term strategic plan for the development, operation and closure of sites
  - To provide and maintain environmentally sustainable, high quality sewerage facilities
  - Ensure adequate sewage treatment and effluent management schemes in Cabonne

3 Services Provided & Classification

Council provides the towns of Molong, Canowindra & Eugowra with gravity sewerage systems, and the towns of Cumnock, Yeoval, Manildra & Cudal with pressure sewerage systems. These systems provide each town with an environmentally friendly and efficient means to process and potentially re-use sewerage collected.

The criticality ratings and condition ratings have been reviewed and updated to reflect optimum asset management practices. This allowed Council to have a more realistic grading of its assets.

Criticality Grade	Gravity Sewer	Pressure Sewer
Very High	Hospitals etc	
High	Rising mains ≥ 100 mm, Gravity mains ≥ 375 mm	Pressure Mains ≥ 100 mm
Medium	Rising mains < 100 mm, Gravity mains 200 mm - 350 mm	Pressure Mains ≥ 70 mm
Low	Gravity mains 150 mm	Pressure Mains ≥ 50 mm
Very Low	Gravity mains < 150 mm, Service lines < 100 mm	Flushing Lines, Service Lines

cet = Cumulative ET's

The criticality rating identifies different intervention levels for different assets depending on their assessed criticality and consequence rating. The sewerage assets had a fair value of **$37.7M** on the 30 June 2016, and details of the major sewerage infrastructure components are contained in Table 3.1 together with their renewal cost.

Table 3.1: What is provided?

Classification	Asset	Dimension
Criticality Very High	Reticulation Pipework	16,121 m
Criticality High	Reticulation Pipework	73,244 m
Criticality Medium	Reticulation Pipework	8,244 m
Criticality Low	Reticulation Pipework	11,078 m
Criticality Very Low	Reticulation Pipework	10,693 m
Criticality Very High	Treatment Plant	7
Criticality High	Pump Stations	11

4 Levels of Service & Key Performance Measures

Council is responsible for providing a safe, reliable and cost effective sewerage reticulation & treatment. This must be customer focused; it must enhance the environment of Cabonne and cater for the sustainable growth of the Shire. Ongoing consultation is undertaken with the community to ensure the provision of adequate sewerage treatment is acceptable to the wider community.

Levels of service indicators have been developed for the services provided by the Sewerage Network based on the objectives set in the Community Strategic Plan. These objectives have been used to define Community Levels of Service (CLOS), which relates to how the community receives the service in terms of safety, quality, quantity, reliability responsiveness, cost efficiency and legislative compliance.

From these CLOS, Technical LOS (TLOS) have been developed that detail how these services will be delivered in terms of quantity, frequency and standard.

Finally, Key Performance Measures and how they will be measured provide the detail on how we determine whether we are delivering what the community are asking for. Development of Key Performance Measures (KPM's) based on condition have been developed by considering both environmental, health and safety, and infrastructure capabilities. The KPM's are to be reviewed to align with the Technical LOS and the Strategies identified in the CSP that support the outcomes identified in the Levels of Service section of this document.

Table 4.1 summarises at a high level what the community desires for each asset and how Council will deliver it. The CSP Reference column identifies the Community Strategic Plan objective that is being supported by the asset group and the LOS defined.

Table 4.1: What does the Community want?

CSP Ref	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Target	Current
	Effluent quality suitable for discharge.	Compliance with E.P.A licence conditions.	100% compliance	86% Canowindra 91% Molong
	Individual discharges to sewer mains uninterrupted.	Infrastructure is maintained in an operational condition.	a) No sewer chokes or blockages causing back-up into customer connections in gravity systems. b) No overflow of individual storage tanks in pressure sewer systems.	a) 2 at Canowindra 0 at Eugowra 9 at Molong b) 0 at Cudal 0 at Manildra 0 at Yeoval 0 at Cumnock
	Systems operate free of overflows.	Infrastructure is capable of performing to the desired capacity or higher.	No recorded overflow incidents at STP or Pump Stations.	0 at Canowindra 0 at Cudal 0 at Cumnock 0 at Eugowra 0 at Manildra 0 at Molong 0 at Yeoval

	Infrastructure operates continuously to meet the user's needs.	Infrastructure is maintained in an operational condition, and replaced at adopted intervention level.	a) Individual components operational 98% of the time. b) Reactive maintenance activities completed within 72 hrs for minor defects, 12 hrs for pipe work repairs & 6 hrs for mechanical repairs. c) Condition 4 & 5 assets replaced within 1 year of assessment.	a) Compliant b) 100% maintenance completed within timeframes c) Not compliant.

Note: The CSP reference number relates to the Community Strategic Plan outcome that are supported by the Community LOS identified.

5 Condition of Our Assets

Council maintains a Condition Assessment Manual that details the frequency of inspection and condition rating to be used for all assets. This data is recorded in the Council Asset Management System and used to predict the timing of renewal / maintenance requirements in the Long Term Financial Plan.

Assets are rated on a 1 (Excellent) to 5 (Very Poor) scale consistent with the requirements for Integrated Planning & Reporting (pg. 90, 2013). Details on how Council assesses condition and further information on the rating scale will be contained in the Condition Assessment Manual.

The intent of Council is not to undertake renewal on an asset until it reaches its 'Intervention Level', that is the condition at which the community has determined renewal is required based on the LOS analysis. Typically assets will be renewed between condition 3 & 4 which is the threshold for average to poor condition, depending on their classification.

Straight line deterioration profiles will be used to determine when an asset is expected to be due for renewal, until such time that historical data can be used to define a more accurate reflection of the deterioration curves for each material type in an asset group.

Table 5.1: What are our Intervention Levels to Renew an Asset?

Component	Class	Intervention Level	Useful Life
Reticulation Pipework	Criticality Very High	3	60 to 100 years
Reticulation Pipework	Criticality High	4	60 to 100 years
Reticulation Pipework	Criticality Medium	4	60 to 100 years
Reticulation Pipework	Criticality Low	5	60 to 100 years
Reticulation Pipework	Criticality Very Low	5	60 to 100 years
Treatment Plant	Criticality Very High	3	Electrical – 30 Years Mechanical – 40 Years Civil – 150 years
Pump Stations	Criticality High	4	Electrical/Mechanical – 25 years Civil – 70 Years

Each asset's condition is recorded in the Asset Register.

6 Operations

Operational activities are those regular activities that are required to continuously provide the service including asset inspection, electricity costs, fuel and overheads. The Operational Plan details the specific projects and activities to be achieved to meet the commitments in the Delivery Program. It spells out the details of the Delivery Program – the individual projects and activities that will be undertaken each year to achieve the commitments made in the Delivery Program. It will also include the council's operational budget for the year.

Council has a customer request system to identify problems and inspect and rectify as required. Regular inspections of reticulation & above ground infrastructure is carried out as per Table 6.1.

The Operational Plan for Council's sewer services includes but is not limited to:

- Sewerage Treatment Operations/Maintenance;
- Sewerage Treatment Capital Works;
- Storage Systems Operation/Maintenance;
- Storage Systems Capital Works;
- Effluent reuse schemes Operation/Maintenance;
- Effluent reuse schemes Capital Works;
- Pipelines Operation/Maintenance;
- Pipelines Capital Works;
- Sewerage Pump Station Operation/Maintenance; and
- Sewerage Pump Station Capital Works.

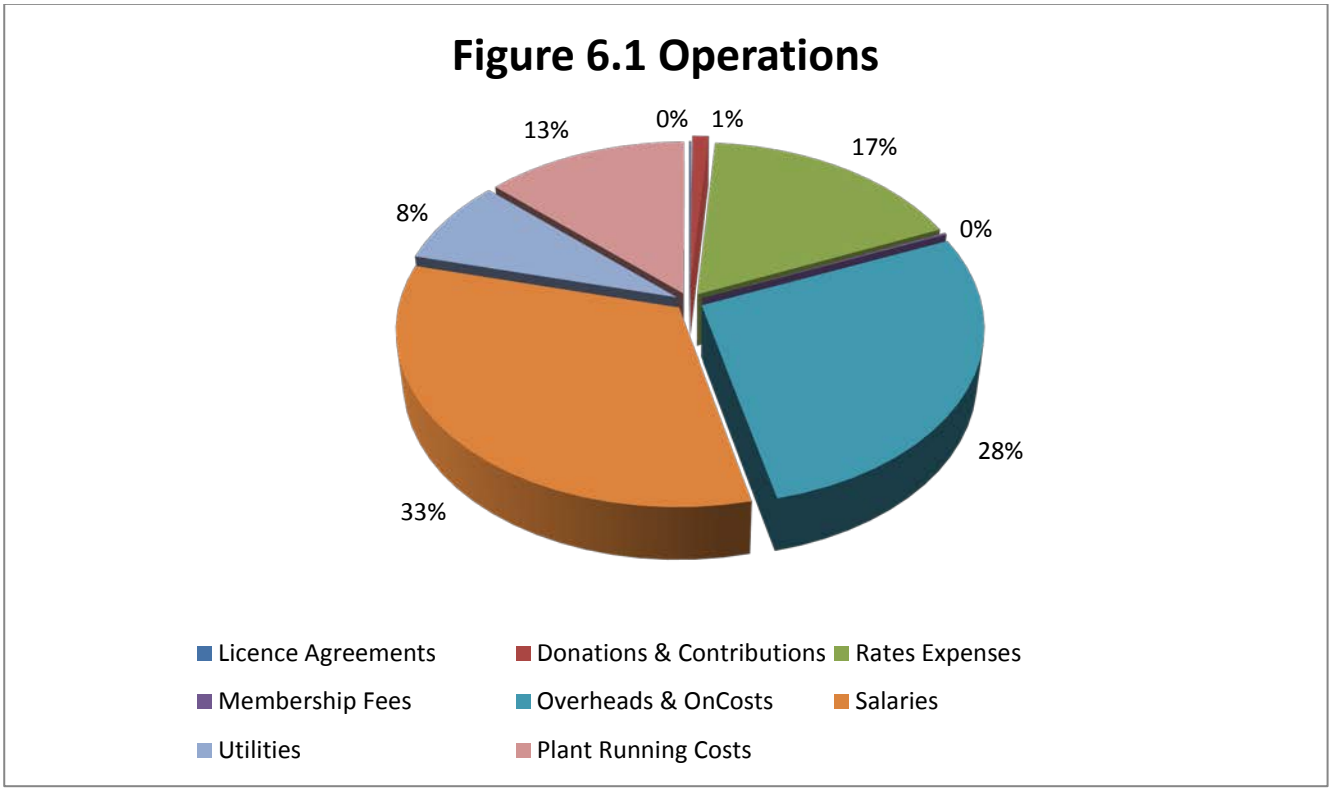
Table 6.1: What are our Operational Activities and the frequency we undertake them?

Activity	Current Frequency	Proposed Frequency
Condition Assessments of all Above Ground External Assets	Reactive	Annually
CCTV Inspections	Reactive	1% annually
Condition Assessment of Manholes	With CCTV	With CCTV
Safety Inspections	Reactive	Bi-annually
Effluent/Influent Testing	Monthly	Monthly

Table 6.2: What are our Operational Costs?

Activity	5 year average (2017 $,000)
Licence Agreements	1.2
Donations & Contributions	8.6
Rates Expenses	138.2
Membership Fees	1.3
Overheads & On costs	221.2
Salaries	261.5
Utilities	63.2
Plant Running Cost	105.3
Total	800.5

Figure 6.2: What is the breakup of our Operational Costs?



7 Maintenance

Routine maintenance is the regular on-going work that is necessary to keep assets operating to ensure they reach their expected useful life. It includes work on an asset where a portion may fail and need immediate repair to make it operational again. It may either be planned, where works are programmed in or cyclic in nature, or reactive in response to storm damage or vandalism.

Regular defect inspections of reticulation & above ground infrastructure is carried out as per Table 7.1.

Table 7.1: What are our Maintenance Activities and the frequency we undertake them?

Activity	Current Frequency	Proposed Frequency
Washing down wetworks	Daily	Daily
Cleaning strainers	Weekly	Weekly
CCTV Inspections	Reactive	1% per year
Manhole Inspection	Reactive	Bi-annually
Pressure Sewer System Inspection	Reactive	Annually

Adjusting Levels of Service

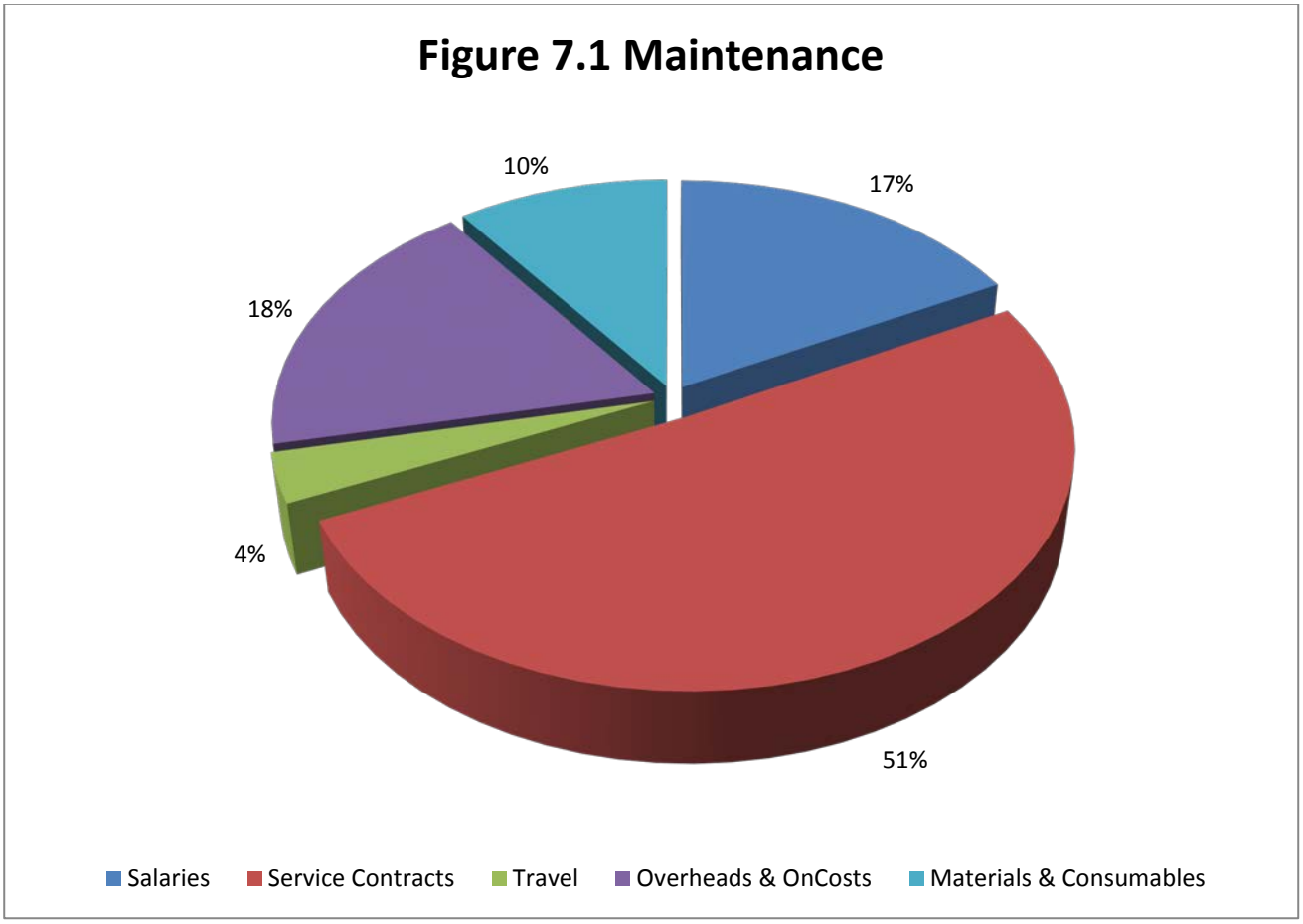
Due to the health risks and legislative requirements, Council is obligated to maintain its existing LOS. Currently Councils LOS are based on:

- The community has access to a sewerage system that has sufficient capacity for current and projected growth requirements
- Sewage treatment and effluent disposal is managed in accordance with the principles of ecologically sustainable development
- The operation of the sewage treatment system results in high quality services to customers
- All residents & businesses utilising Council's sewerage services are charged to reflect costs of treatment and encourage onsite treatment of waste.

Table 7.2: What are our Maintenance Costs?

Activity	5 year average (2017 $,000)
Salaries	83.2
Service Contracts	245.6
Travel	16.2
Overheads & On Costs	88.0
Materials &Consumables	48.8
Total	481.8

Figure 7.1: What is the breakup of our Maintenance Costs?



8 Capital Renewal / Rehabilitation

This includes work on an existing asset to replace or rehabilitate it to a condition that restores the capability of the asset back to that which it had originally. The intervention level and estimated useful lives are contained in Table 5.1.

Renewal will be undertaken using 'low-cost' renewal methods where practical. The aim of 'low-cost' renewals is to restore the service potential or future economic benefits of the asset by renewing the assets at a cost less than the full replacement cost.

This Asset Management Plan contains an analysis based on broad assumptions and best available knowledge to date. Modelling is not an exact science so we deal with long term averages across the entire asset stock. Work will continue on improving the quality of our asset registers and systems to increase the accuracy of our renewal models.

The timing for rehabilitation or replacement of an existing asset is when it can no longer function economically or when it can no longer meet its Levels of Service.

The Operations Plan and Maintenance Plan, discussed in the previous sections, provide information used in determining the need for both construction of new works and the rehabilitation or replacement of existing works.

There is a replacement and rehabilitation programme that inspects and relines sewerage infrastructure as needed. Assets requiring renewal will be generally identified from estimates of remaining life and condition assessments obtained from the asset register and models. Candidate proposals will be inspected to verify the accuracy of the remaining life estimate and to develop a preliminary renewal estimate. Verified proposals are ranked by priority and available funds and scheduled in future works programmes.

Details of planned renewal activities proposed in the current Delivery Program are contained in Appendix A for each asset category. The first year of the program will be considered in the development of the next Operational Plan and the remaining 3 years of work will be assessed each year to confirm that the asset has reached its intervention level prior to the work being scheduled.

The costs presented in the following table identifies the current level of funding for the required renewal programs and the funding required to maintain the asset to what is considered an appropriate standard. The required funding in that table is based on the intervention specified in Section 5.

For this asset group, an analysis has been undertaken to determine assets that are already at or above intervention level that are not able to be funded in the next Operational Plan. This work is quantified in the 'Backlog' column.

Table 8.1: What are our Renewal Costs, Gap and Backlog (2017 $,000)?

Activity	Budget[1]	Required[1]	Average Gap[1]	Backlog (2017/18)	Backlog (2025/26)
Reticulation	0	0	0	0	0
Pump Stations	120.1	500.0	380.0	1,260.7	1,400.0
Treatment Plant	540.4	692.4	152.0	1,310.8	759.8
Telemetry	0	0	0	0	0
Irrigation	0	83.6	83.6	210.4	334.2
Total	660.5	1,192.4	615.5	2,571.5	2,159.7

Note: Figures are based on the 5 year annual average amounts

Lifecycle costs

The Asset Life Cycle Cost is the total cost of ownership over the life of the asset. Typically, the capital cost of water supply and sewerage assets will be about 70% of the life cycle cost. A life cycle cost analysis should be undertaken which examines capital costs, recurrent costs (O&M), financing arrangements and residual costs at end of life.

Estimating life-cycle costs

The life-cycle cost of an asset can be expressed by the simple formula: *LCC = Capital cost + life-time operating costs + life-time maintenance costs + disposal cost – residual value.*

However, ascertaining a measure of each variable in the formula can be difficult. Future costs are usually subject to a level of uncertainty that arises from a variety of factors, including:

- The prediction of the pattern of use of the asset over time;
- The nature and scale of operating costs;
- The need for and cost of maintenance activities;
- The impact on inflation on individual and aggregate costs;
- The prediction of the length of the asset's useful life; and
- The significance of future expenditure compared with present day expenditure.

Please note that there is quite a variation between costs for differing sizes of mains and associated infrastructure depending on capacity, and type of construction material.

9 Capital Upgrades & New Assets

Upgrades enhance an existing asset to provide a higher level of service, for example increasing the level of water quality with new treatment methods. New assets are those created to meet an additional service level requirement or increase the size of a network, for example, new subdivisions, or extension of the water supply network.

The requirements for new assets may result from growth, social or environmental needs. The impact from growth is included in the demand analysis within the Asset Management Strategy.

The Contributions Policy Section 64 is not currently part of Cabonne Council's policy for anticipated development or the increase in demand for water and/or sewerage services. Projected population and development growth will place additional demands and loadings on the Council's water supply and sewerage systems respectively. Generally, additional capacity is required in the water supply and sewerage systems to accommodate increased demands and loadings. This normally requires system components, such as pumping stations and pipelines, to be upgraded. On occasions it is necessary to construct additional system components to service the growth.

Programs are determined by analysing the cost of existing infrastructure, existing demand, anticipated growth and the cost of works required to meet the demands created by growth. The total cost of these works is divided between demand units to determine the capital cost per unit.

Selection criteria

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

A more detailed program for capital upgrades & new assets will be included in future revisions of this asset management plan.

10 Disposal Plan

Disposal is any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets with a condition rating of 5 (very poor condition) and not considered critical infrastructure, may be considered to be a redundant asset and therefore decommissioned and disposed.

Through careful analysis of all the existing assets Council may become aware of assets no longer required, and finance can, therefore, be raised through their disposal. An example of this may be surplus areas of land. An added advantage is that, if such assets are sold, there will be a saving on maintenance expenditure in relation to those assets.

Upon further investigation, a more detailed disposal plan will be included in future revisions of this asset management plan.

11 Financial Plan

The sewerage service is a fee for service industry with full cost recovery being the major determining factor for pricing for residential customers.

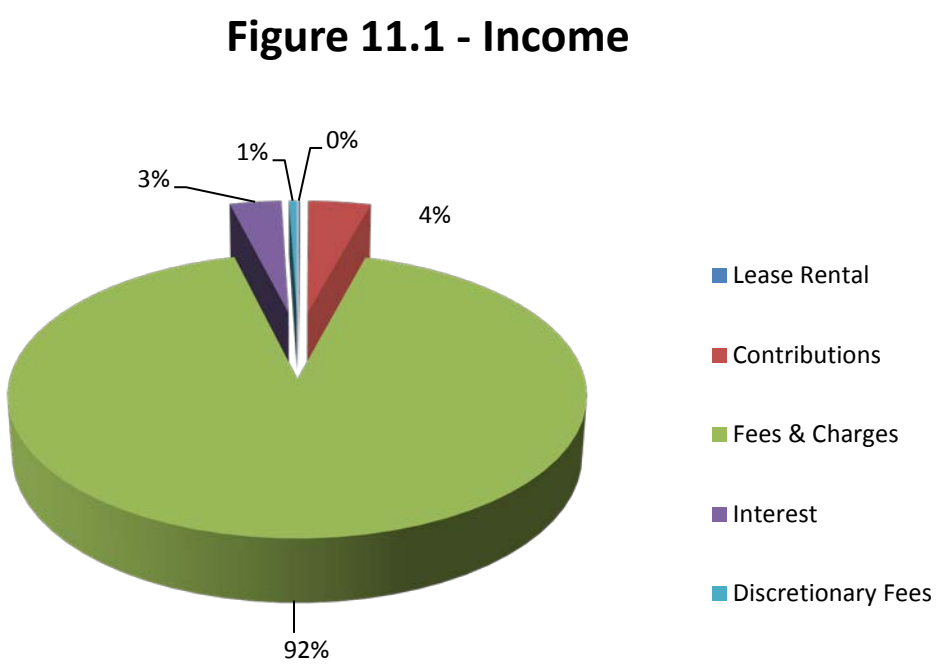
A summary of funding expenditure over the next 10 years is included in Appendix C, with the projected budget amounts being based on 2017 dollars.

Funding for management of assets can come from a variety of sources as detailed in the table below.

Table 11.1: Where does our Income come from?

Activity	10 year average (2017 $,000)
Lease Rental	2.3
Contributions	91.1
Fees & Charges	2,023.2
Interest & General Revenue	75.0
Discretionary Fees	11.8
Total	2,203.5

Figure 11.1: What is the breakup of our income streams?



12 Plan Improvements

Asset Improvement Plan is intended to provide improvements in the knowledge of our assets and their management. This plan will ensure that acceptable progress is made on improving asset management processes and procedures and that progress can be verified and quantified. This improvement plan should ensure asset management progresses at an acceptable pace and moves in the "right" direction - that is, "improvement" is embedded in the process.

In addition to the Asset Management Strategy improvements, the following improvements in the way sewerage assets are managed and planned for the coming 12 months:

Task	Expected Completion
Upgrade of asset register as maintenance, replacement and survey data is collected.	Ongoing
Utilise and develop Asset Information System (AssetFinda), providing deterioration modelling and other analysis tools	Ongoing
Review and develop performance measures and reporting	Ongoing
Use collected data to define acceptable asset deterioration profiles	Ongoing
Review and modify intervention levels for assets of different criticalities	Ongoing
Use any data collected to continually improve accuracy rating	Ongoing
Develop and adopt Asset Management Policy	May 2018
Revalue sewer assets and update the asset register to ensure the financial and technical asset registers reflect the same water infrastructure	May 2017
Restructure finance ledgers so as to separate operation, maintenance and renewal costs at asset class levels	May 2018
Develop and implement data capture and conditioning process	November 2017
Identify deficiencies in current maintenance activities and develop measures to recover them	November 2017
Investigation into recommended frequency of maintenance activities better suited to asset criticality	November 2017
Undertake targeted engagement with the community to resolve acceptable and achievable levels of service	November 2018
Carry out Infrastructure Risk Management Planning process to consider consequences of failure for water assets, and impact of failure on the community	November 2018
Undertake analysis of the sewer treatment system to develop a detailed Capital Upgrades & New Assets Program.	November 2020
Undertake analysis of the sewer treatment system to develop a detailed Disposal Plan.	November 2020
Develop a framework for the prioritisation of capital works	TBD
Determine number of connections for each pipe to improve criticality	TBD

13 Risk Management Plan

Council is committed to the identification and elimination or reduction of risks associated with hazards that arise throughout Council operations as far as reasonably practicable. To facilitate this process an Enterprise Risk Management Plan has been developed which includes the management of risks for each of its assets.

Delivering services through infrastructure is broad, complex and involves significant capital outlays. Managing risks is a key element in the management of infrastructure assets, particularly in the balance of desired/required levels of service and available funding. Significant capital projects could involve significant losses unless they are managed carefully. Such projects may also involve unbalanced cash flows, when large initial investments are necessary before any returns are obtained.

For assets with potentially long lives, risks associated with changing economic conditions, varying levels of demand for services, new competition and maintenance and disposal requirements needs to be analysed and managed to ensure the investment is worthwhile.

Size is not the only consideration. Projects or programs, which are inherently complex will also benefit from particular attention to Risk Management. This might occur when there are important economic or financial aspects, sensitive environmental or safety issues, or complex regulatory and licensing requirements.

Systematic management of risk is a large task requiring a continuous improvement approach. Most service areas are managing operational risk and our challenge is to manage all risks through a consistent framework of infrastructure asset management plans and risk management plans.

From this Plan the following key Risks have been identified:

Table 13.1: Critical Risks and Treatment Plans

Asset	Risk	Consequence	Risk Rating
Treatment Plants	Structural failure	Overflow Poor quality treatment	Very High
	Mechanical/Electrical Failure	Overflow	High
	UV	Poor quality reuse released into environment	Medium
Pumps Stations	Mechanical/Electrical Failure	Overflow	High

One of the outcomes of this assessment is the determination of **Critical Assets.** Critical assets are specific assets which have a high consequence of failure but not necessarily a high likelihood of failure. By identifying critical assets and critical failure modes, Council can appropriately target and refine inspection regimes, maintenance plans and capital expenditure plans.

Operations and maintenances activities may also be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency and higher maintenance intervention levels.

The identification of critical pipe assets is identified in Table 5.1. Pumping stations where there is a potential for failure to risk public safety or property have also been identified as critical, as has the sewer treatment plants. Table 13.2 identifies the critical assets for the sewer system.

Table 13.2: Critical Assets

Critical Assets	Critical Failure Mode	Treatment Plan
Nanima Street Sewer Pump Station	Mechanical/Electrical Failure	Standby pumps
Anzac Avenue Pump Station	Mechanical/Electrical Failure	Standby pumps
Thistle Street Pump Stations	Mechanical/Electrical Failure	Standby pumps
Trickling Filter	Structural Failure	Immediate Repair
Pasveer Channel	Mechanical/Electrical Failure	

Appendix A Delivery Program Renewals

The following assets have been identified for renewal for the next 5 years.

	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Irrigation						
Canowindra Oval Pump Stations Booster PS Electrical	$ 35,100.00					$ 35,100.00
Canowindra Oval Pump Stations Booster PS Mechanical	$ 79,950.00					$ 79,950.00
Canowindra Oval Raw Water Supply Booster PS Electrical			$ 14,400.00			$ 14,400.00
Canowindra Oval Raw Water Supply Booster PS Mechanical	$ 9,000.00					$ 9,000.00
Canowindra Oval Raw Water Supply Booster PS Pump					$ 7,800.00	$ 7,800.00
Canowindra Oval Raw Water Supply Bore Civil Works	$ 18,000.00					$ 18,000.00
Canowindra Oval Raw Water Supply Bore Pump	$ 2,400.00					$ 2,400.00
Canowindra Oval Raw Water Supply Buildings Civil Works	$ 40,950.00					$ 40,950.00
Canowindra Oval Raw Water Supply Buildings Electrical	$ 13,650.00					$ 13,650.00
Canowindra Oval Raw Water Supply Buildings Mechanical	$ 8,190.00					$ 8,190.00
Canowindra Oval Raw Water Supply Filtration Mechanical				$ 94,900.00		$ 94,900.00
Canowindra Oval Raw Water Supply Filtration Media	$ 3,120.00					$ 3,120.00
Canowindra Oval Raw Water Supply Siteworks Mechanical				$ 6,760.00		$ 6,760.00
Pump Station						
Canowindra Anzac Ave SPS Pump Stations Dry Well Civil Works	$ 548,862.27					$ 548,862.27
Canowindra Anzac Ave SPS Pump Stations Dry Well Electrical	$ 19,500.00					$ 19,500.00
Canowindra Anzac Ave SPS Pump Stations Dry Well Mechanical				$ 32,500.00		$ 32,500.00
Canowindra Anzac Ave SPS Pump Stations Electrical	$ 76,700.00					$ 76,700.00
Canowindra Anzac Ave SPS Pump Stations Electrical RTU				$ 18,200.00		$ 18,200.00
Canowindra Anzac Ave SPS Pump Stations Pipework	$ 58,500.00					$ 58,500.00
Canowindra Anzac Ave SPS Pump Stations Pump 1	$ 17,550.00					$ 17,550.00
Canowindra Anzac Ave SPS Pump Stations Pump 2	$ 17,550.00					$ 17,550.00
Canowindra Anzac Ave SPS Pump Stations Siteworks	$ 11,375.00					$ 11,375.00
Canowindra East St SPS Pump Stations Electrical	$ 49,400.00					$ 49,400.00
Canowindra East St SPS Pump Stations Electrical RTU				$ 15,600.00		$ 15,600.00
Canowindra East St SPS Pump Stations Pipework	$ 11,050.00					$ 11,050.00
Canowindra East St SPS Pump Stations Pump 1	$ 5,850.00					$ 5,850.00
Canowindra East St SPS Pump Stations Pump 2	$ 5,850.00					$ 5,850.00
Canowindra East St SPS Pump Stations Siteworks	$ 11,375.00					$ 11,375.00
Canowindra East St SPS Pump Stations Valves	$ 7,800.00					$ 7,800.00
Canowindra East St SPS Pump Stations Wet Well Civil Works	$ 27,950.00					$ 27,950.00
Canowindra East St SPS Pump Stations Wet Well Mechanical	$ 3,250.00					$ 3,250.00
Canowindra Moyne St SPS Pump Stations Electrical	$ 49,400.00					$ 49,400.00

	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Canowindra Moyne St SPS Pump Stations Electrical RTU				$ 15,600.00		$ 15,600.00
Canowindra Moyne St SPS Pump Stations Pipework	$ 8,450.00					$ 8,450.00
Canowindra Moyne St SPS Pump Stations Pump 1	$ 3,250.00					$ 3,250.00
Canowindra Moyne St SPS Pump Stations Pump 2	$ 3,250.00					$ 3,250.00
Canowindra Moyne St SPS Pump Stations Siteworks	$ 11,375.00					$ 11,375.00
Canowindra Moyne St SPS Pump Stations Valves				$ 6,500.00		$ 6,500.00
Canowindra Moyne St SPS Pump Stations Wet Well Civil Works	$ 27,950.00					$ 27,950.00
Canowindra Moyne St SPS Pump Stations Wet Well Mechanical	$ 3,250.00					$ 3,250.00
Canowindra South SPS Pump Stations Electrical			$ 49,400.00			$ 49,400.00
Canowindra South SPS Pump Stations Electrical RTU			$ 15,600.00			$ 15,600.00
Canowindra South SPS Pump Stations Pipework				$ 12,350.00		$ 12,350.00
Canowindra South SPS Pump Stations Pump 1				$ 17,550.00		$ 17,550.00
Canowindra South SPS Pump Stations Pump 2				$ 17,550.00		$ 17,550.00
Canowindra South SPS Pump Stations Siteworks				$ 11,375.00		$ 11,375.00
Canowindra South SPS Pump Stations Valves				$ 7,800.00		$ 7,800.00
Canowindra South SPS Pump Stations Wet Well Mechanical			$ 6,500.00			$ 6,500.00
Eugowra Namina St SPS Pump Stations Electrical			$ 49,400.00			$ 49,400.00
Eugowra Namina St SPS Pump Stations Pipework				$ 11,050.00		$ 11,050.00
Eugowra Namina St SPS Pump Stations Pump 1					$ 5,850.00	$ 5,850.00
Eugowra Namina St SPS Pump Stations Pump 2	$ 5,850.00					$ 5,850.00
Eugowra Namina St SPS Pump Stations Siteworks				$ 11,375.00		$ 11,375.00
Eugowra Namina St SPS Pump Stations Valves	$ 6,500.00					$ 6,500.00
Eugowra Namina St SPS Pump Stations Wet Well Mechanical	$ 6,500.00					$ 6,500.00
Eugowra Parkes St SPS Pump Stations Electrical			$ 49,400.00			$ 49,400.00
Eugowra Parkes St SPS Pump Stations Gantry				$ 9,100.00		$ 9,100.00
Eugowra Parkes St SPS Pump Stations Pump 1	$ 3,250.00					$ 3,250.00
Eugowra Parkes St SPS Pump Stations Pump 2	$ 3,250.00					$ 3,250.00
Eugowra Parkes St SPS Pump Stations Siteworks				$ 11,375.00		$ 11,375.00
Eugowra Parkes St SPS Pump Stations Valves	$ 3,250.00					$ 3,250.00
Eugowra Parkes St SPS Pump Stations Wet Well Mechanical			$ 4,550.00			$ 4,550.00
Eugowra Showground SPS Pump Stations Electrical			$ 49,400.00			$ 49,400.00
Eugowra Showground SPS Pump Stations Gantry				$ 9,100.00		$ 9,100.00
Eugowra Showground SPS Pump Stations Pump 1			$ 5,850.00			$ 5,850.00
Eugowra Showground SPS Pump Stations Pump 2	$ 5,850.00					$ 5,850.00
Eugowra Showground SPS Pump Stations Siteworks	$ 11,375.00					$ 11,375.00

	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Eugowra Showground SPS Pump Stations Wet Well Mechanical					$ 4,550.00	$ 4,550.00
Manildra Gumble Rd SPS Pump Stations Odour Control System				$ 4,550.00		$ 4,550.00
Manildra Gumble Rd SPS Pump Stations Pump 1				$ 17,550.00		$ 17,550.00
Manildra Gumble Rd SPS Pump Stations Pump 2				$ 17,550.00		$ 17,550.00
Manildra Gumble Rd SPS Pump Stations Wet Well Mechanical					$ 19,500.00	$ 19,500.00
Molong Betts St SPS Pump Stations Electrical			$ 53,040.00			$ 53,040.00
Molong Betts St SPS Pump Stations Pipework	$ 19,500.00					$ 19,500.00
Molong Betts St SPS Pump Stations Pump 1	$ 3,250.00					$ 3,250.00
Molong Betts St SPS Pump Stations Pump 2	$ 3,250.00					$ 3,250.00
Molong Betts St SPS Pump Stations Siteworks	$ 23,400.00					$ 23,400.00
Molong Betts St SPS Pump Stations Valves	$ 13,000.00					$ 13,000.00
Molong Betts St SPS Pump Stations Wet Well Mechanical	$ 15,600.00					$ 15,600.00
Molong King St SPS Pump Stations Electrical			$ 24,700.00			$ 24,700.00
Molong King St SPS Pump Stations Electrical RTU				$ 15,600.00		$ 15,600.00
Molong King St SPS Pump Stations Pump 1	$ 5,850.00					$ 5,850.00
Molong King St SPS Pump Stations Pump 2	$ 5,850.00					$ 5,850.00
Molong King St SPS Pump Stations Siteworks				$ 6,500.00		$ 6,500.00
Molong King St SPS Pump Stations Wet Well Mechanical	$ 4,550.00					$ 4,550.00
Molong Thistle St SPS Pump Stations Electrical	$ 60,320.00					$ 60,320.00
Molong Thistle St SPS Pump Stations Gantry				$ 13,000.00		$ 13,000.00
Molong Thistle St SPS Pump Stations Pipework	$ 19,500.00					$ 19,500.00
Molong Thistle St SPS Pump Stations Pump 1	$ 32,500.00					$ 32,500.00
Molong Thistle St SPS Pump Stations Pump 2	$ 32,500.00					$ 32,500.00
Molong Thistle St SPS Pump Stations Valves	$ 10,400.00					$ 10,400.00
Molong Thistle St SPS Pump Stations Wet Well Civil Works	$ 90,350.00					$ 90,350.00
Molong Thistle St SPS Pump Stations Wet Well Mechanical	$ 15,600.00					$ 15,600.00
Treatment Plant						
Canowindra WWTP Biological Treatment Trickling Filter Civil Works	$ 514,546.29					$ 514,546.29
Canowindra WWTP Biological Treatment Trickling Filter Mechanical	$ 32,500.00					$ 32,500.00
Canowindra WWTP Effluent Reuse Effluent Irrigation PS Electrical					$ 33,800.00	$ 33,800.00
Canowindra WWTP Effluent Reuse UV Disinfection Lamps			$ 3,250.00			$ 3,250.00
Canowindra WWTP Effluent Transfer Effluent Transfer PS Electrical		$ 26,000.00				$ 26,000.00
Canowindra WWTP Effluent Transfer Effluent Transfer PS Mechanical					$ 22,100.00	$ 22,100.00
Canowindra WWTP Preliminary Treatment Inlet works Civil Works	$ 45,500.00					$ 45,500.00
Canowindra WWTP Preliminary Treatment Inlet works Mechanical		$ 4,550.00				$ 4,550.00
Canowindra WWTP Primary Clarification Clarifiers Civil Works	$ 318,396.00					$ 318,396.00

	2017/18	2018/19	2019/20	2020/21	2021/22	Total
Canowindra WWTP Primary Clarification Clarifiers Mechanical		$ 65,000.00				$ 65,000.00
Canowindra WWTP Process Process Systems Control	$ 15,600.00					$ 15,600.00
Canowindra WWTP Process Process Systems Mechanical			$ 97,500.00			$ 97,500.00
Canowindra WWTP Secondary Clarification Hummus Tank Civil Works			$ 165,412.00			$ 165,412.00
Canowindra WWTP Siteworks Buildings Electrical					$ 11,115.00	$ 11,115.00
Canowindra WWTP Siteworks Services Mechanical					$ 59,150.00	$ 59,150.00
Canowindra WWTP Sludge Dewatering Drying Beds Civil Works	$ 120,120.00					$ 120,120.00
Canowindra WWTP Sludge Digestion Digestors Civil Works	$ 484,767.67					$ 484,767.67
Canowindra WWTP Sludge Digestion Digestors Electrical	$ 9,750.00					$ 9,750.00
Canowindra WWTP Sludge Digestion Digestors Mechanical		$ 39,000.00				$ 39,000.00
Cudal WWTP Biological Treatment Effluent Lagoons Electrical				$ 19,500.00		$ 19,500.00
Cudal WWTP Effluent Reuse Effluent Reuse PS Electrical				$ 11,050.00		$ 11,050.00
Cudal WWTP Preliminary Treatment Inlet Works Mechanical				$ 4,550.00		$ 4,550.00
Cudal WWTP Process Process Systems Control	$ 19,500.00					$ 19,500.00
Molong WWTP Biological Treatment Pasveer Channel Civil Works			$ 623,350.00			$ 623,350.00
Molong WWTP Biological Treatment Pasveer Channel Electrical		$ 61,750.00				$ 61,750.00
Molong WWTP Biological Treatment Pasveer Channel Mechanical	$ 286,000.00					$ 286,000.00
Molong WWTP Effluent Disinfection UV Disinfection Lamps	$ 4,550.00					$ 4,550.00
Molong WWTP Process Process Systems Civil Works			$ 19,500.00			$ 19,500.00
Molong WWTP Process Process Systems Control		$ 19,500.00				$ 19,500.00
Molong WWTP Process Process Systems Mechanical			$ 104,000.00			$ 104,000.00
Molong WWTP Siteworks Buildings Electrical		$ 14,300.00				$ 14,300.00
Molong WWTP Siteworks Buildings Mechanical		$ 8,580.00				$ 8,580.00
Molong WWTP Siteworks Services Civil Works		$114,400.00				$ 114,400.00
Molong WWTP Siteworks Services Mechanical		$ 63,700.00				$ 63,700.00
Yeoval WWTP Process Process Systems Control				$ 19,500.00		$ 19,500.00
TOTAL	$ 3,442,322.23	$416,780.00	$1,335,252.00	$ 438,035.00	$163,865.00	$ 5,796,254.23

Appendix B Upgrade / New Capital Works Program

Program for Upgrade / New Capital Works will be included in future revisions of this asset management plan.

Appendix C 10 Year Financial Plan (2017 $,000)

Year	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	Average
Income											
Lease Rental	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3	$ 2.3
Contributions	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1	$ 91.1
Fees & Charges	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2	$ 2,023.2
Interest	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0	$ 75.0
Discretionary Fees	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8	$ 11.8
Total Income	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5	$ 2,203.5
Renewals											
Treatment Plant	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4	$ 540.4
Pump Station	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0	$ 120.0
Telemetry	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Rising Mains	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Reticulation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Manholes	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Irrigation	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Renewal	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5	$ 660.5
Maintenance											
Salaries	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2	$ 83.2
Service Contracts	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6	$ 245.6
Travel	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2	$ 16.2
Overheads & OnCosts	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0	$ 88.0
Materials & Consumables	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8	$ 48.8
Total Maintenance	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9	$ 481.9
Operations											
Licence Agreements	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2	$ 1.2
Donations & Contributions	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6	$ 8.6
Rates Expenses	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2	$ 138.2
Membership Fees	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4	$ 1.4
Overheads & OnCosts	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2	$ 221.2
Salaries	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5	$ 261.5
Utilities	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2	$ 63.2
Plant Running Costs	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3	$ 105.3
Total Operations	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5	$ 800.5
Upgrade / Expansion											
TBD											
Total Upgrade/Expansion											
Total Expenditure	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5	$ 2,163.5
Rolling Backlog	$ 2,781.9	$ 2,538.2	$ 2,988.2	$ 2,664.1	$ 2,159.7						