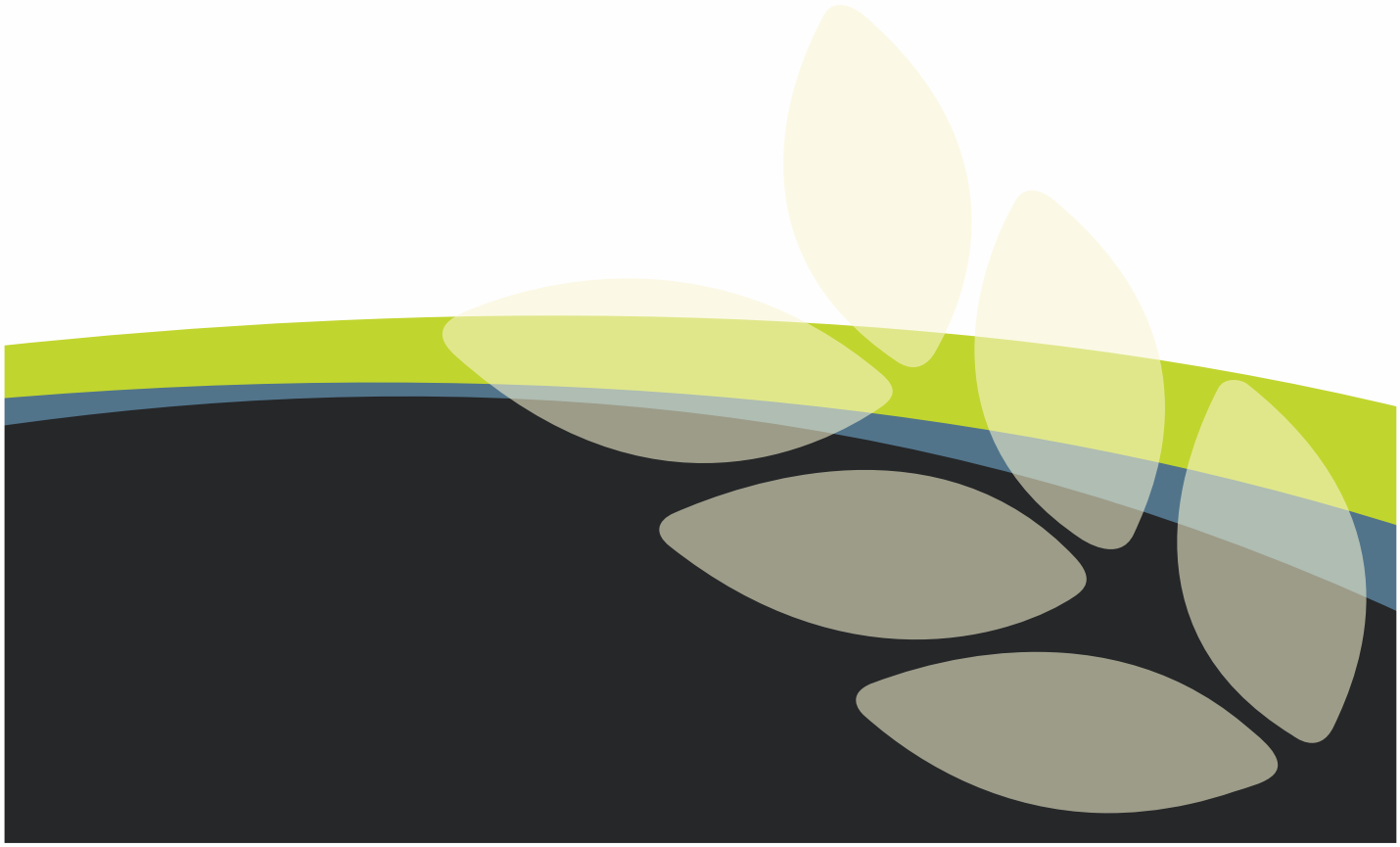
COOTAMUNDRA-GUNDAGAI REGIONAL COUNCIL

Asset Management Plan 2018/2028



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Version Control

Ref	Date	Description	Council Resolution
0.1	31 July 2018	Presented to Council to facilitate public exhibition	167/2018
1.0	25 September 2018	Adopted	202/2018

Cootamundra-Gundagai Regional Council

Transport Asset Management Plan

Draft version 1.2 July 2018

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Document Control					
Rev No	**Date**	**Revision Details**	**Author**	**Verifier**	**Approver**
1.0	May 2018	Draft	J Hansen & M Brearley		
1.1	June 2018	Draft – Adjustments to unsealed pavements and Renewal Programs to align with Moloney budget forecasts	J Hansen & M Brearley		
1.2	July 2018	Draft – Minor adjustments to reflect comments from Workshop held 17 July 2018	J Hansen & M Brearley		

1. Executive Summary

It is the objective of Council to:

- *develop and implement strategies to deliver safe and accessible local roads, bridges, footpaths and parking* and
- *ensure transportation networks link our region with other regional centres and cities and support economic, environmental and community growth*

(Draft Cootamundra-Gundagai Regional Council Community Strategic Plan 2018 Objectives 2.1c and 3.2d).

According to an independent road condition survey by Maloney Asset Management, Council's road network had a replacement value of **$313 million,** and a written down value of **$172 million** as at 30 June 2017.

This plan assists Council in the decision making process and is presented at a high level to provide key information that can used in the determination of levels of service and funding required. Table 1.1 identifies the asset categories in this plan, the ten (10) year average costs and any funding gap between the available renewal budget and predicted renewal requirements.

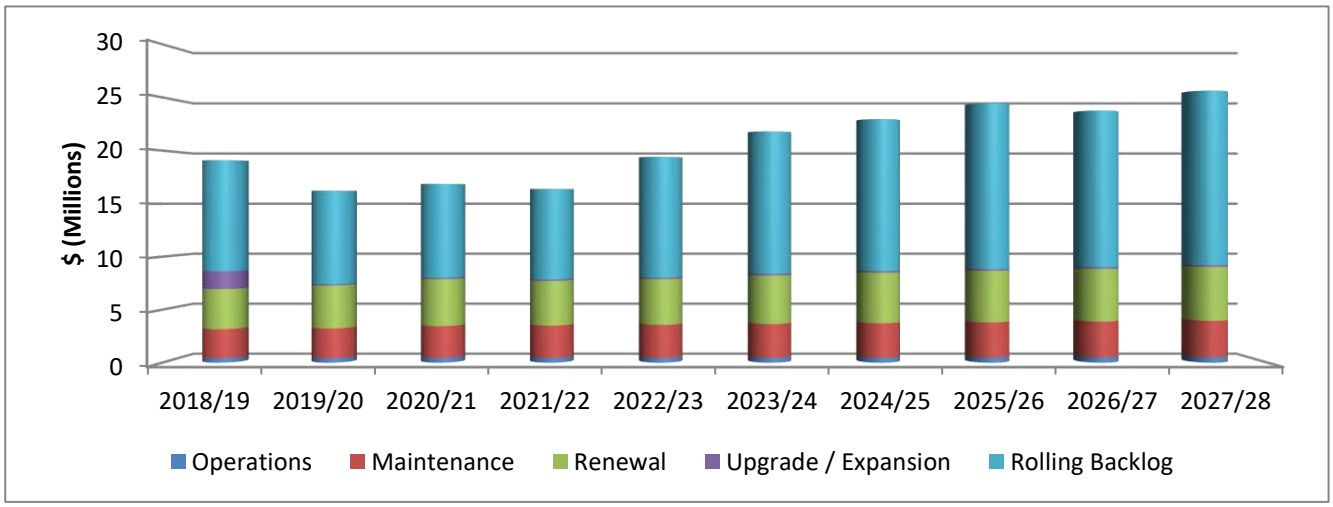
Table 1.1: Transport Asset Portfolio Overview (in 2018 $,000)

Asset	Fair Value	Operation & Maintenance	Renewal	Upgrade & New	Funding Gap	Backlog Year 1	Backlog Year 10
Pavement	148,081	2,913	2,409	194	186	2,970	1,857
Seal	26,692	0	1,526	0	862	3,058	8,616
Kerb	22,371	0	420	105	162	2,839	1,622
Footpaths	4,156	615	77	0	0	185	0
Bridge	50,528	64	72	0	444	1,432	4,439
Other	129,662	0	0	0	0	0	0
Total	**381,490**	**3,592**	**4,504**	**299**	**1654**	**10,484**	**16,534**

***Notes**:*

1. *Operations & Maintenance, Renewal and Upgrade & New Figures are the 10-year annual average amounts indexed by 2.0% p.a.*
2. *Funding Gap is the gap between required renewal expenditure and the renewal budget, averaged out over 10 years.*
3. *Backlog Year 1 is significant because Council has a cohort of assets that have deteriorated to the intervention level in recent years, that have not been renewed, due to budget limitations.*

Figure 1.1: What will we spend over the next 10 years (2018 $M), and what is unfunded?

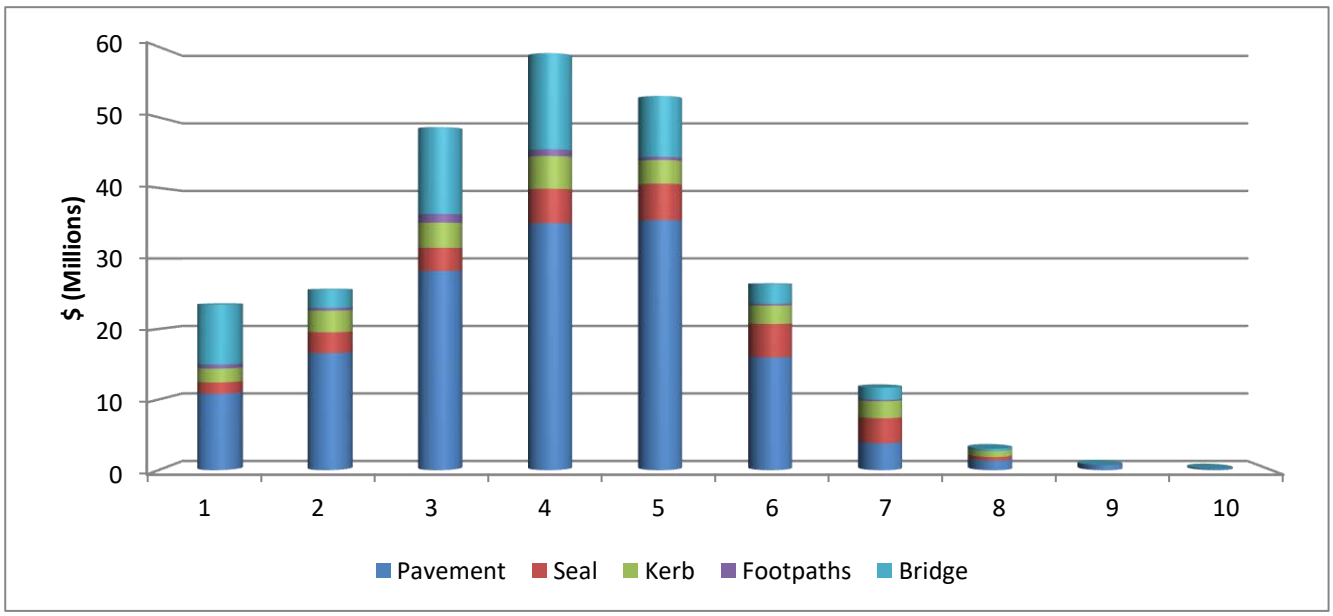


The figure on the previous page identifies the proposed expenditure over the next 10 years together with the backlog in any year. The graph indicates that whilst the backlog remains relatively stable over the first 4 years, there is a steady increase towards the end of ten years.

The current funding levels allocated towards roads maintenance and renewal, are not adequate to reduce the backlog. Modelling undertaken by Moloney Asset Management Systems[1] indicates that if Council is to reduce the backlog, an additional 10% of funding compounding each year would be required. Clearly, this creates unrealistic financial burdens on Council, and Council will be considering options to manage this. Such options include reducing the level of service provided for the road network, or seeking alternative sources of income.

The current condition of our assets is shown in the following graph based on the value of each asset in each of 10 conditions ranging from 1 to 10, with 1 being near new and 10 as a completely failed asset.

Figure 1.2: What condition are our assets in ($M)?



Muttama Rd is the regional road link between the population centres of Cootamundra and Gundagai, and is considered the most critical road assets and the highest priority for renewal and upgrading expenditure. The crossings of Reef Creek and Mooney Mooney Creek are inadequate for the high heavy vehicle traffic loading, and upgrading is currently unfunded. Council will consider applying for a change to the road classification from Regional Road to State Road.

The process of managing our transport assets is one of continually improving the knowledge Council has including maintaining up to date asset registers, condition ratings, and the cost of work on the asset and the rate at which assets deteriorate and reach their intervention level. Section 13 contains details of the assumptions made and plans to further improve the details contained in the next Plan.

Moloney Asset Management Systems undertook a road asset condition survey of Cootamundra Shire roads in June 2016 and Gundagai Shire roads in March 2015. This data was aggregated to populate the roads asset register of the new Cootamundra-Gundagai Regional Council and inform this AM Plan. Because the underlying data sets are out of alignment, Council plans undertake a complete **road asset conditions survey** concurrently across Cootamundra and Gundagai districts in 2019.

[1] "Report Following the Survey of Road Assets for CGRC June 2017" Moloney Asset Management Systems

2. Strategic Objectives

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

1. Link our region with other regional centres and cities and support economic, environmental and community growth
2. Deliver safe and accessible local roads, bridges, footpaths and parking
3. Ensure the road assets are maintained at a safe and functional standard as set out in this asset management plan.
4. Ensure that road assets are managed to deliver the requirements of Council's Asset Management Policy and Asset Management Strategy.

Cootamundra-Gundagai Regional Council developed a comprehensive community engagement strategy to ensure a broad range of opinions; ideas and visions were captured to help shape the Draft Community Strategic Plan 2018-28. The outcomes & strategies supported by that plan will be detailed in the Asset Management Strategy.

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
Asset Management Policy	How we manage assets
Asset Management Strategy	Overall direction of asset management and portfolio summary
Civica Asset Management System (AM)	Electronic system that contains the asset register, condition ratings and used to model future renewals
GIS	Geographical information system that produces maps of assets

The draft Cootamundra-Gundagai Regional Council CSP outcomes supported by the Road AMP include:

- Transport networks provide for better connectivity within and outside the region (2.1c)
- Low incidence of traffic and pedestrian accidents (3.2d)
- Community members satisfied with parking options (3.2d)

3. Services Provided & Classification

Council provides the Cootamundra-Gundagai Region and its wider rural community with road infrastructure to enable the safe movement of pedestrians, cyclists, motorists and freight. The establishment of a hierarchy for roads provides a useful tool for the planning of transport systems and ensuring the efficient allocation of resources to roads based on maintaining levels of service appropriate to their function within the hierarchy.

Council's **road hierarchy** reflects the *IPWEA NSW Local Government Functional Road Classification* with an additional level (unformed local access roads) added to meet the specific needs of a rural Council.

1. **Arterial Roads** – Connect to State Roads.
    - Mainly Regional Roads but other important roads can be Arterial Roads.
    - Carry traffic to, from and across council areas.
    - Provide for traffic movements between regions. Carry the highest volumes of traffic, light and heavy.
    - Extend to the perimeter of the Shire boundary.
    - Acknowledged as an important road by Council, other road authorities and road users.
    - Are subject to various avenues of funding (State, Local and development contributions).

2. **Primary Collector Roads (Class A)** – Includes **High Traffic Urban**.
    - Roads which receive relatively high traffic volumes but are not Arterial Roads.
    - Provide linkages between Arterial Roads.
    - Mainly used by local traffic, both light and heavy vehicles.
    - Does not include "dead ends" or "No Through Roads"

3. **Local Collector Roads (Class B)**-Includes **Medium Traffic Urban**.
    - Local roads that carry traffic and allow access to residential and rural property.
    - Provide linkages from Primary Collector Roads to the local access roads.
    - Referred to as a "minor" road.
    - Receives less traffic than a Primary Collector Road.
    - Can be a through or non-through road (dead end) but does provide access to lower order local access roads.
    - There may be an industrial presence on the road.

4. **Local Access Roads (Class C)** – Includes **Low Traffic Urban**.
    - Road is maintained by Council.
    - Class includes rear lanes in urban areas.
    - Provides access to individual properties or a small number of properties.
    - Branches out from another category of road.
    - Local town streets in an urban setting.
    - Generally, "no through roads" or dead ends but classification includes rear lanes which may be through roads.

5. **Unformed Local Access Roads** –
    - Roads not maintained by Council.
    - Includes unformed service tracks.
    - Road has no constructed road formation.
    - Provide access to a very small number of properties only.
    - Branches out from another category of road.
    - Mainly rural. Not urban.
    - Generally, "no through roads" or dead ends.

The road assets have a fair value of $172 million on the 30 June 2017, and details of the major components are contained in Table 3.1 together with their replacement cost.

Table 3.1: What is provided ($,000)?

Asset Description	Total Quantity	Units	Total Replacement Cost ($)	Written Down Value ($)
Footpath	34,797	Metres	$4,780,894	$2,982,418
Kerb and Gutter	131,884	Metres	$23,668,240	$12,199,614
Sealed Pavements	710,374	Metres	$164,418,468	$82,627,253
Unsealed Pavements	606,492	Metres	$36,721,553	$30,500,141
Sealed Surface	710,374	Metres	$32,716,431	$14,513,864
Bridges	17,365	Square Metres	$50,915,882	$28,701,609
			$313,221,468.00	**$171,524,899.00**

4. Levels of Service

One of the basic tenets of sound asset management practice is to provide the level of service the current and future community want and are prepared to pay for, in the most cost effective way (NZ NAMS 2007)

Transport assets have been categorised into classes to assist in the determination of Levels of Service (LOS) which are grouped into:

- Community LOS – relates to how the community receives the service in terms of safety, quality, quantity, reliability responsiveness, cost efficiency and legislative compliance; and
- Technical LOS – are the technical measures of performance developed to ensure the minimum community levels of service are met.

Table 4.1 outlines what the community desires for each asset Category and how Council will deliver it.

Table 4.1: What does the Community want?

Category	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)
Sealed Roads	Sound smooth road surface to travel safely on	Sealed roads will be resealed or rehabilitated when roughness exceeds 150 nmi
Unsealed roads	All weather access provided to everyone	All roads classed as local and higher will be maintained at condition 7 or higher
Kerb and Gutter	Water doesn't pond in driveways for more than 2 days after a storm	K&G rehabilitated or renewed at or prior to condition 7
Footpaths	Sound, non slippery pathways provided to enable safe travel throughout the City	Trip hazards managed in accordance with the Council Policy – 20mm trip hazard
Bridges	Bridges are accessible during periods of moderate rainfall.	Hydraulic capacity caters for at least a 1 in 10 year storm. (Exception is the Mundarlow Bridge, which is constrained by environmental flows in the Murrumbidgee River.)
Culverts	Roads can be safety used during periods of moderate rainfall.	Hydraulic capacity of road drainage systems caters for at least a 1 in 10 year storm
Causeways	Causeways to reopen within 24 hours after a storm event. Alternative routes (detours) available for all causeways.	Planned replacement of priority causeways with more reliable structures in the long term in order to improve continuity of service.

5. Condition of Our Assets

Council maintains a register of road asset data which includes information on the condition of road assets. Council engages an expert consultant to assess the condition of all road asset every three years.

Assets are rated on a 1 (Near New) to 10 (Completely Failed) scale consistent with the Maloney model and asset management best practice outlined in the IPWEA International Infrastructure Management Manual.

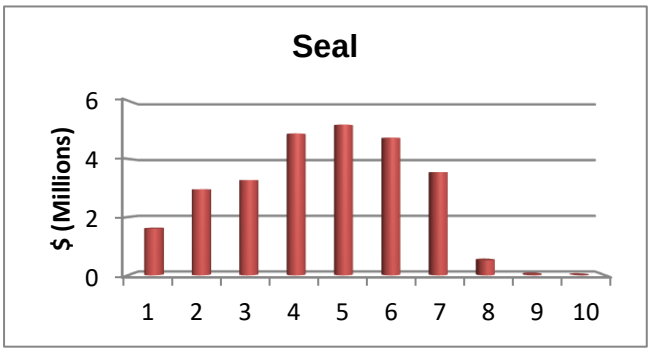
The intent of Council is not to undertake renewal on an asset until it reaches its 'Intervention Level', that is the condition at which the community has determined renewal is required based on the LOS analysis. Typically assets will be renewed between condition 6 & 8 which ranges from fair/poor to very poor, depending on their classification.

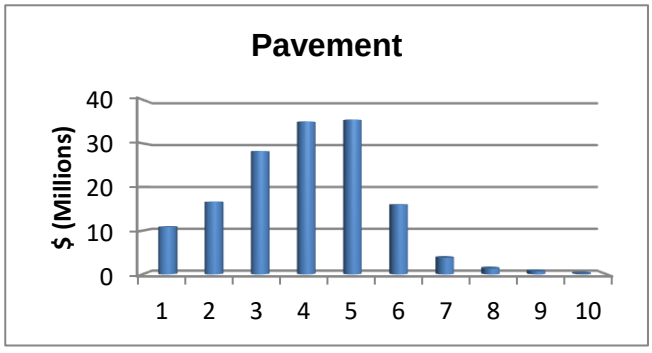
Table 5.1: What are our Intervention Levels to Renew an Asset?

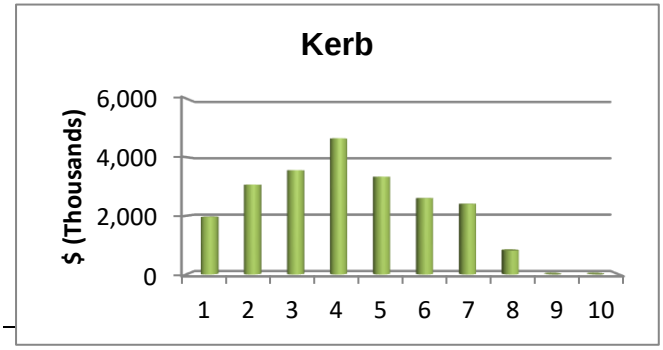
Component	Class	Intervention Level	Useful Life (years)
Road Seals (Flush Seal)	All Roads	7	12 to 20[2]
Road Seals (AC)	All Roads	7	35
Sealed Road Pavements	Collector and above	7	65 to 90
Sealed Road Pavements	Local Access Roads	7	80 to 100
Gravel Pavements	Local Access Roads	7	30
Kerb & Gutter	All Roads	7	60 to 80
Footpaths (Concrete)	All Roads	7	60
Footpaths (AC & Pavers)	All Roads	7	60

Each asset's condition is maintained in the Asset Register and the graphs below gives the condition profile of the five main asset types.

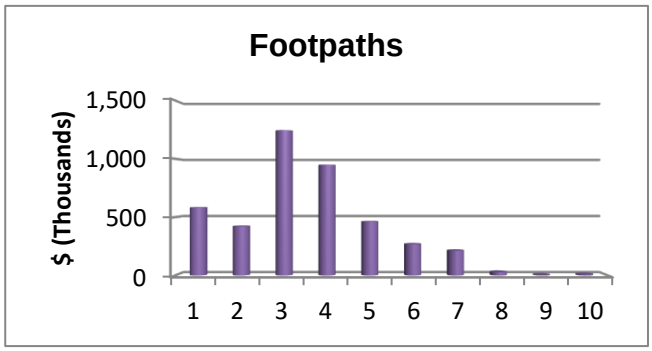
Figure 5.2: What Conditions are our top assets in ($M)?

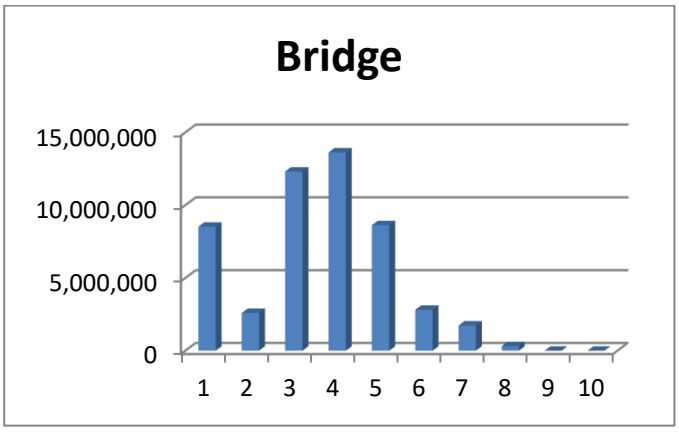






[2] "Report Following the Survey of Road Assets for CGRC June 2017" Moloney Asset Management Systems – Page 9


Footpaths
$ (Thousands)
1,500
1,000
500
0
1 2 3 4 5 6 7 8 9 10


Bridge
15,000,000
10,000,000
5,000,000
0
1 2 3 4 5 6 7 8 9 10

6. Operations

Operational activities are those regular activities that are required to continuously provide the service including management expenses, street lighting, asset inspection, street furniture, signs, line marking and other overheads.

The road network is inspected regularly for safety, for valuation and in order to develop annual cyclic maintenance programs including:

- Footpath and kerb and gutter repair programs
- Gravel re-sheeting program (unsealed roads)
- Maintenance grading program (unsealed roads)

Table 6.1: When do we undertake Inspections?

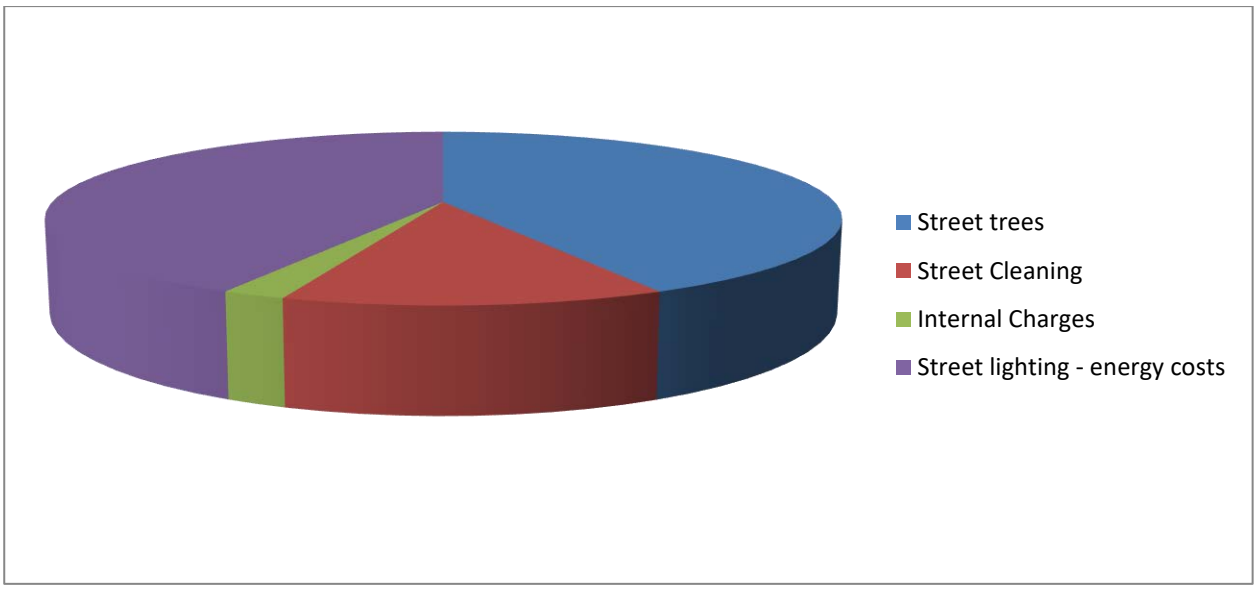
Inspection	Frequency
Condition Assessments	Three Yearly (Moloney)
Sealed Roads	Annually
Gravel Roads	Annually
Kerb & Gutter	Three yearly
Footpaths	Three yearly
Safety Inspections	Weekly

Table 6.2: What are our Operational Costs?

Item	Budget ($,000)
Street trees	$198
Street Cleaning	$61
Internal Charges	$10
Street lighting - energy costs	$198
Total	**$468**

Note: Budget listed in Table 6.2 above is the 10 year average Operations Expense ($,000) in 2018 dollars.

Figure 6.1: 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 useful life. It includes work on an asset where a portion may fail and need immediate repair to make it operational again. It may be either planned where works are programmed in or cyclic in nature or reactive in response to storm damage, vandalism etc. The majority of the maintenance undertaken by Council is planned or cyclic in nature.

Planned or reactive maintenance are defined as follows:

- Reactive maintenance – unplanned repair work carried out in response to service requests.
- Planned maintenance – repair work that is identified, scheduled and managed. Planned maintenance activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

The level of service and standards of care for maintenance is carried out in accordance with Council's Asset Management Policy and Asset Management Plan. Current maintenance expenditure levels are considered to be adequate to meet required service levels.

Future revision of this asset management plan will include linking required maintenance expenditures with required service levels in the Community Strategic Plan.

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

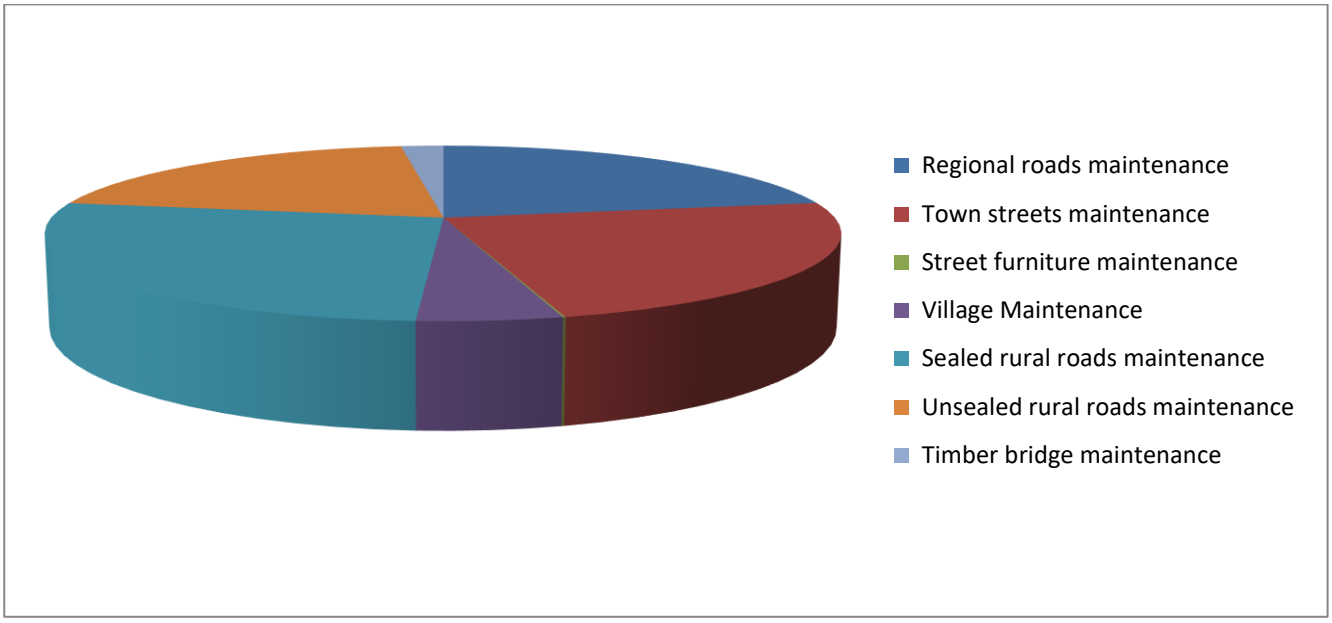
Activity	Regional	Collector	Local Access
Maintenance Grading	Every 6 months	Annually	Every 2 years
Pothole patching at intervention	Weekly	Fortnightly	Monthly
Sign Maintenance	Annually		
Shoulder maintenance	Annually		
Footpath grinding	Annually		
K&G Repairs	Every 6 months		
Line marking	Every 6 months		
Bridge deck repairs	Annually		
Clearing table drains and culverts	Annually		
Guardrail	Annually		
Vegetation management	Annually		

Table 7.2: What are our Maintenance Costs?

Item	Budget ($,000)
Regional roads maintenance	$692
Town streets maintenance	$741
Street furniture maintenance	$3
Village Maintenance	$156
Sealed rural roads maintenance	$840
Unsealed rural roads maintenance	$629
Timber bridge maintenance	$64
Total	**$3,125**

Note: Budget listed in Table 6.2 is the 10 year average Maintenance Expense ($,000) in 2018 dollars.

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



Adjusting Levels of Service

The opportunity to adjust the level of service provided is primarily through reducing reaction time to repair defects or increasing the frequency of maintenance activities. Any increase on current levels of service will require an additional budget allocation.

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.

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. The three-yearly inspection program and updating of the asset register using the Moloney Asset Management System ensures a reliable asset register, and assists us in forecasting our renewal needs. Renewals 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.

Pavement renewals are undertaken using in-situ rehabilitation. A pavement stabilisation additive is incorporated into the existing pavement via the use of a road reclaimer. The pavement is then re-compacted and sealed. Renewing or "Resealing" existing road surfaces at the optimum time reduces the amount of "reactive" pothole patching required and extends the life of the underlying pavement. Council achieves excellent value for money outcomes using this technique.

Footpath renewals are based on the risk that the asset poses to pedestrians. Concrete footpath and cycleway deterioration is generally the result of tree root damage. Asphalt footpath and cycleway deterioration can be a result of age deterioration and/or tree root damage. Renewal work is carried out in accordance with the following standards and specifications:

- AUSPEC Construction Specification & Relevant Australian Standards
- RMS Road Maintenance Contract & Road Works Quality Assurance Specifications
- Bridge Design AS 5100

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 over the next two years are listed in **Appendix B**. The first year of the program will be considered in the development of Council's next Operational Plan and the remaining years of work will be assessed each year to confirm that the asset has reached its intervention level prior to the work being scheduled.

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' columns. Note a negative figure in a backlog column is indicative of the work required that year only, practically, those funds would be diverted to another program that has a deficit that year. Budget, required and average gap figures are based on a 20 year annual average amount.

Table 8.1: What are our Renewal Costs, Gap and Backlog (2018 $,000)?

Activity	Budget	Required	Gap	Backlog Year 1	Backlog Year 10
Pavement	2,409	2,594	186	2,970	1,857
Seal	1,526	2,388	862	3,058	8,616
Kerb	420	582	162	2,839	1,622
Footpaths	77	68	0	185	0
Bridge	72	516	444	1,432	4,439
Total	**4,504**	**6,148**	**1654**	**10,484**	**16,534**

NOTES

1. *Budget Figures are the 10 year annual average amounts indexed by 2% p.a.*

2. *The budget split between pavement and seal may not reflect actual expenditure on each activity. Council is intending to undertake a number of road rehabilitation projects over the coming decade. These projects have been categorised as pavement renewal for the purpose of this plan, however they will have a seal component. Whilst the quantum of backlog shown above is reliable, the split between pavement backlog and seal backlog shown above underestimates the backlog for pavement and over-estimates the backlog for pavements.*

The following graphs show the proposed expenditure on renewals over the next 10 years and the rolling backlog in any one year over that period. Two graphs are presented due to the high impact of the rolling backlog. Figure 8.1 indicates that, based on current projections, Council will spend approximately $4,504 million per annum on renewals.

Figure 8.1: What will we spend (2018 $,000) over the next 10 years on Renewal?

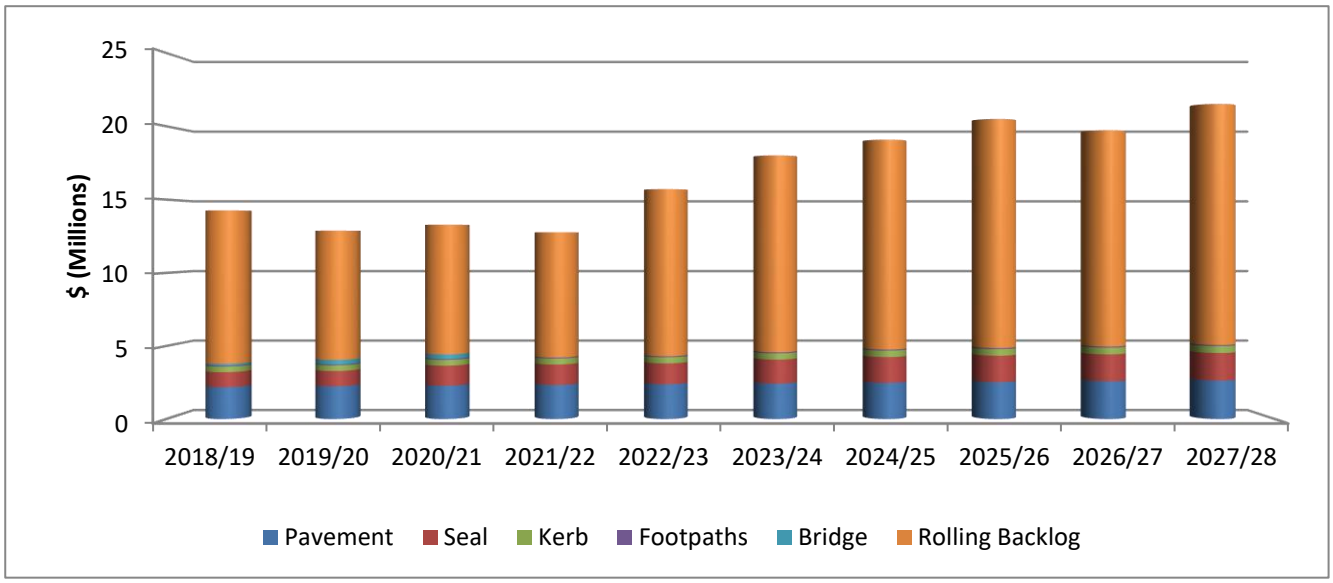
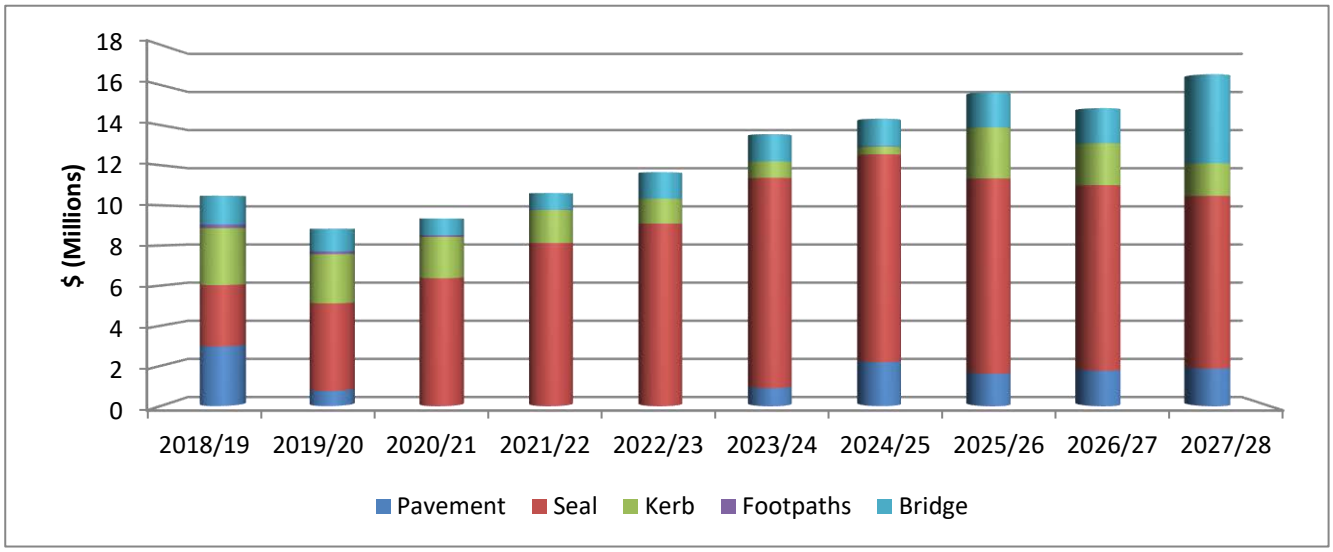


Figure 8.2 indicates that in any year the value of work exceeding the intervention levels set in this Asset Plan could be as high as $16.445 million. However, from Table 8.1, when considering the renewals required over the next 10 years, an additional $1.644 million per year would be required to ensure no backlog of works in 2028/29.

Figure 8.2: What are the projected rolling backlog splits ($,000)?



Note, the backlog split between pavement and seal may not reflect actual expenditure on each activity. Council is intending to undertake a number of road rehabilitation projects over the coming decade. These projects have been

categorised as pavement renewal for the purpose of this plan, however they will have a seal component. Whilst the quantum of backlog shown above is reliable, the pavement backlog shown is underestimated and the seal backlog shown is overestimated. This anomaly could be corrected in future versions of the plan by separating out the seal and the pavement component for each rehabilitation project.

Council intends to invest in asset renewal at a rate of approximately $4.5 million per year. However, the average annual funding required to renew all road assets when they reach intervention level exceeds $6 million. Unless an additional funding source is obtained, the backlog will continue to escalate. Council is considering applying for a Special Rate Variation to obtain additional funding for renewal.

Lifecycle costs

The lifecycle costs are determined based on the total cost of ownership of each asset including operations, maintenance, renewal and disposal costs. Council does not have the data available at this time for the accurate calculation of lifecycle costs for transport assets. Because Cootamundra-Gundagai is a newly amalgamated Council, the quality and quantity of road asset data held by the previous two Councils varies and does not reflect a full data set. Calculation of lifecycle costs is noted in this Asset Management Plan as an improvement action and will be included in future versions of this document.

9. Capital Upgrades & New Assets

Upgrades enhance an existing asset to provide a higher level of service, for example widening an existing road seal. 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 stormwater drainage 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.

On occasion, Council receives requests from customers to upgrade an unformed road. Council will only consider these requests if the customer is willing to pay for the works.

Both capital types may be funded at least in part through grants, through Developer Contributions in the form of a Section 64 or 94 Contribution, a Voluntary Planning Agreement, or as part of a subdivision development. Section 94 of the Environmental Planning and Assessment Act 1979 allows Council to require developers to contribute towards meeting the increased demand for public amenities and services created by new development.

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.

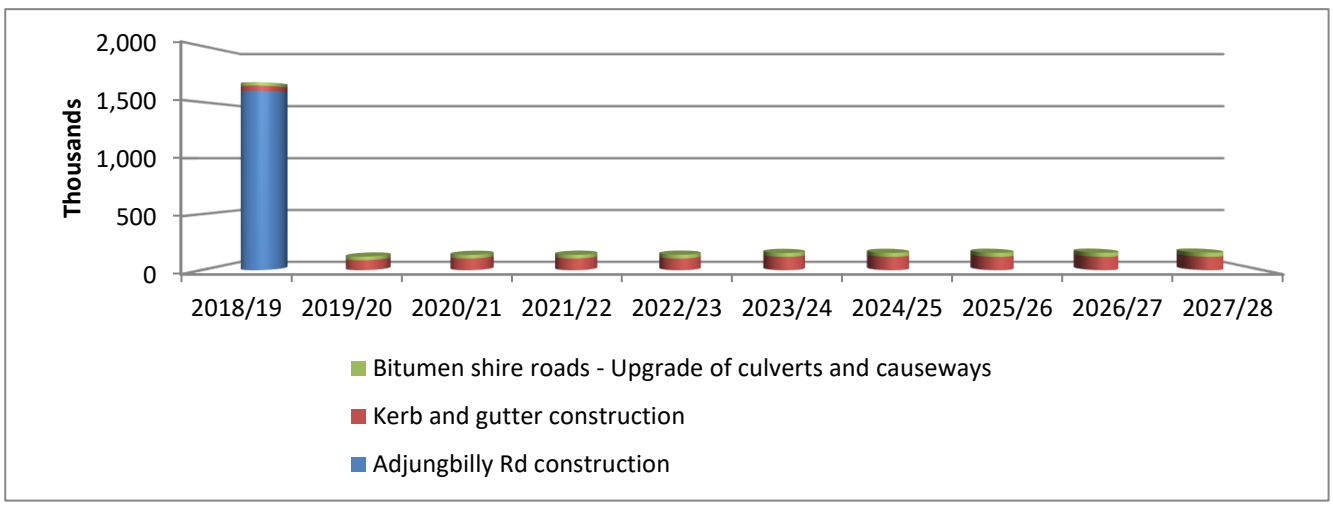
Council has developed a framework for the prioritisation of capital projects and that information is used in the consideration of all new projects above the threshold set in the framework. Included in the analysis is the identification of life cycle costs as outlined in the Asset Management Strategy.

Council has an adopted strategy for the expansion of Transport with the following new / upgraded assets proposed over the next 10 years to meet demand and safety improvement requirements. Table 9.1 indicates the major projects (a complete list is contained in Appendix C).

Table 9.1: What are the top 4 upgraded / new assets are proposed over the next 10 years?

Project / Group	Year(s)	Status	Cost ($,000)
Adjungbilly Road construction	2018/19		$1,600
Kerb and gutter construction	Ongoing		$106 (average)
Upgrade culvert and causeways bitumen shire roads	Ongoing		$34 (average)

Figure 9.1: What will we spend ($M) over the next 10 years on Upgraded or New Assets?



Muttama Rd is the regional road link between the population centres of Cootamundra and Gundagai, and is considered the most critical road assets and the highest priority for renewal and upgrading expenditure. The crossings of Reef Creek and Mooney Mooney Creek are inadequate for the high heavy vehicle traffic loading, and upgrading is currently unfunded. Council will consider applying for a change to the road classification from Regional Road to State Road.

Upgrading of the single lane bridge at Punch St, Gundagai, is also considered as a high priority. Project is yet to be scoped and grants sought to provide funding. Works are yet to be funded.

10. Disposal Plan

No redundant assets requiring decommissioning and disposal are anticipated. Council will look to rationalise the road network with a thorough review of the road asset register.

11. Financial Plan

As part of its funding strategy, Council has the option to supplement the funding any or all of the current or new Transport proposals that come into consideration for construction with borrowings. This strategy is heavily influenced by the monitoring of Council's Debt Service Cover Ratio.

The debt service cover ratio measures the operating cash available to service debt including interest, principal and lease repayments. The benchmark set by the NSW Office of Local Government for the ratio is greater than two times. In 2016-17 Council reported in Audited Financial Statements a debt service cover ratio of 19.6. Councils long term financial plan is anticipating a debt service cover ratio of 41.41 in the 2018-19 financial year.

Council applies for grants wherever possible to undertake specific rehabilitation works and is considering applying for a Special Rate Variation to obtain additional funding to reduce the backlog.

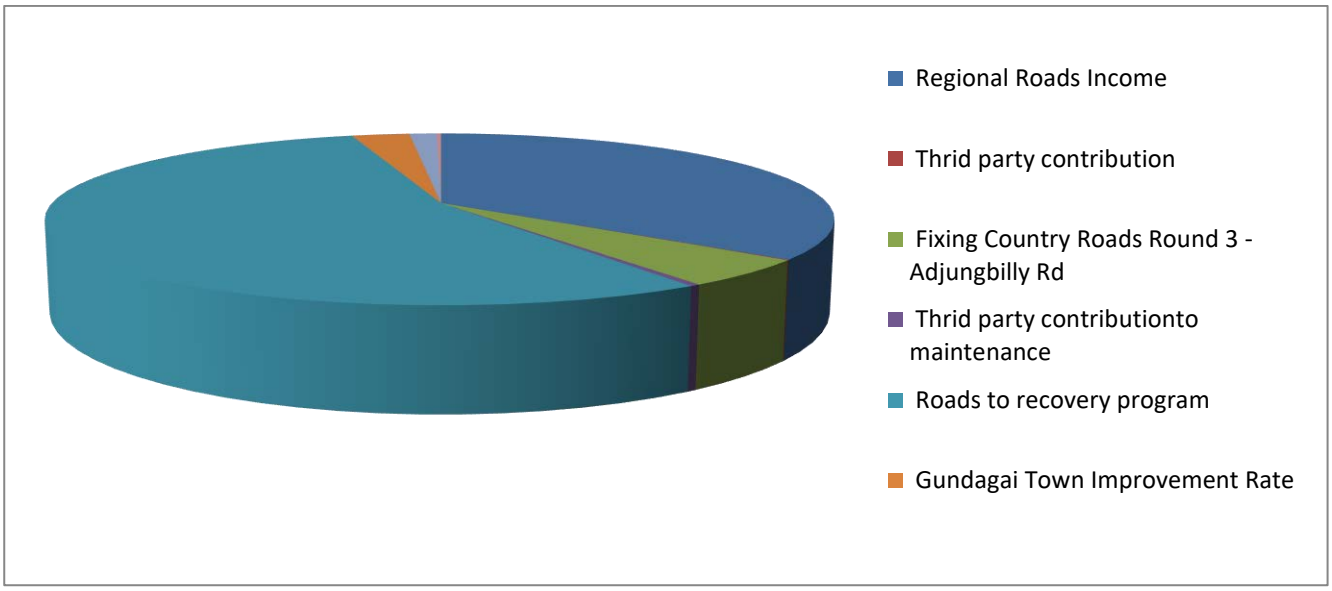
A summary of the funding requirements and expenditure over the next 10 years is included in **Appendix D**. Funding for management of assets can come from a variety of sources as detailed in the table below.

Table 11.1: Where does our Income come from?

Item	Budget
Regional Roads Income	$ 1,110
Third party contribution	$ 2
Fixing Country Roads Round 3 - Adjungbilly Rd	$160
Third party contribution to maintenance	$ 11
Roads to recovery program	-$1,717
Gundagai Town Improvement Rate	$ 89
Roads and Maritime street lighting subsidy	$ 42
Fees & Charges - Driveways	$ 7
Total	**$3,138**

1. Budget Figures are the 10 year annual average amounts indexed by 2% p.a.

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



12. Key Performance Measures

Key performance measure for transport assets are described below.

Table 12.1 Performance Measures

Key Performance Measure	Level of Service	Target
Annual monthly average of Sealed Roads surface defect complaints in the customer request system	Sound and smooth surface	< 10 / month
Annual monthly average of footpath/cycleway defect complaints in the customer request system	Sound and non slippery walking/riding surface	< 10 / month
Annual monthly average of Unsealed Roads defect complaints in the customer request system	Unsealed roads provide all weather access	< 10 / month
Percentage to roads inspected annually	Adequate road safety facilities provided (signage, linemarking, roadside furniture, etc)	> 95%
No. of physical road closures due to wet weather	Roads remain accessible during moderate rainfall	< 0.5 /month

13. Plan Improvements

Assumptions

The following assumptions have been used in the 10 year financial modelling for this plan:

1. **Asset Register** - The Transport asset register has been derived from road asset conditions surveys, using the Moloney Asset Management System. Inspections were undertaken in March 2015 for Gundagai and June 2016 for Cootamundra, hence there is a difference of fifteen months between the two data sets. For the purposes of modelling, the timing of both data sets it is assumed to be in alignment. Future road asset conditions surveys will be undertaken concurrently across the Shire.

2. **Backlog modelling** – The modelling of expenditure backlog is based on the structure of Council's Long Term Financial Plan. Accordingly, the budget split between pavement and seal may not reflect actual expenditure on each activity. Council is intending to undertake a number of road rehabilitation projects over the coming decade. These projects have been categorised as pavement renewal for the purpose of this plan, however they will have a seal component. Whilst the quantum of backlog shown is reliable, the split between pavement backlog and seal backlog underestimates the backlog for pavement and over-estimates the backlog for pavements.

3. **Works programs** – Renewal programs are detailed in Section 16 of this Plan, and have been developed using the recommended renewal funding levels shown in Figure 1.4 of the report: *"Moloney Asset Management Systems – Report Following the Survey of Road Assets for Cootamundra-Gundagai RC June 2017".*

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 transport assets are managed and planned for the coming 12 months:

Task	Expected Completion
1. **Recruit an Asset Management Engineer**, with responsibilities including the maintenance of asset registers in the Authority asset management system and maintaining the currency of this asset management plan.	2018
2. **Develop business processes** to ensure that the asset register in the new Asset Management Information System is kept up to date, whenever an asset is added, renewed or upgraded.	2018
3. Undertake a complete **road asset conditions survey** concurrently across Cootamundra and Gundagai	2019
4. Collect **improved asset data on minor asset classes** where gaps in data presently exist, such as culverts and causeways.	2019
5. Streamline the classification of roads in the **road hierarchy**. Currently roads are classified based upon their Cootamundra or Gundagai classification. All roads should be classified in a uniform hierarchy consistent with the IPWEA Functional Road Classifications.	2019

Task	Expected Completion
6. Develop **financial strategies** to manage the infrastructure backlog. These strategies may include a reduction in the Level of Service or a proposal for a Special Rate Variation.	2019
7. Identify the spilt in **future budgets** between seals and pavements for rehabilitation projects.	2019
8. Develop **maintenance programs** for maintenance of unsealed roads and include as Appendix A	2019
9. Review road register for **unmaintained Council roads**	2019

The next version of this Asset Management plan should include the following improvements:

1. Documentation of maintenance programs
2. Calculation of lifecycle costs for road assets.
3. Current performance of Council benchmarked against the key performance measures.
4. All transport assets to be assessed to determine critical assets. The most critical assets in Council's transport network to be ranked and listed in Section 14.

14. 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
The key Risks identified in this Plan are summarised in the following Table 14.1.

Table 14.1 Critical Risks and Treatment Plans

Risk Description	What can Happen	Risk Rating		Risk Treatment Plan
		Inherent	Residual	
Poor management of day labour and contracted resources in areas of insurance requirements, training, licencing etc	Health and safety risks and injury, financial loss, poor reputation and public liability claims	High	Significant	A specific risk management developed and implemented for each project
Poor project budgeting processes	Inaccurate cost estimations leading to budget blow-out	Significant	Medium	Ensure that the contingency allowance is commensurate with the level of project uncertainty/ risk
Insufficient human resources for asset management planning	AM Policy, Strategy and Plans not implemented. Asset register currency not maintained. Resource requirements for assets not considered in Council's long term financial planning.	Significant	Medium	Council to continue to resource AM Planning. Consultants to establish an AM framework from scratch that is modern and effective. New AM officer to be recruited to keep momentum of improvements on- going.
Inadequate funding from income for transport assets – current funding regime is drawing down reserves	Growing backlog of road assets that have reached intervention level, that have not been renewed. Works program for renewal funded from reserves is limited and financially unsustainable.	Significant	Low	Council to pursue a Special Rate Variation to obtain more funding for road assets

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, higher maintenance intervention levels, etc.

The following Table 14.2 list the factors that can be used to determine Council's most critical assets. Council is yet to systematically review the transport asset register and determine critical assets.

Table 14.2 Critical Assets

Factor	High Score (9)	Medium Score (6)	Low Score (3)
AADT	> 1,500 vpd	500 – 1,500 vpd	< 500 vpd
Alternative route(s) exist	Communities isolated	Travel times increased, damage to side streets	
Underground services	Water supply mains present		
Adjacent to a waterway	Runs parallel	Crosses waterway	
Emergency Services	Provides direct access		
Adjacent schools, shops, sports venues, etc	Adjacent to schools		
Bus Routes	Public transport bus route	School bus route	
Accident history	Fatality in past 5 years	> 5 injury accidents past 2 years	> 5 injury accidents in past 5 years
Heavy vehicle route	>25% heavy vehicles	10-25 % heavy vehicles	<10% heavy vehicles

For the next version of the Transport Asset Management Plan, all transport assets will be assessed against the above criteria to determine critical assets. The most critical assets in Council's transport network will be ranked and listed.

Operational risks and treatment plans are outlined in the following Table 14.3.

Table 14.3 Operational Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Treatment Plan
Road pavement / wearing surface	Early loss of service level due to excessive roughness, potholes, etc	Roads designed and constructed to Council's AUSPEC standards. Network is proactively inspected via planned inspections or reactively through customer service requests and is maintained according to Council's policies and procedures.
	Loss of wet weather skid resistance due to bleeding of surface of sprayed bitumen seal or asphalt surfaces.	Monitor surface condition ahead of normal intervention
	Unacceptable performance due to poor standard of reinstatement by service utilities / developers.	Roads designed and constructed to Council's AUSPEC standards. Council inspects to ensure compliance. Contractors must be accredited by Council.
Road delineation / signage / sight distances	High accident rates	Network is proactively inspected via planned inspections or reactively through customer service requests and is maintained according to Council's policies and procedures. Road safety audits as required.

Asset at Risk	What can Happen	Risk Treatment Plan
Bridges /rural culverts / sections of the road network	Impassable due to collapse, wildfire, flooding or windstorm resulting in loss of conductivity / greater travel times	Network is proactively inspected via planned inspections or reactively through customer service requests and is maintained according to Council's policies and procedures. Council implements suitable traffic control measures and/ or road closure plans. In case of bridge collapse, alternate route option or low flow causeway investigated Condition assessment of entire network every 3 years. This information is used to predict remaining useful lives of road assets, and when resources will be required for asset renewal.
Unsealed roads	Inaccessible after rain, increase in traffic accidents	Acknowledge some roads are dry weather roads only. Network is proactively inspected via planned inspections or reactively through customer service requests, and is maintained according to Council's policies and procedures. Unformed local access roads not maintained by Council.
Footpaths/Cycleways	Early loss of service level due to excessive cracking, stepping deformation, etc	Network is proactively inspected via planned inspections or reactively through customer service requests, and is maintained according to Council's policies and procedures

15. Appendix A: Maintenance Program

Maintenance Programs will be included in future versions of this Asset Management Plan

16. Appendix B: Renewals Programs for 2018 to 2020

Works programs have been developed using the recommended renewal funding levels shown in Figure 1.4 of the report: "Moloney Asset Management Systems – Report Following the Survey of Road Assets for Cootamundra-Gundagai RC June 2017". Figure 1.4 from this report is reprinted below:

Figure 16.1: Recommended Expenditure Levels *(Reprint of Fig 1.4 from Moloney Report)*

Sub Asset Description	Present total Annual Capital Renewal Expenditure	Req Renewal Exp from Model to treal all assets Reaching Intervention	Recommended Commencing funding level with 10% annual compounding increase for 10-Years	Annual Depreciation - Average Long Term Annual Ren. Demand
Sealed Pavements	2,064,000	1,560,000	$1,330,000	2,528,535
Sealed Surface	1,433,000	2,865,000	$1,850,000	1,745,380
Unsealed Pavement	471,000	890,000	$640,000	1,432,747
Kerbs	61,000	785,000	$235,000	286,622
Footpaths	116,000	145,000	$40,000	89,590
Bridges	145,000	260,000	$195,000	457,751
Totals	4,290,000	6,245,000	$4,290,000	6,540,625

The **methodology** for determining the Works Programs is documented below:

1. Review the Oranasoft model outputs for each asset category.
2. Add an additional column. Show works completed since the time of the Moloney assessments as a "1"
3. Add notes where reseals nominated are included in a pavement reconstruction
4. Filter out works completed and generate worksheets for both Gundagai and Cootamundra
5. Utilising the recommended expenditure in Figure 1.4 from the Moloney report, split this budget 50% on the former Gundagai Council network and 50% on the former Cootamundra Council network
6. Apply this recommended expenditure to the "Replacement Cost" column in the generated worksheets for 2018-19 and 2019-20
7. Review the projects in each year, and manually adjust works program to suit
8. Import works program into Section 16 of the Transport Asset Management Plan

A total of 11 works programs for 2018-19 and 2019-20 follow:

16.1 Sealed Pavements – Gundagai

ams_num	road	segment	Cost $	area	length	Condition
2018-2019						
12084	Soldier Settlers Rd CULVERTS ONLY	715: Nangus Rd (East) to 1.13 Commons Farm Rd	$68,191		3.47	7.6
11223	Byron St	227: Sheridan La to Sheridan St	$35,552	1778	0.09	7.3
12179	Tumut St	790: Mount St to End of seal	$15,930	797	0.18	7.3
11908	Old Hume Hwy	599: Segment Change to Seal Change	$213,192	11844	1.88	7.2
12086	Sommerset Rd	719: Start of Seal to Cattle Grid	$59,535	3308	0.74	6.5
11502	Hopewood Rd	400: Gobarralong Rd to Seal Change	$80,595	4478	1.00	6.4

ams_num	road	segment	Cost $	area	length	Condition
11218	Burra Rd	224: 19.15 Yammatree Rd to 21.35 Wambidgee Rd	$190,314	10573	5.02	6.2
			$663,309			
2019-2020						
11218	Burra Rd	224: 19.15 Yammatree Rd to 21.35 Wambidgee Rd	$190,314	10573	5.02	6.2
11906	Old Hume Hwy	597: Property Entrance to Bridge	$114,246	11903	1.73	6.2
12084	Soldier Settlers Rd	715: Nangus Rd (East) to 1.13 Commons Farm Rd	$100,000	14900	3.47	7.6
11145	Bethungra Rd	154: Nangus Rd to Rays Rd	$144,000		2.54	6.4
	West St & Punch St	Intersection pavement	$120,000			
	West St & Hanley St	Intersection pavement	$120,000			
			$788,560			
2020-2021						
11146	Bethungra Rd	155: Rays Rd to Property Entrance	$207,360	11520	1.80	6.3
11148	Bethungra Rd	157: Pleasant View Prop Ent to Seal Change	$219,852	12214	1.97	6.2
11145	Bethungra Rd	154: Nangus Rd to Rays Rd	$144,000	16002	2.54	6.4
11907	Old Hume Hwy	598: Bridge to Segment Change	$122,337	6797	0.99	7.2
11906	Old Hume Hwy	597: Property Entrance to Bridge	$100,000	11903	1.73	6.2
			$793,549			

16.2 Sealed Pavements – Cootamundra

ams_num	road	segment	Cost$	area	length	Condition
2018-2019						
11881	Old Gundagai Rd	1546: Seal Change to Culvert	$175,000	7,865	1.210	9.0
11570	Justin Street	1333: Parker to Murray	$140,000	2,880	0.200	4.2
11638	Lane B/W Thompson St - Centenary Ave	1411: Campbell St to End of Seal	$80,000	175	0.100	3
11135	Berthong Road	1045: Gateway West side to State Forest Entrance	$150,000	9,788	1.300	4.1
	Parker St Wallandoon St Intersection	Roundabout pavement	$120,000			
			$665,000			
2019-2020						
11123	Beggan Beggan Road	1033: Rosehill Rd to Culvert	$58,800	2,100	0.350	9.0
12211	West Jindalee Road	1755: Prop Ent to End Wet Area	$43,120	1,540	0.275	8.3
11881	Old Gundagai Rd	1546: Seal Change to Culvert	$50,000	7,865	1.210	9.0
11283	Cowcumbla Street	1994: Pavement Change to Conkey Dve	$28,280	808	0.101	7.9
11516	Hoskins Street	1284: Mr84 to Queen	$48,300	1,380	0.230	7.9
11610	Lane B/W Murray St - Parker St	1380: Adams St to Bourke St	$37,179	1,239	0.243	8.6
11496	Hibernia Street Lane	1271: Geraldera to End of Seal	$13,650	390	0.130	8.5

ams_num	road	segment	Cost$	area	length	Condition
11621	Lane B/W Queen St - O'Donnell St	1392: Mcgowan St to Crown St	$25,380	846	0.235	8.3
12027	Rodeo Drive	1641: Olympic Hwy to Binowee Rd	$170,100	4,860	0.810	9.6
11618	Lane B/W Parker St - Cooper St Pt 1	1388: Bourke St to Wallendoon St	$34,830	1,161	0.215	9.0
11598	Lane B/W Bullecourt St - Bapaume St	1990: Start of Seal to Charen St	$18,375	525	0.150	7.8
11597	Lane B/W Berthong St - White St	1359: Wills St to Mcconaghy St	$18,000	600	0.150	7.8
11125	Beggan Beggan Road	1035: Old Beggan Rd to Boundry	$187,992	6,714	1.492	7.3
			$734,006			

16.3 Reseals – Gundagai

ams_num	road	segment	Cost $	area	length	Condition
2018-2019						
13299	Hulong St	417: Kimo St to Tenandra St	$2,924	650	0.17	7.6
13271	Hopewood Rd	400: Gobarralong Rd to Seal Change	$16,119	3582	1.00	7.4
12876	AnniePyers Drive	131: Hume Hwy (South) to Seal Change	$10,859	2413	0.19	7.4
12877	AnniePyers Drive	132: Seal Change to Hume Hwy North	$55,867	7981	0.50	7.3
13016	Caulderwood Rd	247: Seal Change to Coggans Rd	$45,450	10100	2.02	7.1
13454	Mackellar St	463: Punch St to End	$4,385	974	0.17	7.0
13920	Tenandra Rd	771: Old Hume Hwy to Shire Boundary	$12,600	2800	0.50	7.0
13921	Tenandra St	772: Hulong St to Bangus St	$3,434	763	0.22	7.0
12884	Bangus St	147: Kimo St to Tenandra St	$2,731	607	0.15	6.8
13254	Harvey Park La	381: Start of Seal to End of seal	$817	182	0.06	6.7
13260	Hemans St	384: Railway Pde to Hanley St	$4,257	946	0.23	6.7
13854	Soldier Settlers Rd	716: 1.13 Commons Farm Rd to Nangus Rd (West)	$21,263	4725	0.95	6.7
12992	Byron St	227: Sheridan La to Sheridan St	$7,445	1654	0.09	6.5
13221	Gobarralong Rd	360: Seal Change to Seal Change	$23,571	5238	0.97	6.4
12861	Adjungbilly Rd	114: Seal Change to Segment Change	$25,740	5720	1.12	6.4
12879	Attwood Ave	140: Tor St to end	$3,119	693	0.15	6.2
12916	Bethungra Rd	156: Property Entrance to Pleasant View Prop Ent	$41,553	9234	1.62	6.2
12917	Bethungra Rd	157: Pleasant View Prop Ent to Seal Change	$49,644	11032	1.97	6.2
12987	Burra Rd	224: 19.15 Yammatree Rd to 21.35 Wambidgee Rd	$82,377	18306	5.02	6.2
13004	Camphor La	232: Luke St to Tom St	$3,861	858	0.22	6.2
13005	Camphor La	233: Tom St to End	$2,001	445	0.11	6.2
13012	Caulderwood Rd	243: Muttama Rd to Segment Change	$42,750	9500	2.50	6.2
13853	Soldier Settlers Rd	715: Nangus Rd (East) to 1.13 Commons Farm Rd	$57,692	12821	3.47	6.2
12862	Adjungbilly Rd	115: Segment Change to Parsons Ck Rd	$30,600	6800	1.36	6.1
12986	Burra Rd	223: Seal Change to 19.15 Yammatree Rd	$43,821	9738	2.56	6.1
13349	Kimo St (Nangus Rd)	438: Wantillo St to Bridge	$29,282	6507	0.99	6.1
12878	Armours La	133: Muttama Rd to End of seal	$7,200	1600	0.32	5.9

ams_num	road	segment	Cost $	area	length	Condition
12932	Bourke St	168: Punch St to Hanley St	$11,148	2477	0.21	5.9
12995	Byron St	230: Punch St to end	$6,194	1376	0.15	5.9
13323	Jessops Lagoon Rd	428: Highway Ent to End	$7,344	1632	0.24	5.9
13570	Nangus Rd	547: Seal Change to Seal Change	$37,665	8370	0.93	5.9
13933	Threeways Rd	774: Seal Change to Segment Change	$37,620	8360	1.52	5.9
12969	Bundardo Rd	202: Cattle Grid to Cattle Grid	$34,965	4995	1.35	5.8
12979	Burra Rd	216: Seal Change to Seal Change	$43,407	9646	1.86	5.8
13828	Sandy Falls Rd	684: Gabarralong Rd to End of seal	$2,205	490	0.10	5.8
13934	Threeways Rd	775: Segment Change to Culvert	$42,930	9540	1.59	5.8
13706	Oura Rd	2.2 km from Nangus Rd	$79,200		2.20	5.2
			$934,037			
2019-2020						
13991	West St S/R	818: Jack Mosed St West to End	$5,202	1156	0.10	5.8
13187	Five Mile Creek Rd	351: Annie Pyers Drive to End	$24,199	5378	1.20	5.8
13242	Hanley St	373: Seal Change to Bourke St	$5,026	1117	0.10	5.8
13499	Mount St	487: Ridge St to Luke St	$16,029	3562	0.26	5.8
13545	Muttama Rd Gunga	508: 13.12 Caulderwood Rd to Seal Change	$48,731	10829	1.19	5.8
13701	Otway St	614: Punch St to Hanley St	$15,660	3480	0.23	5.8
13758	Punch St	639: West St to Bourke St	$13,208	2935	0.23	5.8
13548	Muttama Rd Gunga	511: 16.41 Bridge St to Seal Change	$65,205	9315	1.04	5.8
12993	Byron St	228: Sheridan St to First Ave	$10,044	2232	0.12	5.6
13067	Cross St	289: Eagle St to Charlotte St	$7,406	1646	0.24	5.6
13175	Edwardstown Rd	334: 1.85 Snowball Rd to Bridge	$29,059	6458	1.03	5.6
13540	Muttama Rd Gunga	503: Wambidgee Rd to Seal Change	$53,397	11866	1.38	5.6
13590	Nicholls Ave	569: Tor St to End	$3,184	708	0.12	5.6
13603	Oakhills Rd	577: 0.72 Wantiool St to Seal Change	$25,578	5684	1.02	5.6
13885	Stuckeys Rd	747: Grid + Seal Change to Property Entrance	$21,395	4755	1.29	5.6
12863	Adjungbilly Rd	116: Parsons Ck Rd to Seal Change	$38,880	8640	1.44	5.6
12864	Adjungbilly Rd	117: Seal Change to Seal Change	$37,665	8370	1.35	5.6
13583	Nangus Rd	561: Seal Change to Width Change	$31,388	6975	0.93	5.6
13681	Old Hume Hwy	603: 17.94 Tenandra Rd to Seal Change	$89,208	19824	3.51	5.6
13759	Punch St	640: Bourke St to Jones Ck Br	$23,151	5145	0.33	5.6
13986	West St	813: William St to O'Hagan St	$23,323	5183	0.33	5.6
12865	Adjungbilly Rd	118: Seal Change to Seal Change	$26,507	5891	0.94	5.5
12866	Adjungbilly Rd	119: Seal Change to Seal Change	$46,919	10427	1.66	5.5
12994	Byron St	229: First Ave to Punch St	$9,371	2083	0.12	5.5
13267	Hoares La	394: Start of Seal to End of seal	$2,835	630	0.11	5.5
13600	Nurse Murray St	574: Mt Parnassus Dr to Seal Change	$4,968	1104	0.23	5.5
13669	Old Hume Hwy	591: Hume Hwy to Seal Change	$38,084	8463	1.09	5.5
13541	Muttama Rd Gunga	504: Seal Change to Seal Change	$24,098	5355	0.60	5.5
13563	Nangus Rd	540: Seal Change to Seal Change	$9,225	2050	0.25	5.5

ams_num	road	segment	Cost $	area	length	Condition
13580	Nangus Rd	558: Seal Change to Culvert	$49,871	11083	1.71	5.5
13847	Short St	705: William St to End of seal	$1,665	370	0.04	5.5
13989	West St	816: Punch St to Sheridan St	$13,373	2972	0.23	5.5
12849	Adelong Creek Rd	100: Hume Hwy to End of seal	$2,660	380	0.10	5.5
13065	CricketGround Dr	287: Nangus Rd to End	$12,950	1850	0.30	5.5
13498	Mount St	486: Tumut St to Ridge St	$16,249	2321	0.23	5.5
12981	Burra Rd	218: Seal Change to 9.65 Mahers Rd	$30,654	6812	1.31	5.3
12982	Burra Rd	219: 9.65 Mahers Rd to 11.29 Mantons Rd	$31,050	6900	1.38	5.3
13007	Camphor St	235: Cross St to End	$4,203	934	0.13	5.3
13496	Mount Parnassus Dr	484: Hanley St to Seal Change	$19,373	4305	0.71	5.3
13613	O'Briens Rd	584: Seal Change to Seal Change	$18,360	4080	0.85	5.3
13673	Old Hume Hwy	595: Seal Change to Seal Change	$16,247	3611	0.44	5.3
13731	Phillip St	631: Charlotte Sr to O'Briens Rd	$4,986	1108	0.20	5.3
13753	Punch St	634: Railway Pde to Virgil St	$5,455	1212	0.17	5.3
13935	Threeways Rd	776: Culvert to Culvert	$45,900	10200	1.70	5.3
13936	Threeways Rd	777: Culvert to Wee Jasper Rd	$37,665	8370	1.40	5.3
12946	Bridge St	175: Muttama Rd to Burra Rd	$17,438	3875	0.78	5.3
			$1,077,043			

16.4 Reseals – Cootamundra

ams_num	road	segment	Cost$	area	length	Condition
2018-2019						
13460	Martin Street Lane	2005: Dudauman Street to Fitzgerald St	$4,290	660	0.22	8.8
13366	Lane B/W Berthong St - White St	1359: Wills St to Mcconaghy St	$3,413	525	0.15	8.5
13965	Wallendoon Street	1741: Murray to Olney	$17,111	2633	0.27	8.3
13966	Wallendoon Street	1742: Olney to Poole	$14,976	2304	0.12	8.3
13367	Lane B/W Bullecourt St - Bapaume St	1990: Start of Seal to Charen St	$2,730	420	0.15	8.2
13035	Conkey Drive	1110: Cowcumbla St to Bridge	$12,480	1920	0.32	8.0
13049	Cowcumbla Street	1117: Muttama Rd to Muttams Ck Ford	$9,675	1489	0.23	8.0
13052	Cowcumbla Street	1994: Pavement Change to Conkey Dve	$4,858	747	0.10	8.0
13281	Hoskin Street	1280: Martin to Ellwood	$4,622	711	0.16	8.0
13339	Justin Street	1333: Parker to Murray	$18,408	2832	0.24	8.0
13379	Lane B/W Murray St - Parker St	1380: Adams St to Bourke St	$6,160	948	0.24	8.0
13434	Lloyd Conkey Avenue	1436: Cowcumbla St to Gundagai Rd	$24,219	3726	0.69	8.0
13363	Lane B/W Adams St - Muttama Creek Rd	1980: Short St to Lane 15	$1,183	182	0.07	7.9
13696	Olney Street	1579: Wallendoon to End of Pavement	$7,313	1125	0.08	7.9

ams_num	road	segment	Cost$	area	length	Condition
13813	Rosehill Road	1651: Seal Change to Geraldine Pk	$31,590	4860	0.81	7.9
13964	Wallendoon Street	1740: Parker to Murray	$13,229	2035	0.11	7.9
13044	Cooper Street	1112: Wallendoon to Bourke	$28,704	4416	0.23	7.7
13609	O'Brien Street	1520: Start of Seal to Dudauman	$2,075	319	0.06	7.7
12923	Betts Street	1973: Seal Change to End of Seal	$2,135	329	0.07	7.7
13814	Rosehill Road	1652: Geraldine Pk to Culvert	$33,173	5104	0.81	7.7
14006	Wood Street	1771: Geraldera to Cynthia	$9,318	1434	0.26	7.7
13043	Cooper Street	1111: Mackay to Wallendoon	$30,576	4704	0.25	7.6
13045	Cooper Street	1113: Bourke to Adams	$29,338	4514	0.26	7.6
13265	Hibernia Street Lane	1271: Geraldera to End of Seal	$2,113	325	0.13	7.6
13697	Olney Street North	1983: Bourke St to End of Road	$5,039	775	0.07	7.6
13807	Rosehill Road	1645: Seal Change to Seal Change	$24,734	3805	0.60	7.6
14005	Wood Street	1770: Dudauman to Geraldera	$8,954	1378	0.25	7.6
14007	Wood Street	1772: Cynthia to West	$9,828	1512	0.27	7.6
12948	Brittania Street	1079: Yeo Yeo to Camberia	$6,578	1012	0.18	7.4
13089	Cullinga Rd	1145: Caltex Rhs to Seal Change	$40,513	6233	1.11	7.4
13415	Lane B/W Yass Rd - Aerodrome	1419: Railway Pde to Mowalls	$9,318	1434	0.45	7.4
13959	Wallendoon Street	1736: Hovel to Sutton	$22,464	3456	0.18	7.4
14012	Yeo Yeo Hampstead Rd	1852: Gate West Side to Width Change	$30,963	4764	0.81	7.4
13387	Lane B/W Parker St - Cooper St Pt 1	1388: Bourke St to Wallendoon St	$5,870	903	0.22	7.4
13463	Matilda Avenue	1457: Boundary Rd to Seal Change	$11,759	1809	0.17	7.4
13951	Ursula Street	1726: Southee to Hurley	$26,208	4032	0.21	7.4
12922	Betts Street	1054: Muttama Rd to Seal Change	$3,861	594	0.11	7.3
12936	Bourke Street	1068: Cooper to Parker	$15,681	2413	0.13	7.3
13046	Cooper Street	1114: Adams to Morris	$29,796	4584	0.24	7.3
13179	Elizabeth Street	1202: Olney to Margaret	$13,156	2024	0.22	7.3
13377	Lane B/W Margaret St - Olney St	1377: Mackay St to Hurley St	$4,590	706	0.21	7.3
13472	Mckenna Avenue	1465: Willams to Cul-De-Sac	$3,965	610	0.08	7.3
13971	Warren Street	1746: Hume to Wills	$13,276	2043	0.22	7.3
12937	Bourke Street	1069: Parker to Murray	$15,054	2316	0.12	7.1
12998	Cambria Street West	1087: Geraldera to End	$12,513	1925	0.39	7.1
13091	Cullinga Rd	1147: Seal Change to Start Hwt	$52,120	8018	1.54	7.1
13092	Cullinga Rd	1148: Start Hwt to End Hwt	$14,703	2262	0.44	7.1
13093	Cullinga Rd	1149: End Hwt to Hardys Res Rd	$37,274	5734	1.02	7.1
13278	Hoskin Street	1277: O'Brien to Yeo Yeo	$5,649	869	0.16	7.1
13385	Lane B/W Parker St - Cooper St	1386: Wallendoon St to Court House	$1,106	170	0.05	7.1
13407	Lane B/W Thompson St - Centenary Ave	1411: Campbell St to End of Seal	$975	150	0.05	7.1

ams_num	road	segment	Cost$	area	length	Condition
13474	Merle Avenue	1469: Adams to O'Donnell	$10,465	1610	0.14	7.1
13481	Milvale Road	1474: End of Bridge deck to Malboro Gate Lhs	$39,117	6018	1.00	7.1
13482	Milvale Road	1475: Malboro Gate Lhs to Runnymeade Rhs	$31,980	4920	0.82	7.1
13650	Old Gundagai Rd	1546: Seal Change to Culvert	$40,898	6292	1.21	7.1
13749	Poole Street	1611: Mackay to Wallendoon	$28,106	4324	0.23	7.1
13913	Temora Street	1998: Parker St to Murray St	$23,271	3580	0.31	7.1
13952	Ursula Street	1727: Hurley to Mackay	$31,200	4800	0.25	7.1
			$944,671			
2019-2020						
13995	Willams Avenue	1764: Oban to Cul-De-Sac	$7,605	1170	0.15	7.1
13087	Cullinga Rd	1143: Cullinga Mines Rd to 8.648 Hillbank Lane	$86,013	13233	2.36	7.0
13094	Cullinga Rd	1150: Hardys Res Rd to Wallendoon Ln	$36,182	5566	0.99	7.0
13279	Hoskin Street	1278: Yeo Yeo to Cambria	$7,098	1092	0.20	7.0
13483	Milvale Road	1476: Runnymeade Rhs to Gate Rhs	$51,285	7890	1.32	7.0
13484	Milvale Road	1477: Gate Rhs to End Of Seal	$46,020	7080	1.18	7.0
13750	Poole Street	1612: Wallendoon to Scott Ave	$5,499	846	0.05	7.0
13929	Thompson Street	1716: Wallendoon to Bourke	$28,728	4420	0.23	7.0
13931	Thompson Street	1718: Adams to Morris	$26,972	4150	0.22	7.0
13980	West Jindalee Road	1755: Prop Ent to End Wet Area	$10,010	1540	0.28	7.0
14011	Yeo Yeo Hampstead Rd	1774: Width Change to Gate Lhs	$51,743	7961	1.31	7.0
14015	Yeo Yeo Hampstead Rd	1777: Gate Lhs to Little Yarran	$41,841	6437	1.57	7.0
14016	Yeo Yeo Hampstead Rd	1778: Little Yarran to Joes Rd	$23,319	3588	0.88	7.0
12911	Berthong Street	1052: Wills to Mcconaghy St	$7,053	1085	0.16	6.8
13191	Forsyths Lane	2030: Start of Seal to End of Seal	$7,313	1125	0.23	6.8
13201	Francis Street	1220: Hovell to Sutton	$14,942	2299	0.13	6.8
13282	Hoskin Street	1281: Ellwood to Mr 84	$5,876	904	0.23	6.8
13471	Mckenna Avenue	1464: Temora to Willams	$4,420	680	0.10	6.8
13751	Poole Street	1613: Scott Ave to Bourke	$19,448	2992	0.18	6.8
13917	Temora Street	2002: Crown St to Mcgowan	$19,108	2940	0.24	6.8
13994	Willams Avenue	1763: Mckenna Ave to Oban	$6,851	1054	0.16	6.8
14014	Yeo Yeo Hampstead Rd	1776: Wattle Flat to Gate Lhs	$44,106	6786	1.66	6.8
12848	Adams Street S/R	1989: Murray St to Hay St	$4,030	620	0.12	6.8
12881	Back Brawlin Road	1902: Seal Change to Seal Change	$44,460	6840	1.20	6.8
13285	Hoskins Street	1284: Mr84 to Queen	$7,774	1196	0.23	6.8
13351	King Drive	1342: Fuller Dr to End of Seal	$21,288	3275	0.25	6.8
13354	King Street	1346: George to Hoskins	$26,442	4068	0.23	6.8
13390	Lane B/W Queen St - O'Donnell St	1392: Mcgowan St to Crown St	$5,194	799	0.24	6.8

ams_num	road	segment	Cost$	area	length	Condition
13518	Muttama Rd Coota	1496: Weventure Hayshed to Grahams Lan	$134,501	20693	2.76	6.8
13977	West Jindalee Road	1752: Mr 235 to Racecourse Rd	$21,658	3332	0.60	6.8
12996	Cambria Street East	1085: Hoskins to Britania	$4,597	707	0.14	6.7
13095	Cullinga Rd	1151: Wallendoon Ln to Wallenbeen Ent	$41,423	6373	1.14	6.7
13096	Cullinga Rd	1152: Wallenbeen Ent to Olympic Hwy	$29,120	4480	0.80	6.7
13205	Francis Street	1224: Parker to Southee Cr	$14,706	2263	0.13	6.7
13310	Hurley Street	1307: Olney to Poole	$14,586	2244	0.12	6.7
13492	Morris Street	1481: Hovel to Sutton	$9,126	1404	0.12	6.7
13509	Murray Street	1487: Bourke to Adams	$26,520	4080	0.26	6.7
13776	Rathmells Lane	2041: Start of Seal to End of Seal	$5,090	783	0.15	6.7
13878	Stockinbingal Road	1933: Seal Change to Seal Change	$45,188	6952	0.79	6.7
13894	Sutton Street	1702: Adams to Morris	$27,056	4163	0.23	6.7
13930	Thompson Street	1717: Bourke to Adams	$31,990	4922	0.26	6.7
13954	Victoria Parade	1730: Hume to Wills	$20,163	3102	0.24	6.7
			$1,086,340			

16.5 Gravel Resheeting – Gundagai

road	segment	Cost $	area	length	Condition
2018-2019					
Jerusalem Ck Rd	424: Cattle Grid to Culvert	$42,750	4275	1.43	9.0
Crowleys Rd	304: Burra Rd to Gate	$2,750	275	0.11	8.0
Makehams Rd	467: House Rt Side to End	$55,200	5520	1.84	8.0
Rosedale Rd	679: Gate to End	$41,250	4125	1.38	8.0
Cookeys Beach Rd	275: Tarabandra Rd to End	$30,000	3000	1.00	7.0
Kangaroo Vale Rd	434: Darbalara Rd to Cattle Grid	$67,200	6720	2.24	7.0
Nanangrao Rd	525: Bundardo Rd to Ends at Gate	$23,975	2398	0.69	7.0
Yammatree Rd	847: Gate to Culvert	$29,550	2955	0.99	7.0
Riverview Rd	675: To Ref Descriptor to To Ref Descriptor	$26,000	2600	1.04	6.0
		$318,675			
2019-2020					
Adjungbilly Village Rd	128: Pavement Change to Ends at Gate	$7,625	763	0.31	9.9
Kangaroo Vale Rd	435: Cattle Grid to Plantation Gate	$66,500	6650	2.66	9.0
Lockhart Rd	455: Cattle Grid to End	$8,250	825	0.33	8.0
Stockdale Rd	742: Gate to Pavement Change	$35,850	3585	1.20	8.0
Stockdale Rd	743: Pavement Change to Parsons Creek Rd	$62,700	6270	2.09	7.0
		$180,925			

16.6 Gravel Resheeting – Cootamundra

Segment ID	Road/Street Name	From	Chainage	To	Length	Width	Area	Condition	Cost
2018-19									
1378	Lane B/W Mcconaghy St - Wills St	Lane # 19	0	174	174	5.0	870.0	9.00	$ 13,311.00
1786	Yeo Yeo Lane	Bend North	825	1,825	1,000	5.0	5,000.0	9.00	$ 54,000.00
304	Crowleys Rd	Burra Rd	0	110	110	3.0	330.0	8.00	$ 2,750.00
1240	Grahams Lane	Mr 87	0	960	960	4.0	3,840.0	8.00	$ 43,200.00
1945	Hillbank Lane	Gate	2,210	2,540	330	5.0	1,650.0	8.00	$ 17,325.00
1274	Hillview Road	Old Gundagai Road East	0	850	850	5.0	4,250.0	8.00	$ 38,250.00
1394	Lane B/W Richards St - Ward St	Lawrence St	0	220	220	5.0	1,100.0	8.00	$ 9,900.00
1950	Ryans Lane	Pavement Change	1,900	3,060	1,160	4.0	4,640.0	8.00	$ 57,420.00
1947	Ryans Lane	Gates North Side	3,060	3,850	790	4.0	3,160.0	8.00	$ 39,105.00
1719	Troy Street	Mr 235	0	180	180	4.0	720.0	8.00	$ 9,450.00
1960	Race Course Road	End of Seal	945	1,220	275	6.0	1,650.0	7.00	$ 16,500.00
1000	Adam Street	Geraldera	0	250	250	4.0	1,000.0	6.00	$ 11,250.00
									$ 312,461.00
2019-20									
1031	Bauloora Lane	Mr 235	0	1,590	1,590	5.0	7,950.0	7.00	$ 78,705.00
1272	Hibernia Street Lane	End of Seal	390	600	210	4.0	840.0	7.00	$ 25,000.00
1952	Ingolds Lane	Property Ent	2,050	3,280	1,230	6.0	7,380.0	7.00	$ 83,025.00
1937	Lismore Road	Grid	4,070	4,810	740	4.0	2,960.0	7.00	$ 33,300.00
1468	Meemar Road	Mr 235	0	610	610	5.0	3,050.0	7.00	$ 32,025.00
1000	Adam Street	Geraldera	0	250	250	4.0	1,000.0	6.00	$ 11,250.00
1001	Adam Street Pt 2	Dudauman	0	80	80	4.0	320.0	6.00	$ 30,000.00
1026	Barana Road	Mr 235	0	455	455	5.0	2,275.0	6.00	$ 21,840.00
1205	Faulks Lane	Cullinga Mines	0	400	400	6.0	2,400.0	6.00	$ 24,000.00
1632	Reservoir Road No 1 Road	Gundagai Rd	0	445	445	4.0	1,780.0	6.00	$ 18,022.50
									$ 357,167.50

16.7 Kerbs – Gundagai

ams_num	road	segment	Replacement $	length	Condition
2018-2019					
14118	Byron St	227: Sheridan La to Sheridan St	$11,880	66	7.0
14120	Byron St	228: Sheridan St to First Ave	$18,720	104	7.0
14254	First Ave	349: Homer St to Byron St	$25,560	213	7.0
14257	First Ave	350: Byron St to Otway St	$18,360	153	7.0
14258	First Ave	350: Byron St to Otway St	$24,720	206	7.0
14422	Kitchener St	441: Sheridan St to First Ave	$12,960	108	7.0
14423	Kitchener St	441: Sheridan St to First Ave	$12,960	108	7.0
			$125,160		
2019-2020					
14241	Eagle St	327: Tumut St EOS to Ridge St	$6,000	30	7.0
14333	Homer St	398: Sheridan St to Punch St	$12,000	100	7.0
14332	Homer St	398: Sheridan St to Punch St	$18,000	100	7.0
14785	Sheridan St	699: Seal Change to Otway St	$19,620	109	7.0
14794	Sheridan St	703: Homer to Virgil St	$2,640	22	7.0
14796	Sheridan St	704: Virgil St to Ovid St	$5,400	30	7.0
14469	Luke St	460: Mount St to Eagle St	$39,420	219	6.0
			$103,080		

16.8 Kerbs – Cootamundra

ams_num	road	segment	Replacement $	length	Condition
2018-2019					
14411	Justin Street	1333: Parker to Murray	$43,200	240	8.0
14412	Justin Street	1333: Parker to Murray	$43,200	240	8.0
14171	Cooper Street	1112: Wallendoon to Bourke	$37,800	210	8.0
			$124,200		
2019-2020					
14067	Bapaume Street	1024: Chamen to Murray	$25,740	143	8.0
14171	Cooper Street	1112: Wallendoon to Bourke	$37,800	210	8.0
14311	Hay Street	1259: Adams to O'Donnell	$24,300	135	8.0
14364	Hume Street	1297: Florance to Berthong	$45,900	255	8.0
			$133,740		

16.9 Footpaths – Gundagai

ams_num	road	segment	Replacement $	area	length	Condition
2018-2019						
15035	First Ave	348: Virgil St to Homer St	$33,000	440	220	6
			$33,000			
2019-2020						
15183	Punch St	637: Byron St to Otway St	$16,050	214	178	8
15000	Byron St	227: Sheridan La to Sheridan St	$4,165	119	22	7
15076	Kitchener St	441: Sheridan St to First Ave	$6,510	186	53	7
			$26,725			

16.10 Footpaths – Cootamundra

ams_num	road	segment	Replacement $	area	length	Condition
2018-2019						
15225	Sutton Street	1700: Mackay to Wallendoon	$6,510	186	155	10.0
15016	Cooper Street	1113: Bourke to Adams	$210	6	5	9.0
15085	Lloyd Conkey Avenue	1436: Cowcumbla St to Gundagai Rd	$4,655	133	95	9.0
15073	King Street	1346: George to Hoskins	$4,375	125	26	8.0
15220	Sutton Street	1697: Cowcumbla to Franis	$8,190	234	195	8.0
			$23,940			
2019-2020						
15056	Hovell Street	1291: Mackay to Wallendoon	$11,865	339	212	7.0
15123	Murray Street	1488: Adams to O'Donnell	$2,100	140	100	7.0
15124	Murray Street	1489: O'Donnell to Justin	$2,115	141	101	7.0
14986	Bourke Street	1068: Cooper to Parker	$9,600	128	80	6.0
			$25,680			

16.11 Bridges - Shirewide

ams_num	road	segment	Replacement $	Condition
2018-2019				
15334	Edwardstown Rd (#144, CH 280)	Big Ben Creek	$119,970	7.0
2019-2020				
15309	Burra Rd (#126, CH 14680)	Bongolong Ck	$315,900	8.0

17. Appendix C: 4-year Program for Upgrade / New Capital Works

Project	2018-19	2019-10	2010-11	2011-12
Adjungbilly Rd construction	1,600,000			
Kerb and gutter construction	45,000	90,000	105,000	105,000
Bitumen shire roads - Upgrade of culverts and causeways	30,542	31,244	31,963	32,698
	1,675,542	**121,244**	**136,963**	**137,698**

18. Appendix D: 10 Year Financial Plan (2018 $,000)

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Income											
Regional Roads Income	1,014	1,034	1,055	1,076	1,097	1,119	1,142	1,165	1,188	1,212	1,110
Thrid party contribution	2	2	2	2	2	2	2	2	2	2	2
Fixing Country Roads Round 3 - Adjungbilly Rd	1,600	0	0	0	0	0	0	0	0	0	160
Thrid party contributionto maintenance	10	11	11	11	11	11	12	12	12	12	11
Roads to recovery program	1,568	1,599	1,631	1,664	1,697	1,731	1,766	1,801	1,837	1,874	1,717
Gundagai Town Improvement Rate	284	290	314	0	0	0	0	0	0	0	89
Roads and Maritime street lighting subsidy	42	42	42	42	42	42	42	42	42	42	42
Fees & Charges - Driveways	5	6	6	6	6	7	7	7	8	8	7
Total Income	**4,526**	**2,984**	**3,061**	**2,801**	**2,857**	**2,913**	**2,970**	**3,029**	**3,089**	**3,150**	**3,138**
Operations											
Street trees	180	184	188	192	196	200	204	208	213	217	198
Street Cleaning	55	57	58	59	60	62	63	64	66	67	61
Internal Charges	8	8	9	9	10	11	11	12	12	12	10
Street lighting - energy costs	180	184	188	192	196	200	204	208	213	217	198
Total Operations	**424**	**433**	**442**	**452**	**462**	**472**	**482**	**492**	**503**	**513**	**468**
Maintenance											
Regional roads maintenance	647	661	674	662	675	690	704	719	734	749	692
Town streets maintenance	674	688	703	717	733	748	764	780	796	813	741
Street furniture maintenance	2	2	2	2	3	3	3	3	3	3	3
Village Maintenance	142	145	148	151	154	157	160	164	167	171	156
Sealed rural roads maintenance	663	677	820	837	855	873	891	910	929	948	840
Unsealed rural roads maintenance	555	566	600	613	625	639	652	666	680	694	629
Timber bridge maintenance	58	59	61	62	63	65	66	67	69	70	64
Total Maintenance	**2,741**	**2,799**	**3,007**	**3,044**	**3,108**	**3,173**	**3,240**	**3,308**	**3,377**	**3,448**	**3,125**
Renewals											
Pavement	2,186	2,241	2,287	2,334	2,381	2,430	2,480	2,530	2,582	2,635	2,409
Seal	1,027	1,050	1,373	1,404	1,435	1,646	1,772	1,811	1,852	1,894	1,526
Footpaths	70	72	73	75	76	78	80	81	83	85	77
Kerb	378	387	396	405	414	424	433	443	453	464	420
Bridge	120	300	300	0	0	0	0	0	0	0	72
Total Renewal	**3,781**	**4,050**	**4,429**	**4,217**	**4,307**	**4,578**	**4,764**	**4,866**	**4,971**	**5,077**	**4,504**
Upgrade / Expansion											
Adjungbilly Rd construction	1,600	0	0	0	0	0	0	0	0	0	160
Kerb and gutter construction	45	90	105	105	105	120	120	120	120	120	105
Bitumen shire roads - Upgrade of culverts and causeways	31	31	32	33	33	34	35	36	37	37	34
Total Upgrade / Expansion	**1,676**	**121**	**137**	**138**	**138**	**154**	**155**	**156**	**157**	**157**	**299**
Total Expenditure	**8,622**	**7,402**	**8,015**	**7,851**	**8,015**	**8,377**	**8,641**	**8,822**	**9,007**	**9,196**	**8,395**

Cootamundra-Gundagai Regional Council

Water Supply Asset Management Plan

Draft Version 1.1 June 2018

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Document Control					
Rev No	**Date**	**Revision Details**	**Author**	**Verifier**	**Approver**
1	June 2018	Draft	J Hansen & M Brearley		
1.1	June 2018	Draft Version 1.1 – Modelling adjusted to better reflect condition of Cootamundra reticulation	J Hansen & M Brearley		
1.2	July 2018	Draft AM Plan Version 1.2 - refined following staff and Councillor workshops	J Hansen & M Brearley		

1. Executive Summary

It is the objective of Council to:

- Investigate and implement sustainable waste and water strategies
- Deliver and maintain infrastructure to meet the current and future needs of our community
- Ensure Council meets all legislative requirements and operates within good governance frameworks

(Draft Cootamundra-Gundagai Regional Council Community Strategic Plan 2018 Objectives 3.1c, 3.2c and 4.3b).

According to an independent valuation by Australis Advisory, Council's water supply network had a replacement value of **$30 million,** and a written down value of **$14 million** as at 30 June 2017.

This plan assists Council in the decision-making process and is presented at a high level to provide key information that can used in the determination of levels of service and funding required. The following table identifies the asset categories in this plan, the twenty (10) year average costs and funding gap if one exists. Figure 1.1 indicates the proposed expenditure over the next 10 years.

Table 1.1: Water Asset Portfolio Overview (in 2018 $,000)

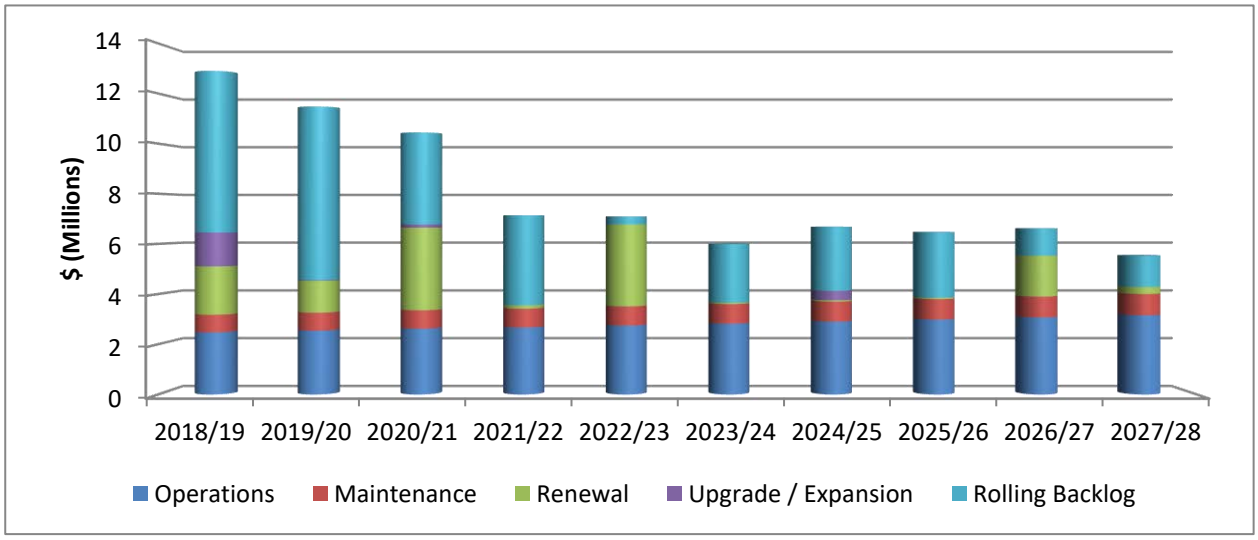
Asset	Fair Value	Operation & Maintenance	Renewal	Upgrade & New	Funding Gap	Backlog Year 1	Backlog Year 10
Water Reticulation	17,021	1,605	861	123	352	6,399	3,520
Mechanical	147	0	11	-	4	0	40
Electrical	168	0	-	-	0	0	0
Civil	889	0	-	53	0	0	0
Sub Systems	5,992	1,938	303	-	-224	0	-2,236
Storages	6,352	29	20	13	-8	53	-78
Other	0	0	0	0			
Total	**30,569**	**3,572**	**1,195**	**188**	**125**	**6,452**	**1,246**

Notes:

1. *Operations & Maintenance, Renewal and Upgrade & New Figures are the 10-year annual average amounts indexed by 2.0% p.a.*
2. *Funding Gap is the gap between required renewal expenditure and the renewal budget, averaged out over 10 years.*
3. *The negative numbers highlighted in red are not errors. Council's long term financial plan includes $3.1 million expenditure on the Gundagai water treatment plant and reservoirs in 2022/23. Renewal modelling for this AM Plan, based on a comprehensive condition assessment of above ground assets in 2017, indicates that this expenditure on the plant may be deferred beyond 2022/23. This shows in the financial modelling as a negative funding gap and negative backlog at year 10. It is suggested that Council review the long term financial plan for water assets after the Integrated Water Cycle Management (IWCM) Plan, currently under development, is complete.*

Backlog Year 1 is significant because Council has a cohort of water reticulation assets in Cootamundra that have deteriorated to the intervention level in recent years. These assets have not been renewed to date due to budget limitations. Council has allocated substantial funding over the next few years to reduce the backlog.

Figure 1.1: What will we spend over the next 10 years (2017 $M)?



The above identifies the proposed expenditure over the next 10 years together with the backlog. The identified backlog in year 1 of the plan is $6.4 million. The backlog decreases during the first four years as Council pumps funds into water main renewal. In the second half of the coming decade however, the condition of another cohort of water mains deteriorates to the intervention level, hence the backlog is $3.5 million at the end of a decade.

The current condition of our assets is shown in the following graph based on the value of each asset in each of 10 conditions ranging from 1 to 10, with 1 being near new and 10 as a completely failed asset.

Figure 1.2: What condition are our assets currently ($M)?

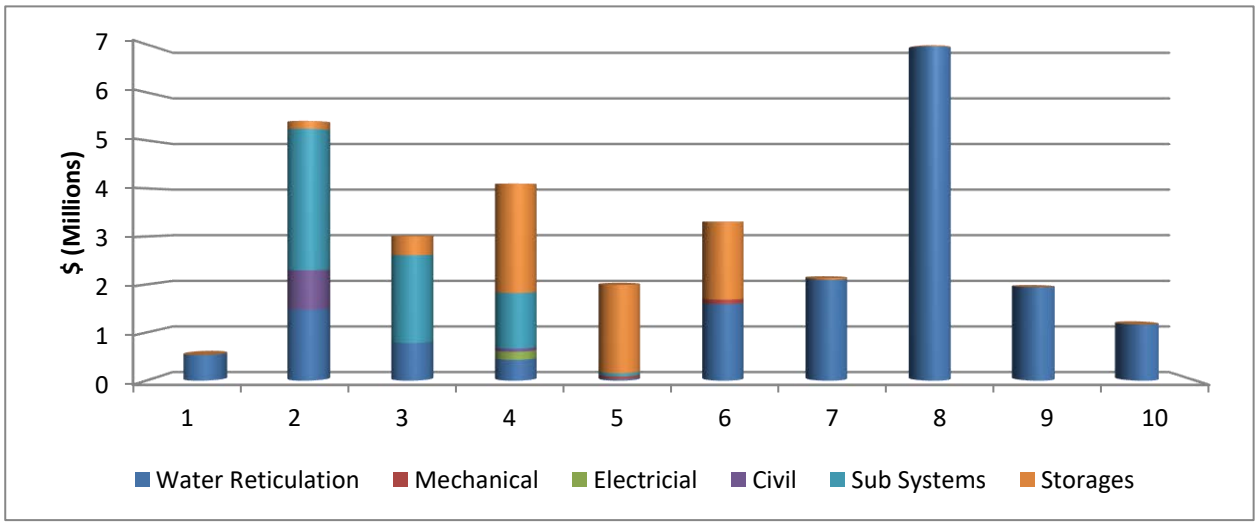


Figure 1.2 above shows the cohort of water reticulation mains in condition 8, 9 and 10 (ranging from poor with major deterioration to no longer serviceable, failure imminent).

The process of managing our water 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 13 contains tasks to further improve the details contained in the next Water Asset Management Plan.

2. Strategic Objectives

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

1. Provides water in a manner that supports the relevant outcomes identified in the Council Community Strategic Plan:
    - reduction of water wastage
    - increased use of alternative water sources.
    - community is satisfied with service delivery
    - ensures Council's long term financial sustainability is achieved
2. Ensure that infrastructure is maintained at a safe and functional standard as set out in this asset management plan.
3. Ensure that Water Infrastructure assets are managed to deliver the requirements of Council's Asset Management Policy.

Cootamundra-Gundagai Regional Council developed a comprehensive community engagement strategy to ensure a broad range of opinions, ideas and visions were captured to help shape the ***Cootamundra-Gundagai Community Strategic Plan 2018-28***.

To assist in the delivery of the objectives in this plan, a number of key documents and 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 System	Electronic system that contains the asset register, condition ratings and used to model future renewals.
GIS	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.

The CGRC CSP Outcomes supported by the Water Asset Management Plan include:

- Objective 3.1c: Investigate and implement sustainable waste and water strategies
- Objective 3.2c: Deliver and maintain infrastructure to meet the current and future needs of our community.
- Objective 4.3b: Council meets all legislative requirements and operates within good governance frameworks

3. Services Provided & Classification

Council provides the towns of Cootamundra and Gundagai with a reticulated water supply that meets current drinking water standards at minimum pressures as outlined in our Customer Service Levels.

The criticality ratings and condition ratings have been developed to reflect optimum asset management practices. In the future they will allow Council to have a more relevant grading of its assets to determine intervention levels and renewal costs based on risk. The criticality rating will identify different intervention levels for different assets depending on their assessed criticality and consequence rating. Council's water assets are yet to be allocated a criticality rating. Council's critical assets include:

- Trunk main from Goldenfields Water County Council supply to Cootamundra reservoirs
- The balancing main between the two reservoirs in Cootamundra
- Gundagai water treatment plant
- Rising main to reservoirs in Gundagai
- All reservoirs in Cootamundra and Gundagai

Criticality Grade	Water
AAA	Hospitals etc
AA	Trunk mains >= 300 mm, CBD area
A	Trunk mains 200 mm- 250 mm
B	Retic 150 mm, bore lines
C	Retic <= 100 mm

The water assets had a fair value of $30 million on the 30 June 2017. Details of the major components are contained in Table 3.1 together with their renewal cost.

Table 3.1: What are the elements of our water supply network?

Note, potable water is supplied to the town of Cootamundra by a bulk water provider, Goldenfields Water County Council. Cootamundra does not need a water treatment plant. Water for the town of Gundagai is extracted from the Murrumbidgee River. It is treated at the Gundagai Water Treatment Plant before reticulation to the town.

Classification	Description	Sub-class	Renewal Cost ($)	Dimension/ Number of assets
Civil	Gundagai raw water pumping station	Building	$65,520	1
		Inlet works	$488,800	1
		Wet/dry pump well	$334,951	1
Electrical	Gundagai raw water pumping station	Switchboard	$148,200	1
		Wet/dry pump well	$19,500	1
Mechanical	Gundagai raw water pumping station	Pump	$55,900	1
		Wet/ Dry Pump Well	$91,000	1

Classification	Description	Sub-class	Renewal Cost ($)	Dimension/ Number of assets
Reticulation	Asbestos Cement		$6,061,751	47,192.3m
	BB		$343,423	1720m
	Cast Iron		$4,484,838	18,377m
	Cast Iron Concrete Lined		$2,834,340	23,511.7m
	CPR		$6,054	79m
	Ductile Iron Concrete Lined		$868,875	7573m
	DS		$288,915	935
	Gal		$60,661	668.3
	High Density Polyethylene		$64,272	260
	Polyethylene		$93,114	1159
	PVCB		$1,812,241	12,649.7
	UPVC		$102,743	875
Reservoir	Ladder		$19,500	1
Reservoir	Reservoirs		$6,233,901	7
	RTU		$10,400	1
	Siteworks- perimeter fences		$42,770	2
	Walkway/ Platforms		$45,500	1
Sub-systems	Gundagai Water Treatment Plant	Air Scour System	$84,500	1
		Alum Dosing	$178,360	1
		Backwash Lagoons	$156,260	1
		Backwash pump station	$32,500	1
		Chlorine Gas Dosing System	$120,250	1
		Clarifier	$773,041	1
		Clearwater Pumping Station	$247,000	1
		Fluoride Dosing	$38,350	1
		Gravity Sand Filters	$1,775,820	1
		Lime Dosing	$209,950	1
		Poly Dosing	$23,400	1
		Process Systems	$1,673,100	1
		Site Services Infrastructure	$679,250	1
		Total Renewal Cost	**$30,568,950**	115km of reticulation

4. Levels of Service

Council is responsible for providing a safe, reliable and cost effective drinking water supply which is customer focused, enhances the Cootamundra-Gundagai environment and caters for the sustainable growth of the Region. Ongoing consultation is undertaken with the community to ensure the provision of the potable water supply is acceptable to the wider community.

Levels of service indicators have been developed for the services provided by the Water Supply 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. Key Performance Measures and how they will be measured provide the detail on how we determine whether we are delivering what they community are asking for.

Table 4.1 summarises at a high level what the community desires for each asset and how Council will deliver it. **Table 4.1: What does the Community want?**

CSP	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Key Performance Measure	How Measured
3.2c & 4.3b	Council to deliver and maintain infrastructure to meet the current and future needs of our community: Council meets all legislative requirements and operates within good governance frameworks	Reliable water supply	Incidence of unplanned interruptions	Formal records of all reports of failures leading to interrupted service without notice
			Adequate water pressure	Records of daily maximum and minimum reservoir levels. Customer advice of low pressure validated by staff inspection/measurement.
		Safe water supply	Testing for microbiological and chemical compliance	Water sampling and statutory testing

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

Discussion

Council staff can find it challenging to deliver the technical levels of service described in Table 4.1 due to limitations with aging water assets.

- It is difficult to achieve adequate water pressure in certain locations in Cootamundra, due to the high failure rate of the old cast iron and asbestos cement water mains. Council has to limit the height of water in its reservoirs so that high water pressure does not increase the rate of breakages across the network. Unplanned interruptions inconvenience the community when failure occurs.
- Cast -iron mains in Cootamundra regularly supply dirty water to residents. Flushing mains is not a solution as pipes are at end of life.
- Elevated areas in Cootamundra do not receive adequate water pressure in summer, and a third reservoir may be required to meet demand.
- Hand chlorination of Cootamundra reservoirs is required in to ensure drinking water achieves microbiological and chemical compliance. This is a workplace health and safety risk for staff and unsustainable. Better chlorine dosing systems are being planned and funding sourced.
- Elevated areas in Gundagai do not receive adequate water pressure and capacity issues exist in pockets within town.

5. Condition of Our Assets

Prior to commencement of this Water Asset Management Plan, Cootamundra-Gundagai's portfolio of water assets were valued in accordance with "Fair Valuation" principles. A specialist service provider, Australis Advisory conducted field survey, involving a physical inspection of the ground level facility assets such as the treatment plant, pumping stations and reservoir exteriors. Australis Advisory did not inspect the interior of reservoirs given the highly-specialised nature of this work, and instead relied on reports provided by Council.

The objective of the condition assessment survey was to uncover any evidence that would challenge the default useful life for that asset class, such as corrosion (or lack of), obvious mechanical/ electrical defects or structural damage. Survey data was collected in the field using electronic means (tablet).

During the condition inspection, the inspector was of the opinion that with the exception of the water mains in Cootamundra and several minor defects, the Cootamundra and Gundagai water infrastructure is in good condition and well maintained.

Assets were rated on a 1 (Near New) to 10 (Completely Failed) scale consistent with the best practice asset management outlined in the IPWEA International Infrastructure Management Manual. Of concern, are the water reticulation mains in Cootamundra.

- A cohort of cast-iron (CI) water mains are experiencing severe tuberculation and graphitisation of unlined pipe walls, resulting in poor water quality and frequent failures. Complete replacement of the CI network in Cootamundra is recommended. These pipes are condition graded 8 and 9, dependent on age.
- Another cohort of asbestos cement water mains are failing frequently, and complete replacement is recommended. These pipes are condition graded 7, 8 and 9, dependent on age.

*Figure **5-1**: Typical cast iron water main failure in Cootamundra*

These assets no longer provide reliable, quality water to residents of Cootamundra and renewal of these assets is required now. They form the bulk of the "backlog" for water assets. Operational staff report a high level of watermain breaks for these assets.

The asset register shows a cohort of cast iron cement lined watermains laid in 1930 and 1940 in Gundagai, at condition grade 10. The condition grade is based on the age of the pipes, as the mains were not inspected individually when the network wide condition assessment took place in 2017.

At this condition (nominal) grade, these mains should be failing, yet staff do not report high levels of main breaks in Gundagai, only Cootamundra, where the mains are condition grades up to 9 only. Staff advise that these old mains were well laid with no stress in benign ground conditions are still providing a high level of service.

Further investigation of the older Gundagai mains is recommended in order to set priorities for watermain renewal. It may be prudent to proactively replace these older mains to avert future problems. The renewal program in the Appendix A of this Plan lists the watermains in Gundagai as a high priority for renewal funding however further investigation is suggested to verify genuine need.

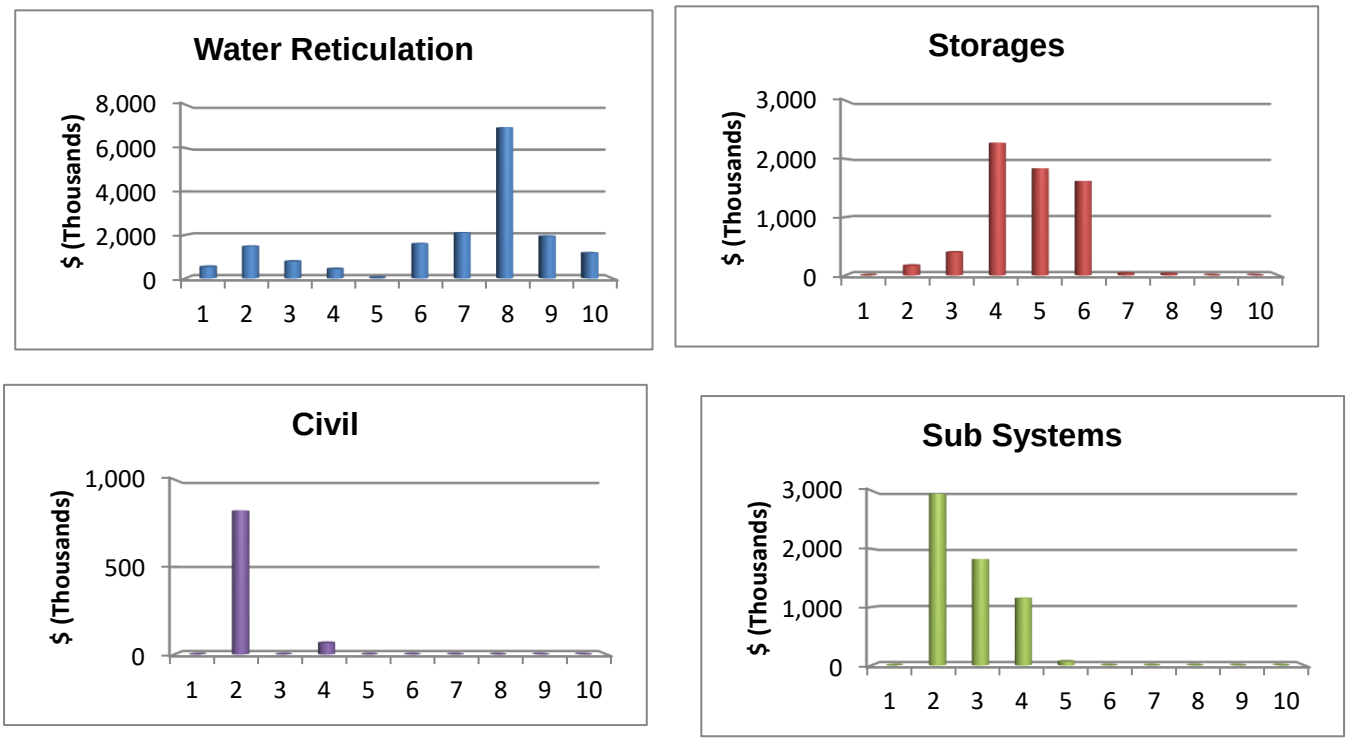
The intent of Council is not to undertake renewal on an asset until it reaches its 'Intervention Level', that is the condition at which the community has determined renewal is required based on the LOS analysis. Typically, assets will be renewed between condition 6 & 9 which ranges from fair/poor to very poor depending on their classification. For this purpose of this Asset Management Plan, an intervention level of **7** has been adopted for all assets. As discussed above, there are water mains in Cootamundra that have deteriorated beyond condition grade 7, that need to renewed now.

Table 5.1: What are the Useful Lives of our Assets?

Classification	Description	Sub-class	Useful Life
Civil	Gundagai raw water pumping station	Building	50
		Inlet works	80
		Wet/dry pump well	80
Electrical	Gundagai raw water pumping station	Switchboard	30
		Wet/dry pump well	30
Mechanical	Gundagai raw water pumping station	Pump	30
		Wet/ Dry Pump Well	40
Reticulation	Asbestos Cement		80
	BB		100
	Cast Iron		80
	Cast Iron Concrete Lined		80
	CPR		60
	Ductile Iron Concrete Lined		100
	DS		80
	Gal		80
	High Density Polyethylene		100
	Polyethylene		100
	PVCB		100
	UPVC		100
Reservoir	Ladder		30
Reservoir	Reservoirs		40-150
	RTU		7
	Siteworks- perimeter fences		7-12
	Walkway/ Platforms		20
Sub-systems	Gundagai Water Treatment Plant	Air Scour System	15
		Alum Dosing	20-60
		Backwash Lagoons	40-80
		Backwash pump station	30
		Chlorine Gas Dosing System	20-30
		Clarifier	30-80
		Clearwater Pumping Station	30-40
		Fluoride Dosing	20-30
		Gravity Sand Filters	10-80
		Lime Dosing	18-30
		Poly Dosing	20
		Process Systems	20-40
		Site Services Infrastructure	30-80

Each asset's condition is documented in the Asset Register and the graphs below show the condition profile based on the value of the top 4 valued assets in each condition.

Figure 5.2: What Conditions are our assets ($,000)?



6. Operations

Operational activities are those regular activities that are required to continuously provide the service: activities such as asset inspection, manual chlorine dosing and cleaning. Operational costs include: administration, electricity costs, water treatment chemicals and overheads. Council is also required to pay an access charge and a consumption charge to Goldenfields Water County Council for bulk water supply to Cootamundra.

The ***Cootamundra-Gundagai Regional Council Operational Plan 2018-19*** summarises the specific projects and activities to be achieved to meet the commitments in the Delivery Program. It spells out how the commitments of Delivery Program will be delivered as individual projects. It also sets out objectives for the provision of water services to the community and key performance measures. The document describes Council's operating budget for the year.

For Council staff, daily operational activities for water assets vary between Cootamundra and Gundagai.

Operational staff in Cootamundra must respond to daily main breaks and resulting unplanned service interruptions and are unable to focus on planned activities. Cootamundra staff must also perform hand chlorination at reservoirs. In winter, when there is less demand for water and hence less main breaks, Council staff perform hydrant and dead-end flushing.

Operational staff in Gundagai, where the reticulation network is more reliable, spend time at the water treatment plant, monitoring and testing, run a main flushing program, monitor the mains for any issues, and map the water supply network using GPS, to progressively improve data in Council's Geographic Information System.

Certain operational tasks must be performed by specialist contractors, such internal inspection of reservoirs by diving.

Table 6.1: When do we undertake Inspections?

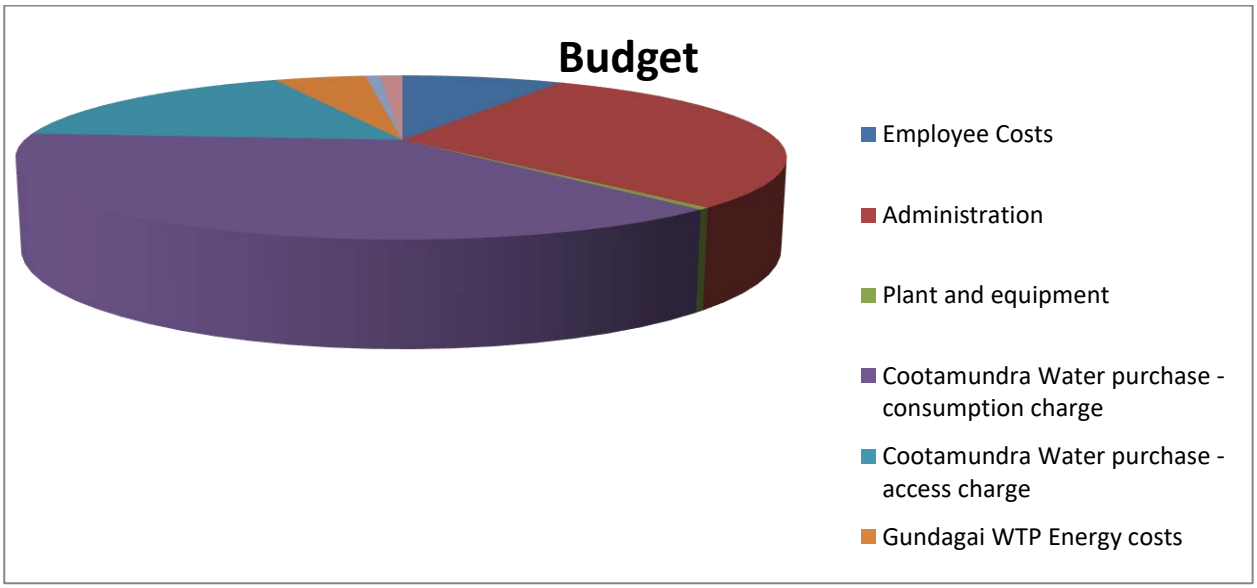
Inspection	Frequency
Condition Assessments of all Above Ground External Assets	6 monthly
Dead End Flushing	Quarterly
Hydrant Maintenance and Reticulation Mains Cleaning	Every 4 years
Safety Inspections	Quarterly
Water Storage Reservoirs	Every 4 years

Table 6.2: What are our Operational Costs?

Item	Budget ($,000)
Employee Costs	231
Administration	833
Plant and equipment	11
Cootamundra Water purchase - consumption charge	1,059
Cootamundra Water purchase - access charge	478
Gundagai WTP Energy costs	132
Gundagai WTP Internal Charges	20
Gundagai WTP Chemicals	33
Total	**2,798**

Note: Budget listed in Table 6.2 above is the 10 year average Operations Expense ($,000) in 2018 dollars.

Figure 6.1: 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 be either planned, where works are programmed in or cyclic in nature or reactive in response to storm damage or vandalism.

A percentage of the Cootamundra water reticulation network has deteriorated beyond intervention level and reached end of life. Up to five main breaks can occur in one day in the asbestos cement and cast iron reticulation network. Consequently, operational staff in Cootamundra can only undertake planned maintenance in winter, when the demand for water is lower, and there are less main breaks per day.

Repairs – As this is a critical service provided by Council all repairs are completed within agreed customer service level guidelines.

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

Activity	Frequency
Mains Cleaning	Every 10 years
Hydrant Maintenance	Every 3 years
Water Leakage Detection	Ongoing
Reservoir Overflow Check	Ongoing
Dead End Hydrant Flushing	Quarterly
PRV Maintenance	Annually
Pumps	Every 10,000 hours
Reservoir Cleaning	Every 4 years

Adjusting Levels of Service

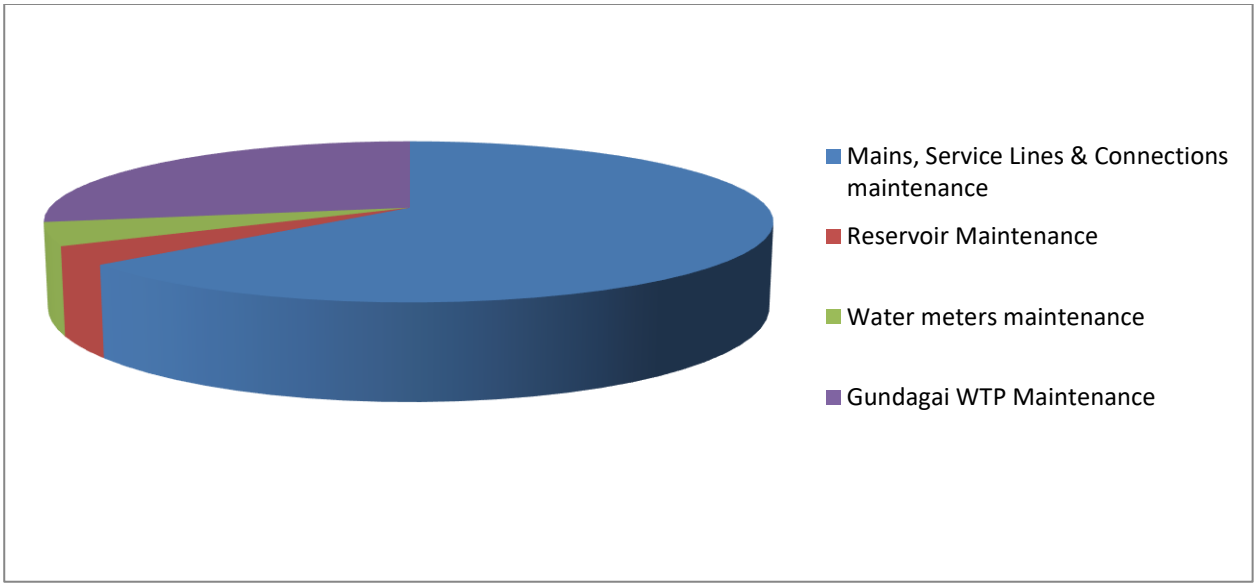
The adjustment of LOS for a critical service as potable water supply is only undertaken after consultation with the community ensuring it is still within statutory regulations and health guidelines.

Table 7.2: What are our Maintenance Costs?

Item	Budget ($,000)
Mains, Service Lines & Connections maintenance	494
Reservoir Maintenance	29
Water meters maintenance	36
Gundagai WTP Maintenance	215
Total	**774**

Note: Budget listed in Table 7.2 above is the 10 year average Maintenance Costs ($,000) in 2018 dollars.

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.

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 B for each asset category. The first year of the program will be considered in the development of the next Operational Plan and the remaining 9 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.

Discussion

From the analysis of age and condition data for water assets, it is apparent that the greatest area of need for expenditure is the reticulation network (particularly in Cootamundra), with mains with a current replacement cost of $12 million reaching intervention level in the coming decade. Expenditure is still required for the renewal of sub-systems (Gundagai water treatment plant) and storages (reservoirs), however it is much smaller, $796,000 and $118,000 respectively.

Commendably, Council is intending to invest heavily in water main renewal in the coming decade, to meet anticipated need, with a planned expenditure of $8.61million.In addition, Councils long term financial plan shows a planned expenditure of $3 million in 2022/23 on the Gundagai Water Treatment Plant. Because of this expenditure, there is no backlog at year 10 – instead an apparent overspend. However, the recent condition assessment of the Gundagai WTP (2017) indicated that significant expenditure on renewal may not be needed within the 10 year life of this plan.

It is understood that an Integrated Water Cycle Management Plan is presently being developed for Council by Public Works Advisory. It is suggested that there may be other projects targeted for the $3m funding, that will emerge during development of the IWCM, such as addressing known water pressure deficiencies in both Gundagai and Cootamundra. For example, Cootamundra may need an additional reservoir to meet capacity. Part of the $3 million, could be redirected to renewing all the water mains at intervention level 7, however there are other level of service and capacity projects that could be prioritised.

Table 8.1: What are our Renewal Costs, Gap and Backlog (2018 $,000)?

Activity	Budget	Required	Gap	Backlog Year 1	Backlog Year 10
Water Reticulation	861	1,213	352	6,399	3,520
Mechanical	11	15	4	0	40
Electrical	-	-	0	0	-
Civil	-	-	0	0	-
Sub Systems	303	80	-224	0	- 2,236
Storages	20	12	-8	53	-78
Total	**1,195**	**1,320**	**125**	**6,452**	**1,246**

1. *Figures are based on the 10 year annual average amounts*
2. *The negative numbers highlighted in red are not errors. Council's long term financial plan includes an average annual expenditure of $303,000 on water treatment facilities and $20,000 on reservoirs, resulting from spikes in 2022/23. However, renewal modelling for this AM Plan, based on a comprehensive condition assessment of above ground assets in 2017, is not indicating that there are water treatment plant and reservoir assets requiring this value of renewal in the next decade. This leads to the negative funding gap and negative backlog at year 10. It is suggested that Council review the long term financial plan for water assets after the Integrated Water Catchment Management (IWCM) Plan, currently under development, is complete.*

Figure 8.1 indicates that, based on current projections, Council will spend approximately $1,195 million per annum on renewals.

Figure 8.1: What will we spend (2018 $,000) over the next 10 years on Renewal?

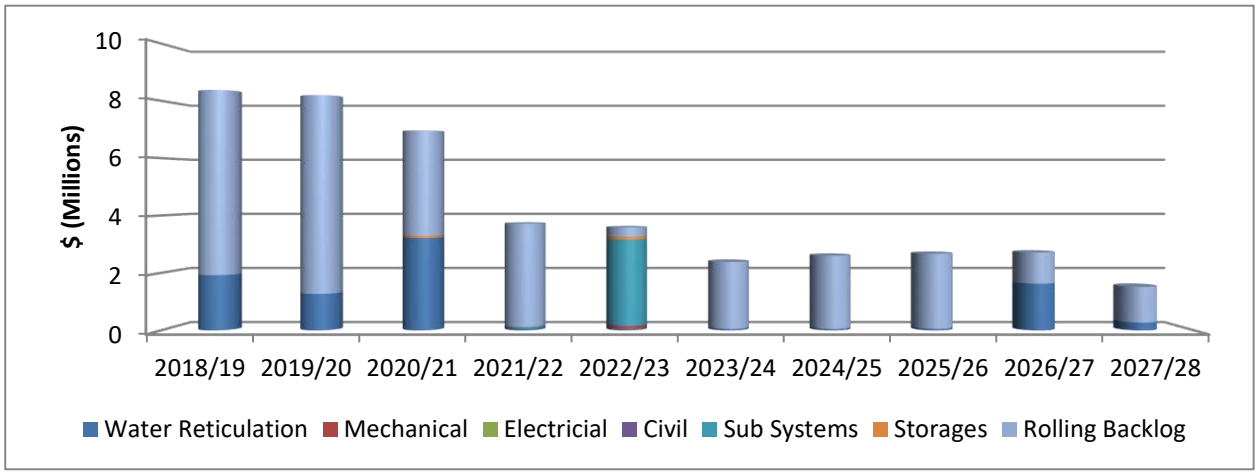
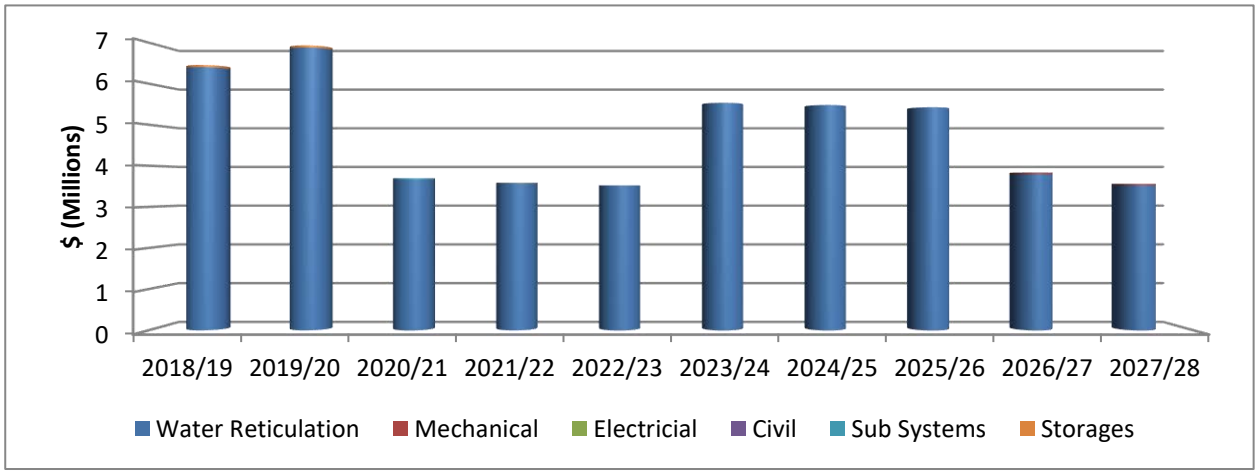


Figure 8.1 shows the backlog in the first four years of the Plan (light blue) and how Council intends to tackle the backlog with renewal spending. After 2022/23 there appears to be no backlog, however this is erroneous as the spending (turquoise) is planned for the water treatment plant in Gundagai (sub-systems) and not the aging water reticulation, where there is more urgent need. See Figure 8.2 following for the backlog. Observe, it is all water reticulation.

Figure 8.2: What are the projected rolling backlog splits ($,000)?



Lifecycle costs

The lifecycle costs are determined based on the total cost of ownership of each asset including operations, maintenance, renewal and disposal costs. Council does not have the data available at this time for the accurate calculation of lifecycle costs for water and sewer assets. Calculation of lifecycle costs is noted in this Asset Management Plan as an improvement action and will be included in future versions of this document.

9. Capital Upgrades & New Assets

Upgrades enhance an existing asset to provide a higher level of service, such as upgrading water treatment processes to get better water quality. New assets are those created to meet an additional service level requirement or increase the size of a network, such as an extension of the water supply network. The requirements for new assets may result from growth, social or environmental needs.

Council's "Contributions Plan for Other Developments" enables Cootamundra-Gundagai Regional Council to levy "headworks" contributions where the projected population and development growth anticipated will or is likely to increase the demand for water services. 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.

Under this Policy a developer contribution is 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, or unit contribution. Both capital upgrade and new assets may be funded at least in part through Developer Contributions in the form of a Section 64 or 94 Contribution, a Voluntary Planning Agreement, or as part of a subdivision development.

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. Major projects listed in Council's *Draft Operational Plan 2018-19 1. 2.0* are:

- Investigate options for the connection of a water supply to Nangus Village
- Extension of the water supply to the Dog on the Tuckerbox site

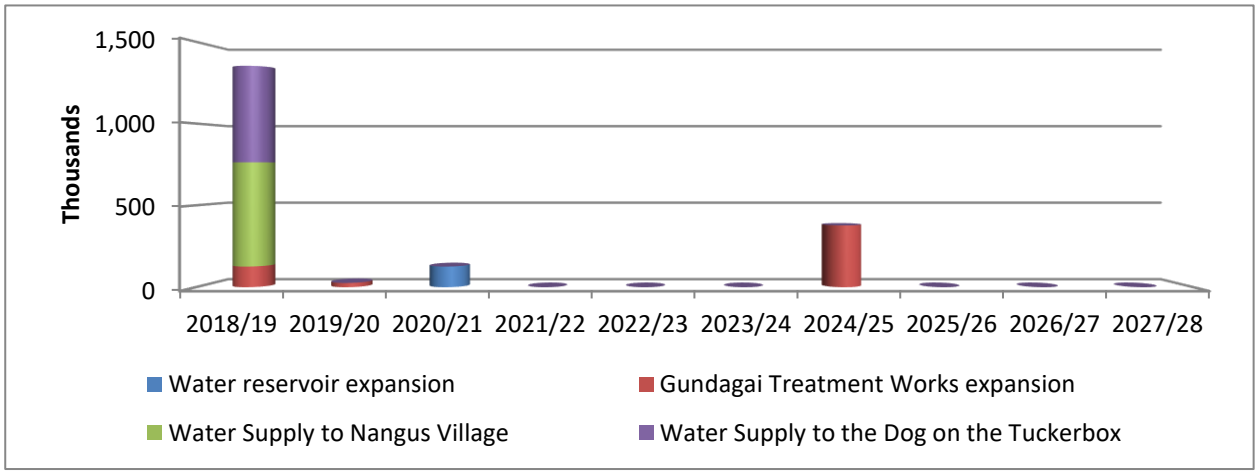
It is understood that Council is also investigating the feasibility of extending the water supply beyond the Dog on the Tuckerbox site to the village of Coolac in the future however presently no funding has been allocated to this future project.

The Gundagai water treatment plan is not operating at full capacity and could possibly supply water to additional service areas without significant capital works.

Table 9.1: What upgraded / new assets are proposed in the short term?

Project / Group	Total Cost	2018/19 Expenditure	Funding Source
Cootamundra water mains (renewal)	$2,000,000	$1,873,862	Stronger Communities Grant Funding
Nangus water supply feasibility (new)	$647,500	$647,500	Water fund
Dog on the Tuckerbox connection (new)	$600,000	$600,000	Water Fund and Developer Contributions

Figure 9.1: What will we spend over the next 10 years on Upgraded or New Assets ($M)?



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 9 (poor condition), where Council has received no contact through the Customer Request System indicating that the community doesn't require the asset (as they have raised concerns or complaints about the asset condition) may be considered to be a redundant asset or not utilised and therefore decommissioned and disposed unless it is considered critical infrastructure.

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.

Council does not generally dispose of water assets. The majority of Council's water assets are buried pipelines. When watermains are replaced the existing redundant main is either burst or allowed to remain dormant, parallel to the new watermain.

11. Financial Plan

The best practice guidelines set out for the water pricing principles for residential customers are as follows:

- Usage charges should be set to reflect the long-run margin of water supply
- Residential water usage charges must be set to recover at least 75% of residential revenue
- To encourage water conservation, high water consuming residential customers should be subject to a stepped price increase (expressed as an "excess water charge") of at least 50% for incremental usage above a specified threshold. This threshold should not exceed 450 kL/yr per household.
- Local Water Utility's (LWU's) must bill at least three times each year (and preferably every quarter) to improve the effectiveness of pricing indicators.
- No land value based charges (i.e. rates)
- No "free" or "pre-paid" water allowance.

Discussion

Consumer charges for water in Cootamundra are not incrementally stepped to discourage high water usage. Instead a flat water consumption fee is charged. Changes are required to water billing in Cootamundra town, to bring it in-line with the best practice guidelines. As Council's water business is able to obtain full recovery from the community on the cost of water supply, this may present an opportunity for increased revenue. Council is currently preparing an IWCM, which will review the Financial Plan. Note, it may be prudent to delay any changes to residential water billing until the dirty water problems in Cootamundra are resolved through replacement of the most problematic old cast iron water mains. Dirty water from the tap is a real concern for many residents of Cootamundra.

Borrowing

As part of its funding strategy, Council has the option to supplement the funding new water asset projects that come into consideration for construction with borrowings. This strategy is heavily influenced by the monitoring of Council's Debt Service Cover Ratio. The debt service cover ratio measures the operating cash available to service debt including interest, principal and lease repayments. The benchmark set by the NSW Office of Local Government for the ratio is greater than two times. In 2016-17 Council reported in Audited Financial Statements a debt service cover ratio of 19.6. Councils long term financial plan is anticipating a debt service cover ratio of 41.41 in the 2018-19 financial year.

Grants

Council applies for grants wherever possible to undertake specific capital projects. In the 2018/19 financial year, Council will be expending grant funds on renewal and new projects. Council will consider applying for additional grant funding, such as the NSW Safe and Secure Water Program, to undertake works.

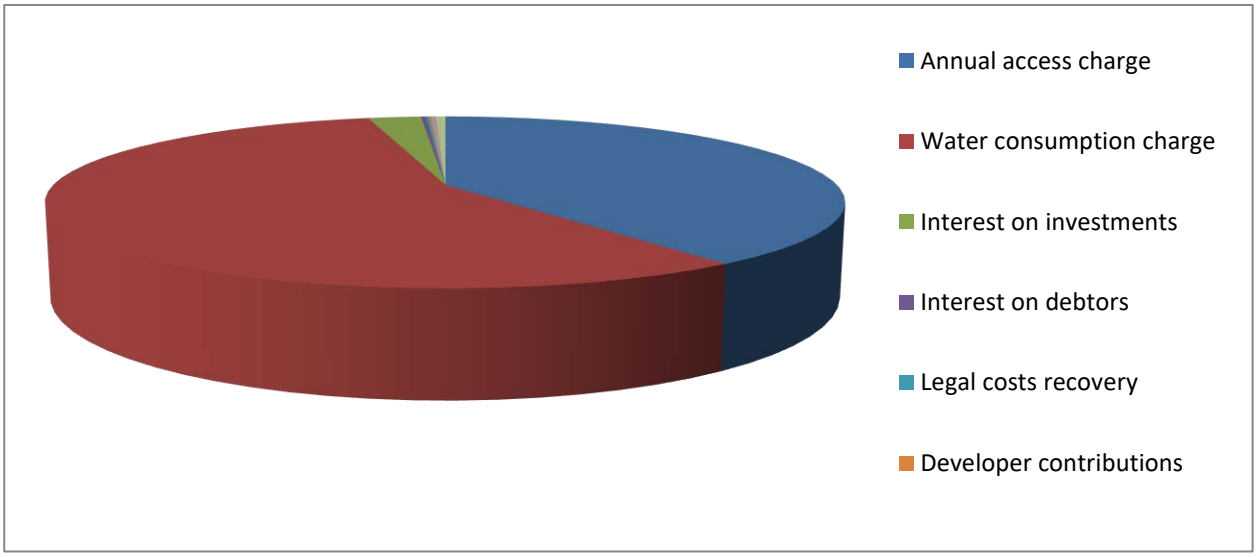
A summary of the funding requirements and expenditure over the next 10 years is included in Appendix D, with the projected budget amounts being based on 2018 dollars. Funding for management of assets can come from a variety of sources as detailed in the table on the next page.

Table 11.1: Where does our Income come from?

Item	Budget ($,000)
Annual access charge	1,833
Water consumption charge	2,595
Interest on investments	120
Interest on debtors	11
Legal costs recovery	7
Developer contributions	5
Tapping fees - house service connections	7
Meter reading	5
Water standpipe sales	22
Total	**4,602**

1. Budget Figures are the 10 year annual average amounts indexed by 2% p.a.

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



12. Key Performance Measures

Development of Key Performance Measures (KPM's) based on condition have been developed by considering the statutory regulated quality of potable water and agreed customer service levels. 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 Levels of Service section of this document.

Table 12.1 Performance Measures

Key Performance Measure	Level of Service	Target	Current
Incidence of unplanned interruptions	Water to be available to customers when required with minimal planned and no unplanned interruptions	<10 breaks per annum	105 breaks per annum[1]
Adequate water pressure	Water pressure is sufficient to meet customers' needs	Average operating pressure of 19m across the network, checked regularly to ensure compliance	No consistent methodology for checking pressure
Compliance with "Australian Drinking Water Guidelines 2004" issued by the National Health and Medical Research Council (NHMRC) and ARMCANZ	Water is suitable for drinking	100% compliance	100% compliance

[1] Source: Table 5 of 2015-16 NSW Water Supply and Sewerage Benchmarking Report (NSW DPI Water)

13. 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.

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

Task	Expected Completion
1. Add data on recently relined/ renewed water mains to the asset register	2018
2. Align the Asset Register (Authority) and the GIS data such that there is a common data set for all future asset management activities	2018
3. Prepare an updated version of this Asset Management Plan to reflect the updated asset register	2019
4. Investigate condition of water mains in Gundagai. Asset register shows a cohort of cast iron cement lined watermains laid in 1930 and 1940 in Gundagai, at condition grade 10. At this condition grade, these mains should be failing, yet staff do not report high levels of main breaks in Gundagai, only Cootamundra, where the mains are condition grades up to 9 only. Further investigation of the Gundagai mains at condition grade 10 to set priorities for watermain renewal.	2019
5. Criticality ratings to be allocated to all water assets to assist in the prioritisation of work and setting of intervention levels.	2020
6. Implement procedures to ensure that information on asset systems failures is recorded for asset management purposes	2018
7. Review of capital works planning beyond 2018/19, in accordance with recommendations of the Integrated Water Catchment Management Plan (ICWM)	2019
8. Review of water fees and charges in accordance with recommendations of the Integrated Water Catchment Management Plan (ICWM)	2019
9. Develop a reticulation model for both the Cootamundra and Gundagai water supply networks.	2020
10. Investigate the need for an additional reservoir in Cootamundra to alleviate capacity constraints. Scoping study.	2020
11. Monitor levels of service (KPM) and document outcomes. Use to plan service improvements.	2020

14. 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.

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.

Risk Management is considered in the development of individual Asset Management Plans. 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 14.1 Critical Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Treatment Plan
Chlorination failure	Death or serious injury	Council has plans to issue a boil water alert in conjunction with NSW Health should this occur
Water treatment works failure or supply failure from bulk water supplier	Death or serious injury	Council has plans to impose water restrictions should this occur
Contamination of the water supply distribution system	Death or serious injury	Council has plans to issue boil water alerts and undertake flushing
Reservoir contamination	Death or serious injury	Council has plans to drain the contaminated reservoir and refill them
Major power failure	Loss of production and/ or supply	Council has plans to impose water restrictions should this occur

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, higher maintenance intervention levels, etc.

The identification of critical pipe assets is identified in Table 5.1, reservoirs where there is a potential for failure to risk public safety or property have also been identified as critical, as has the Water Treatment Plant. Table 14.3 identifies the critical assets for the water network.

Table 14.2 Critical Assets

Critical Assets	Critical Failure Mode	Treatment Plan
Water Treatment Plant	Civil, electrical or chemical failure	Scheduled maintenance and regular inspection regime to ensure that it is functioning as required
Trunk pipeline from bulk water supplier	Power failure, pump failure or blockage	Scheduled maintenance of pumps and equipment. Regular inspection.
Reservoirs	Failure due to structural deterioration or contamination of water storage	Scheduled structural inspections and maintenance of vermin proofing including internal cleaning of the reservoirs.

15. Appendix A: Renewals

15.1 Mains replacement Program

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
17447	Gundagai Water	101-Reservoir-Hume H/Way (159.2m, 100mm, 1940)	100	159.2	2018	$16,725.6
17448	Gundagai Water	102-Tor-Hume H/Way (162.4m, 100mm, 1940)	100	162.4	2018	$17,061.7
17449	Gundagai Water	103-William-O'Hagan (136.4m, 100mm, 1940)	100	136.4	2018	$14,330.2
17464	Gundagai Water	117-Nurse Murray-Hanley (512.3m, 150mm, 1950)	150	512.3	2018	$72,818.3
17465	Gundagai Water	118-West-Tor (116.8m, 100mm, 1950)	100	116.8	2018	$12,271.0
17466	Gundagai Water	119-West-Reservoir (183.7m, 150mm, 1950)	150	183.7	2018	$26,111.1
17471	Gundagai Water	12-Middle -Tom (483.4m, 100mm, 1950)	100	483.4	2018	$50,786.0
17472	Gundagai Water	13-Mount-Eagle (254m, 150mm, 1950)	150	254	2018	$36,103.6
17473	Gundagai Water	14-Eagle-Camphor La (109.3m, 100mm, 1950)	100	109.3	2018	$11,483.1
17476	Gundagai Water	17-Luke-R.Dowell (296m, 100mm, 1950)	100	296	2018	$31,097.8
17480	Gundagai Water	20-Eagle-Sth Res. (342.5m, 150mm, 1950)	150	342.5	2018	$48,683.0
17485	Gundagai Water	25-Luke-Tom (212.2m, 100mm, 1950)	100	212.2	2018	$22,293.7
17486	Gundagai Water	26-Luke-Tumut (473m, 100mm, 1950)	100	473	2018	$49,693.4
17491	Gundagai Water	30-Hume Ho-Old Pump Stn (334.2m, 100mm, 1940)	100	334.2	2018	$35,111.1
17494	Gundagai Water	33-Rileys Flat-G Hindmarsh (249.7m, 100mm, 1950)	100	249.7	2018	$26,233.5
17496	Gundagai Water	35-Tumut-Luke (473.7m, 150mm, 1950)	150	473.7	2018	$67,331.7
17500	Gundagai Water	39-Oldpump Stn-Old Res. (1345m, 150mm, 1940)	150	1345	2018	$ 191,178.3
17502	Gundagai Water	40-Oldpump Stn-Old Res. (1345m, 150mm, 1940)	150	1345	2018	$ 191,178.3
17504	Gundagai Water	42-Old Res.-Otway (438.1m, 150mm, 1940)	150	438.1	2018	$62,271.5
17507	Gundagai Water	45-Otway-H/School (502.9m, 150mm, 1950)	150	502.9	2018	$71,482.2
17511	Gundagai Water	49-Hanley-Punch (319.5m, 75mm, 1940)	75	319.5	2018	$25,668.6
17513	Gundagai Water	50-Homer-Byron (240.3m, 100mm, 1940)	100	240.3	2018	$25,245.9
17515	Gundagai Water	52-Otway-Jones Ck (759.1m, 100mm, 1940)	100	759.1	2018	$79,751.0
17516	Gundagai Water	53-Punch-Mrselphick (111.4m, 100mm, 1940)	100	111.4	2018	$11,703.7
17518	Gundagai Water	55-Punch-Hanley (230.7m, 100mm, 1940)	100	230.7	2018	$24,237.3
17520	Gundagai Water	57-Punch-Stafford (421.8m, 75mm, 1940)	75	421.8	2018	$33,887.4
17524	Gundagai Water	61-Punch-S/Pool (457m, 100mm, 1940)	100	457	2018	$48,012.4
17533	Gundagai Water	6-Middle -South (451.1m, 100mm, 1950)	100	451.1	2018	$47,392.6
17536	Gundagai Water	72-First Ave-Punch (122.4m, 100mm, 1940)	100	122.4	2018	$12,859.3
17539	Gundagai Water	75-First Ave-Punch (112.5m, 100mm, 1940)	100	112.5	2018	$11,819.3
17540	Gundagai Water	76-Otway-Homer (462.3m, 100mm, 1940)	100	462.3	2018	$48,569.2
17541	Gundagai Water	77-Homer-Virgil (237.5m, 75mm, 1930)	75	237.5	2018	$19,080.8
17542	Gundagai Water	78-Sheridan-Punch (255.3m, 75mm, 1930)	75	255.3	2018	$20,510.8
17543	Gundagai Water	79-Homer-R/Way Stn (404.5m, 100mm, 1940)	100	404.5	2018	$42,496.8
17548	Gundagai Water	83-Hemans-Homer (462.7m, 75mm, 1930)	75	462.7	2018	$37,173.3
17550	Gundagai Water	85-Monument-Ovid (1257m, 100mm, 1940)	100	1257	2018	$ 132,060.4
17551	Gundagai Water	86-Ovid-Mid Dodd (630.7m, 100mm, 1940)	100	630.7	2018	$66,261.3
17555	Gundagai Water	8-Mount-Cross (444.2m, 100mm, 1950)	100	444.2	2018	$46,667.7
17566	Gundagai Water	9-Eagle-Purple (359.2m, 100mm, 1950)	100	359.2	2018	$37,737.6

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16571	Cootamundra Water	Back Brawlin Llyod Conkey To Shepherds (580m, 100m	100	580	2018	$68,103.6
16576	Cootamundra Water	Barnes St. From Barnes To Parker St (105m, 100mm,	100	105	2018	$12,329.1
16577	Cootamundra Water	Berthong St From Gundagai To End Of Betts (140m, 1	100	140	2018	$16,438.8
16578	Cootamundra Water	Berthong St. From Warren To Hume St (355m, 100mm,	100	355	2018	$41,684.1
16579	Cootamundra Water	Berthong St. From Wills To Hume St (200m, 100mm, 1	100	200	2018	$23,484.0
16580	Cootamundra Water	Betts St. From Gundagai Rd. To Cowc (650m, 200mm,	200	650	2018	$ 152,646.0
16585	Cootamundra Water	Bourke / Olney From Culdesac To Cameron Sq. Nth (1	100	100	2018	$11,742.0
16586	Cootamundra Water	Bourke St. From Sutton To Hovell St. (110m, 100mm,	100	110	2018	$12,916.2
16587	Cootamundra Water	Bourke St. From Thompson To Sutton (155m, 100mm, 1	100	155	2018	$18,200.1
16588	Cootamundra Water	Bradman / Bartley From Pinkerton To Wills St (630m	100	630	2018	$73,974.6
16564	Cootamundra Water	Adams Street From Adams To Pinkstone Ave (400m, 10	100	400	2018	$46,968.0
16565	Cootamundra Water	Adams Street From Adams To Weisell (95m, 150mm, 19	150	95	2018	$23,484.0
16566	Cootamundra Water	Adams Street From Coora To Minkara Ave (110m, 100m	100	110	2018	$12,916.2
16567	Cootamundra Water	Adams Street From Cutler To Coora Ave (125m, 100mm	100	125	2018	$14,677.5
16589	Cootamundra Water	Bullecourt St. From Bapaume To Renehan (120m, 100m	100	120	2018	$14,090.4
16569	Cootamundra Water	Back Brawlin (1260m, 100mm, 1970)	100	1260	2018	$ 147,949.2
16570	Cootamundra Water	Back Brawlin East Of Nashs Lane (450m, 100mm, 1970	100	450	2018	$52,839.0
16592	Cootamundra Water	Cameron Sq. North From Harley To Hay (80m, 100mm,	100	80	2018	$9,393.6
16572	Cootamundra Water	Back Brawlin Rd Back Brawlin To Pioneer P (580m, 1	150	580	2018	$ 143,376.0
16573	Cootamundra Water	Back Brawlin Rd West Of Nashs Lane (140m, 100mm, 1	100	140	2018	$16,438.8
16593	Cootamundra Water	Cameron Sq. South From Wall To Harley (100m, 100mm	100	100	2018	$11,742.0
16596	Cootamundra Water	Centenary Ave. From Campbell To Top Of Hill (325m,	100	325	2018	$38,161.5
16597	Cootamundra Water	Centenary Ave. From Cowcumbla To Lawrence (240m, 1	100	240	2018	$28,180.8
16598	Cootamundra Water	Centenary Ave. From Francis To Cowcumbla (205m, 10	100	205	2018	$24,071.1
16599	Cootamundra Water	Centenary Ave. From Lawrence To Campbell (205m, 10	100	205	2018	$24,071.1
16582	Cootamundra Water	Boudary Road From Cutler To Pinkstone (30m, 200mm,	200	30	2018	$7,045.2
16606	Cootamundra Water	Congou St. From Railway To Bapaume St. (110m, 100m	100	110	2018	$12,916.2
16609	Cootamundra Water	Cooper St From Parker To Thompson St (375m, 100mm,	100	375	2018	$44,032.5
16620	Cootamundra Water	Cowcumbla Street Florance St To Res No. 1 (1360m,	250	1360	2018	$ 420,240.0
16621	Cootamundra Water	Cowcumbla Street From Centenary To Thompson (145m,	150	145	2018	$35,844.0
16623	Cootamundra Water	Cowcumbla Street From Hovell To Llyod Conkey (200m	150	200	2018	$49,440.0
16627	Cootamundra Water	Cowcumbla Street From Sutton To Hovell (130m, 150m	150	130	2018	$32,136.0
16628	Cootamundra Water	Cowcumbla Street From Thompson To Sutton (115m, 15	150	115	2018	$28,428.0
16651	Cootamundra Water	French From Sutton To Hovell (130m, 100mm, 1950)	100	130	2018	$15,264.6
16652	Cootamundra Water	Fuller Drive Cowcumbla To Shepherds (350m, 200mm,	200	350	2018	$82,194.0

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16656	Cootamundra Water	Gundagai Road From Berthong To Florance (85m, 100m	100	85	2018	$9,980.7
16659	Cootamundra Water	Gundagai Road From Florance To East Gundagai (185m	100	185	2018	$21,722.7
16660	Cootamundra Water	Gundagai Road From Gundagai To Jubilee Ave (230m,	100	230	2018	$27,006.6
16663	Cootamundra Water	Harley Ave From Cameron Nth To Oban (55m, 100mm, 1	100	55	2018	$6,458.1
16664	Cootamundra Water	Harley From Cameron Sth To Temora St. (120m, 100mm	100	120	2018	$14,090.4
16665	Cootamundra Water	Harley From Oban To Cameron Sq. Sth (55m, 100mm, 1	100	55	2018	$6,458.1
16669	Cootamundra Water	Hay St. From Bapaume To Oban St. (60m, 100mm, 1950	100	60	2018	$7,045.2
16601	Cootamundra Water	Chamen St. From Binowee To Barnes Nth (1175m, 100m	100	1175	2018	$ 137,968.5
16670	Cootamundra Water	Hay St. From Oban To Temora St. (180m, 100mm, 1950	100	180	2018	$21,135.6
16671	Cootamundra Water	Hay St. From Odonnell To Adams St. (125m, 100mm, 1	100	125	2018	$14,677.5
16607	Cootamundra Water	Cooper St From Adams To Bourke (250m, 100mm, 1970)	100	250	2018	$29,355.0
16608	Cootamundra Water	Cooper St From Bourke To Rear Westpac Bank (165m,	100	165	2018	$19,374.3
16672	Cootamundra Water	Hay St. From Temora To Odonnelll (225m, 100mm, 195	100	225	2018	$26,419.5
16610	Cootamundra Water	Cooper St Rear Optm - Wallendoon (60m, 100mm, 1970	100	60	2018	$7,045.2
16613	Cootamundra Water	Coora Ave From Adams To Inala (250m, 100mm, 1985)	100	250	2018	$29,355.0
16614	Cootamundra Water	Coora Ave North End Of Inala (110m, 100mm, 1985)	100	110	2018	$12,916.2
16673	Cootamundra Water	Hay St. Murray / Bullecourt / Chamen (500m, 100mm,	100	500	2018	$58,710.0
16674	Cootamundra Water	Hemet / Hurley From Wallendoon To High School (80m	150	80	2018	$19,776.0
16675	Cootamundra Water	Hovell St From Cowcumbla To Lawrence (225m, 100mm,	100	225	2018	$26,419.5
16676	Cootamundra Water	Hovell St From Francis To Cowcumbla (200m, 100mm,	100	200	2018	$23,484.0
16677	Cootamundra Water	Hovell St From Hume To Gundagai Rd (200m, 100mm, 1	100	200	2018	$23,484.0
16678	Cootamundra Water	Hovell St From Lawrence To Sutton (330m, 100mm, 19	100	330	2018	$38,748.6
16679	Cootamundra Water	Hovell St From Mackay To Francis (460m, 100mm, 195	100	460	2018	$54,013.2
16680	Cootamundra Water	Hovell St From Parker To Morris (480m, 150mm, 1950	150	480	2018	$ 118,656.0
16625	Cootamundra Water	Cowcumbla Street From Poole Across To Byrne (250m,	150	250	2018	$61,800.0
16681	Cootamundra Water	Hovell St. From Adams To Bourke (250m, 150mm, 1950	150	250	2018	$61,800.0
16682	Cootamundra Water	Hovell St. From Bourke To Wallendoon (220m, 150mm,	150	220	2018	$54,384.0
16683	Cootamundra Water	Hovell St. From Sale Yards To Cementry (50m, 150mm	150	50	2018	$12,360.0
16684	Cootamundra Water	Hume St. From Cowong To Florance (100m, 100mm, 193	100	100	2018	$11,742.0
16685	Cootamundra Water	Hume St. From Parker To Cooper (130m, 100mm, 1933)	100	130	2018	$15,264.6
16686	Cootamundra Water	Hurley From Centenary To Thompson (145m, 100mm, 19	100	145	2018	$17,025.9

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16632	Cootamundra Water	Cowong St From Mackay To Hurley St (205m, 100mm, 1	100	205	2018	$24,071.1
16633	Cootamundra Water	Crowe Place From Crowe To Kirley (100m, 100mm, 198	100	100	2018	$11,742.0
16689	Cootamundra Water	Hurley From Hospital To Nursing Home (75m, 100mm,	100	75	2018	$8,806.5
16690	Cootamundra Water	Hurley From Margret To Ursula (130m, 100mm, 1940)	100	130	2018	$15,264.6
16636	Cootamundra Water	Cutler Ave Adams To Cutler Ave (425m, 100mm, 1978)	100	425	2018	$49,903.5
16637	Cootamundra Water	Cutler Ave From Adams To South Culdesac (285m, 200	200	285	2018	$66,929.4
16638	Cootamundra Water	Cutler Ave From Cutler To Scott Ave (225m, 100mm,	100	225	2018	$26,419.5
16691	Cootamundra Water	Hurley From Olney To Margret (145m, 100mm, 1940)	100	145	2018	$17,025.9
16640	Cootamundra Water	Cutler Ave Southern Culdesac (35m, 200mm, 1978)	200	35	2018	$8,219.4
16641	Cootamundra Water	Dickson St From Mackay To Hurley St (205m, 100mm,	100	205	2018	$24,071.1
16642	Cootamundra Water	Dickson St From Mackay To Poole St. (225m, 100mm,	100	225	2018	$26,419.5
16692	Cootamundra Water	Hurley From Parker To Centenary (125m, 100mm, 1940	100	125	2018	$14,677.5
16693	Cootamundra Water	Hurley From Poole To Olney (125m, 100mm, 1940)	100	125	2018	$14,677.5
16694	Cootamundra Water	Hurley From Thompson To Sutton (115m, 100mm, 1940)	100	115	2018	$13,503.3
16699	Cootamundra Water	Justin St. From Sutton To Hovell (125m, 100mm, 194	100	125	2018	$14,677.5
16709	Cootamundra Water	Mackay From Dickson To Hemet (160m, 100mm, 1945)	100	160	2018	$18,787.2
16711	Cootamundra Water	Mackay From Hemet To Poole (150m, 100mm, 1945)	100	150	2018	$17,613.0
16713	Cootamundra Water	Mackay From Margret To Ursula (125m, 100mm, 1945)	100	125	2018	$14,677.5
16714	Cootamundra Water	Mackay From Nursing Home To Dickson (60m, 100mm, 1	100	60	2018	$7,045.2
16715	Cootamundra Water	Mackay From Olney To Margret (145m, 100mm, 1945)	100	145	2018	$17,025.9
16720	Cootamundra Water	Mackay From Ursula To Parker (140m, 100mm, 1945)	100	140	2018	$16,438.8
16722	Cootamundra Water	Mackay St. From Hurley To Francis (225m, 100mm, 19	100	225	2018	$26,419.5
16727	Cootamundra Water	Mcconaghy/ White From Wills To Hume St (175m, 100m	100	175	2018	$20,548.5
16737	Cootamundra Water	Morris St (475m, 100mm, 1938)	100	475	2018	$55,774.5
16739	Cootamundra Water	Morris St. From Mcgowan To Mckenna Ave (175m, 150m	150	175	2018	$43,260.0
16741	Cootamundra Water	Murray / Bourke From Temora To Adams St. (315m, 20	200	315	2018	$73,974.6
16744	Cootamundra Water	Murray St. From Justin To Odonnell (105m, 100mm, 1	100	105	2018	$12,329.1
16745	Cootamundra Water	Murray St. From Odonnell To Fisher Park (280m, 100	100	280	2018	$32,877.6
16746	Cootamundra Water	Murray St. From Renehan To Adams St. (120m, 100mm,	100	120	2018	$14,090.4
16747	Cootamundra Water	Murray St. From Temora To Justin (125m, 100mm, 195	100	125	2018	$14,677.5
16749	Cootamundra Water	Oban St. From Hay To Murray (140m, 100mm, 1950)	100	140	2018	$16,438.8
16750	Cootamundra Water	Oban St. From Wall To Harley Ave (100m, 100mm, 195	100	100	2018	$11,742.0
16758	Cootamundra Water	Olney St. From Mackay To Hurley (195m, 100mm, 1933	100	195	2018	$22,896.9
16760	Cootamundra Water	Olympic Way From Wallendoon To Mackay (195m, 150mm	150	195	2018	$48,204.0
16777	Cootamundra Water	Pinkerton Rd. From Berthong To Bradman (130m, 250m	250	130	2018	$40,170.0

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16778	Cootamundra Water	Pinkerton Rd. From Williams To Hall (75m, 100mm, 1	100	75	2018	$8,806.5
16787	Cootamundra Water	Poole St. From High School To Mackay (140m, 150mm,	150	140	2018	$34,608.0
16789	Cootamundra Water	Poole St. From Mackay To Hurley (215m, 150mm, 1933	150	215	2018	$53,148.0
16790	Cootamundra Water	Poole St. From Mackay To Hurley (215m, 225mm, 1933	225	215	2018	$58,462.8
16791	Cootamundra Water	Poole St. From Wallendoon To Mackay (230m, 100mm,	100	230	2018	$27,006.6
16801	Cootamundra Water	Rinkin St. From Bartley To Pinkerton (325m, 150mm,	150	325	2018	$80,340.0
16802	Cootamundra Water	Rinkin St. From Halfway To Bartley (250m, 150mm, 1	150	250	2018	$61,800.0
16804	Cootamundra Water	Rinkin St. From Sale Yards To Halfway (50m, 150mm,	150	50	2018	$12,360.0
16805	Cootamundra Water	Scott Ave From Poole To Olney (125m, 100mm, 1933)	100	125	2018	$14,677.5
16808	Cootamundra Water	Short St. From Culdesac To Oban St. (150m, 100mm,	100	150	2018	$17,613.0
16811	Cootamundra Water	Sutton St (0m, 100mm, 1938)	100	0	2018	$ -
16812	Cootamundra Water	Sutton St From Bourke To Wallendoon (225m, 100mm,	100	225	2018	$26,419.5
16813	Cootamundra Water	Sutton St From Sutton To Temora St (360m, 100mm, 1	100	360	2018	$42,271.2
16814	Cootamundra Water	Sutton St. (0m, 100mm, 1938)	100	0	2018	$ -
16815	Cootamundra Water	Sutton St. From Campbell To Sth Stratton (140m, 10	100	140	2018	$16,438.8
16816	Cootamundra Water	Sutton St. From Cowcumbla To Lawrence (230m, 100mm	100	230	2018	$27,006.6
16817	Cootamundra Water	Sutton St. From Francis To Cowcumbla (200m, 100mm,	100	200	2018	$23,484.0
16819	Cootamundra Water	Sutton St. From Hurley To Francis (230m, 100mm, 19	100	230	2018	$27,006.6
16820	Cootamundra Water	Sutton St. From Lawrence To Campbell (205m, 100mm,	100	205	2018	$24,071.1
16821	Cootamundra Water	Sutton St. From Mackay To Hurley (205m, 100mm, 195	100	205	2018	$24,071.1
16826	Cootamundra Water	Temora / Hovell St From Morris To Adams (205m, 150	150	205	2018	$50,676.0
16696	Cootamundra Water	Inala Place Bet. Inala & Cutler Ave. (125m, 100mm,	100	125	2018	$14,677.5
16697	Cootamundra Water	Inala Place Minkara / Inala (345m, 100mm, 1985)	100	345	2018	$40,509.9
16831	Cootamundra Water	Temora St. From Hovell To Berthong (455m, 250mm, 1	250	455	2018	$ 140,595.0
16701	Cootamundra Water	Kirley Place From Kirley To Boundary (50m, 100mm,	100	50	2018	$5,871.0
16702	Cootamundra Water	Lane 16 / 27 From Adams To Bourke St (250m, 150mm,	150	250	2018	$61,800.0
16703	Cootamundra Water	Lawrence From Byrne To Ward (120m, 100mm, 1970)	100	120	2018	$14,090.4
16835	Cootamundra Water	Temora St. From Parker To Sutton (205m, 250mm, 195	250	205	2018	$63,345.0
16837	Cootamundra Water	Temora St. From Sutton To Hovell (145m, 250mm, 195	250	145	2018	$44,805.0
16838	Cootamundra Water	Temora St. From Wall To Harley (100m, 150mm, 1950)	150	100	2018	$24,720.0
16707	Cootamundra Water	Lawrence From Richards To Thompson (400m, 150mm, 1	150	400	2018	$98,880.0
16840	Cootamundra Water	Thompson St. From Campbell To Top Of Hill (200m, 1	100	200	2018	$23,484.0
16841	Cootamundra Water	Thompson St. From Cowcumbla To Lawrence (210m, 100	100	210	2018	$24,658.2
16842	Cootamundra Water	Thompson St. From Francis To Cowcumbla (210m, 100m	100	210	2018	$24,658.2
16843	Cootamundra Water	Thompson St. From Hurley To Francis (225m, 100mm,	100	225	2018	$26,419.5
16844	Cootamundra Water	Thompson St. From Lawrence To Campbell (230m, 100m	100	230	2018	$27,006.6
16845	Cootamundra Water	Thompson St. From Mackay To Hurley (225m, 100mm, 1	100	225	2018	$26,419.5

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16853	Cootamundra Water	Wall Ave From Cameron Sth To Temora St. (120m, 100	100	120	2018	$14,090.4
16854	Cootamundra Water	Wall Ave From Cammeron Nth. To Oban St. (55m, 100m	100	55	2018	$6,458.1
16855	Cootamundra Water	Wall Ave From Culdesac To Cameron Nth. (95m, 100mm	100	95	2018	$11,154.9
16856	Cootamundra Water	Wall Ave From Oban To Cameron Sq. Sth. (60m, 100mm	100	60	2018	$7,045.2
16857	Cootamundra Water	Wallendoon St. Berthong To Cowong (150m, 100mm, 19	100	150	2018	$17,613.0
16858	Cootamundra Water	Wallendoon St. From Caravan Park To Lane 27 (120m,	100	120	2018	$14,090.4
16860	Cootamundra Water	Wallendoon St. From Lane 27 To Parker St. (55m, 10	100	55	2018	$6,458.1
16861	Cootamundra Water	Wallendoon St. From Olney To Caravan Park (225m, 1	100	225	2018	$26,419.5
16863	Cootamundra Water	Wallendoon St. From Sutton To Hovell (115m, 150mm,	150	115	2018	$28,428.0
16864	Cootamundra Water	Wallendoon St. From Thompson To Hovell (265m, 150m	150	265	2018	$65,508.0
16865	Cootamundra Water	Wallendoon St. From Thompson To Sutton (150m, 150m	150	150	2018	$37,080.0
16867	Cootamundra Water	Warren St. From Hume To Gundagai Rd (230m, 100mm,	100	230	2018	$27,006.6
16868	Cootamundra Water	Warren St. From Mcconaghy To Cowong (365m, 100mm,	100	365	2018	$42,858.3
16871	Cootamundra Water	Williams Ave From Oban To Temora St. (245m, 100mm,	100	245	2018	$28,767.9
16873	Cootamundra Water	Wills St. From Berthong To Cowong (135m, 100mm, 19	100	135	2018	$15,851.7
16733	Cootamundra Water	Metro Access West End Of Back Brawlin Rd (590m, 10	100	590	2018	$69,277.8
16734	Cootamundra Water	Minkara Ave West End To East End Of Inala (310m, 1	100	310	2018	$36,400.2
16735	Cootamundra Water	Minkara Place From Adams To Inala (250m, 100mm, 19	100	250	2018	$29,355.0
16875	Cootamundra Water	Wills St. From Warren To Berthong (150m, 100mm, 19	100	150	2018	$17,613.0
16877	Cootamundra Water	Yass Rd. From Barnes Nth To Barnes Sth (340m, 100m	100	340	2018	$39,922.8
16740	Cootamundra Water	Murdoch Pl From Weisell To Murdoch (195m, 100mm, 1	100	195	2018	$22,896.9
16742	Cootamundra Water	Murray St. From Adams To Wallendoon St (470m, 150m	150	470	2018	$ 116,184.0
16748	Cootamundra Water	Northcott Ave Northcott To Culdesac (205m, 100mm,	100	205	2018	$24,071.1
16762	Cootamundra Water	Parker St From Bourke To Wallendoon St (250m, 150m	150	250	2018	$61,800.0
16763	Cootamundra Water	Parker St From Chamen To Temora St. (170m, 150mm,	150	170	2018	$42,024.0
16764	Cootamundra Water	Parker St From Justin To Odonnell St (120m, 150mm,	150	120	2018	$29,664.0
16765	Cootamundra Water	Parker St From Morris To Adams (250m, 100mm, 1970)	100	250	2018	$29,355.0
16766	Cootamundra Water	Parker St From Odonnell To Adams St. (145m, 150mm,	150	145	2018	$35,844.0
16767	Cootamundra Water	Parker St From Temora To Justin St (140m, 150mm, 1	150	140	2018	$34,608.0
16779	Cootamundra Water	Pinkstone Ave Crowe Place (290m, 100mm, 1985)	100	290	2018	$34,051.8
16780	Cootamundra Water	Pinkstone Ave From Adams To Inala Inc. Allumba (48	100	485	2018	$56,948.7
16781	Cootamundra Water	Pinkstone Ave From Murdoch To Crowe (125m, 100mm,	100	125	2018	$14,677.5
16782	Cootamundra Water	Pinkstone Ave From Pinkstone To Culdesac (125m, 10	100	125	2018	$14,677.5

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16783	Cootamundra Water	Pinkstone Ave Kirley Place (230m, 100mm, 1985)	100	230	2018	$27,006.6
16797	Cootamundra Water	Reservoir No 1 From Pinkstone To Dillon (200m, 93m	93	200	2018	$23,520.0
16798	Cootamundra Water	Reservoir No. 2 Access Road To Byrne St (1200m, 14	147	1200	2018	$ 211,356.0
16806	Cootamundra Water	Scott Ave Midway Along Scott Ave (125m, 100mm, 197	100	125	2018	$14,677.5
16807	Cootamundra Water	Scott Ave Scott / Poole (140m, 100mm, 1978)	100	140	2018	$16,438.8
16818	Cootamundra Water	Sutton St. From Hovell To Temora (260m, 100mm, 197	100	260	2018	$30,529.2
16822	Cootamundra Water	Sutton St. From Morris To Adams (200m, 100mm, 1970	100	200	2018	$23,484.0
16823	Cootamundra Water	Sutton St. From Temora To Morris (150m, 100mm, 197	100	150	2018	$17,613.0
16839	Cootamundra Water	Thompson St From Parker To Sutton (120m, 100mm, 19	100	120	2018	$14,090.4
16869	Cootamundra Water	Weisell Pl From Weisell To Pinkstone (155m, 100mm,	100	155	2018	$18,200.1
16874	Cootamundra Water	Wills St. From Northcott To Adams (Norht) (220m, 1	100	220	2018	$25,832.4
16876	Cootamundra Water	Yass Rd From Yass Rd To Chamen St (235m, 150mm, 19	150	235	2018	$58,092.0
16878	Cootamundra Water	Yass Rd. From North To South (Yass Rd.) (425m, 100	100	425	2018	$49,903.5
16583	Cootamundra Water	Boundary Rd. Pinkstone Ave To Res No 1 (930m, 220m	220	930	2020	$ 235,643.4
16647	Cootamundra Water	Florance (710m, 225mm, 1956)	225	710	2020	$ 193,063.2
16648	Cootamundra Water	Florance St. Access Road To Res No 2 (115m, 225mm,	225	115	2020	$31,270.8
16649	Cootamundra Water	Francis From Sheahan To Dickson (590m, 225mm, 1956	225	590	2020	$ 160,432.8
16654	Cootamundra Water	Golf Course Access Road To Poole St (1000m, 147mm,	147	1000	2020	$ 176,130.0
16655	Cootamundra Water	Golf Course South Of Hurley St. (187m, 220mm, 1956	220	187	2020	$47,382.1
16657	Cootamundra Water	Gundagai Road From Betts To Hume (415m, 250mm, 195	250	415	2020	$ 128,235.0
16658	Cootamundra Water	Gundagai Road From Doidge To Warren (90m, 150mm, 1	150	90	2020	$22,248.0
16661	Cootamundra Water	Gundagai Road From Warren To Berthong (140m, 150mm	150	140	2020	$34,608.0
16687	Cootamundra Water	Hurley From Dickson To Hemet (160m, 225mm, 1956)	225	160	2020	$43,507.2
16688	Cootamundra Water	Hurley From Hemet To Poole (145m, 225mm, 1956)	225	145	2020	$39,428.4
16710	Cootamundra Water	Mackay From Doidge To Betts (215m, 225mm, 1956)	225	215	2020	$58,462.8
16712	Cootamundra Water	Mackay From Hovell To Victoria (180m, 150mm, 1956)	150	180	2020	$44,496.0
16716	Cootamundra Water	Mackay From Parker To Sutton (390m, 225mm, 1956)	225	390	2020	$ 106,048.8
16717	Cootamundra Water	Mackay From Poole To Parker (525m, 225mm, 1956)	225	525	2020	$ 142,758.0
16718	Cootamundra Water	Mackay From Sutton To Doidge (350m, 225mm, 1956)	225	350	2020	$95,172.0
16721	Cootamundra Water	Mackay From Victoria To Doidge (33m, 150mm, 1956)	150	33	2020	$8,157.6
16870	Cootamundra Water	West End Of Hurley From Hurley To Adams St. (710m,	220	710	2020	$ 179,899.8
17487	Gundagai Water	27-Mount-Col Vietch (130m, 100mm, 1960)	100	130	2024	$13,657.8
17506	Gundagai Water	44-Hanley-To Nth End (196.2m, 100mm, 1960)	100	196.2	2024	$20,612.8
17519	Gundagai Water	56-Jones Ck-Mackellar (502.3m, 100mm, 1960)	100	502.3	2024	$52,771.6
17528	Gundagai Water	65-West-Caravan Pk (152m, 100mm, 1960)	100	152	2024	$15,969.1
16555	Cootamundra Water	Adams St From Hay To Murray (150m, 100mm, 1960)	100	150	2024	$17,613.0
16556	Cootamundra Water	Adams St From Lane 16 To Parker St (55m, 100mm, 19	100	55	2024	$6,458.1

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16557	Cootamundra Water	Adams St From Mcgowan To Congou (330m, 100mm, 1960	100	330	2024	$38,748.6
16559	Cootamundra Water	Adams St From Murray To Lane 16 (45m, 200mm, 1960)	200	45	2024	$10,567.8
16562	Cootamundra Water	Adams St. From Congou To Hay (220m, 100mm, 1960)	100	220	2024	$25,832.4
16563	Cootamundra Water	Adams St. From Short To Congou St. (205m, 100mm, 1	100	205	2024	$24,071.1
16568	Cootamundra Water	Albert From Olney To Margret (200m, 100mm, 1960)	100	200	2024	$23,484.0
16591	Cootamundra Water	Byrne/Lawrence Top Byrne St. (85m, 100mm, 1960)	100	85	2024	$9,980.7
16594	Cootamundra Water	Campbell From Poole To Olney (120m, 100mm, 1960)	100	120	2024	$14,090.4
16595	Cootamundra Water	Campbell From Thompson To Sutton (130m, 100mm, 196	100	130	2024	$15,264.6
16600	Cootamundra Water	Centenary Ave. From Wallendoon To Mackay (210m, 10	100	210	2024	$24,658.2
16602	Cootamundra Water	Chamen St. From Temora To Queen (115m, 100mm, 1960	100	115	2024	$13,503.3
16615	Cootamundra Water	Cowcumbla From Cowcumbla To Lawrence (200m, 100mm,	100	200	2024	$23,484.0
16617	Cootamundra Water	Cowcumbla St From Phillip To Meagher (180m, 50mm,	50	180	2024	$13,793.4
16619	Cootamundra Water	Cowcumbla St. From Cowcumbla To Culdesac (165m, 10	100	165	2024	$19,374.3
16622	Cootamundra Water	Cowcumbla Street From Donaldson To Meagher St. (60	150	60	2024	$14,832.0
16624	Cootamundra Water	Cowcumbla Street From Meagher To Richards (105m, 1	150	105	2024	$25,956.0
16626	Cootamundra Water	Cowcumbla Street From Poole To Donaldson St (237m,	150	237	2024	$58,586.4
16629	Cootamundra Water	Cowcumbla Street Parker To Centenary (125m, 150mm,	150	125	2024	$30,900.0
16630	Cootamundra Water	Cowcumbla Street Ursula Street (30m, 150mm, 1960)	150	30	2024	$7,416.0
16631	Cootamundra Water	Cowcumbla Street Ursula To Parker (100m, 150mm, 19	150	100	2024	$24,720.0
16634	Cootamundra Water	Crown St. From Adams To Bourke (250m, 100mm, 1960)	100	250	2024	$29,355.0
16635	Cootamundra Water	Crown St. From Crown To Wallendoon (355m, 100mm, 1	100	355	2024	$41,684.1
16639	Cootamundra Water	Cutler Ave From Mcgowan To Short St (100m, 100mm,	100	100	2024	$11,742.0
16645	Cootamundra Water	Donaldson St. From Lawrence To Top Of Hill (195m,	100	195	2024	$22,896.9
16646	Cootamundra Water	Elizabeth From Poole To Olney (115m, 100mm, 1960)	100	115	2024	$13,503.3
16650	Cootamundra Water	French From Olney To Meagher (250m, 100mm, 1960)	100	250	2024	$29,355.0
16704	Cootamundra Water	Lawrence From Centenary To Thompson (150m, 100mm,	100	150	2024	$17,613.0
16705	Cootamundra Water	Lawrence From John To Centenary (130m, 100mm, 1960	100	130	2024	$15,264.6
16706	Cootamundra Water	Lawrence From Richards To John (135m, 100mm, 1960)	100	135	2024	$15,851.7
16708	Cootamundra Water	Lawrence From Ward To Richard (130m, 100mm, 1960)	100	130	2024	$15,264.6
16723	Cootamundra Water	Margaret St. From Hurley To Elizabeth (175m, 100mm	100	175	2024	$20,548.5
16724	Cootamundra Water	Margaret St. From Phillip To Cowcumbla (180m, 100m	100	180	2024	$21,135.6

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16728	Cootamundra Water	Mcgowan St. From Adams To Lane 15 (100m, 100mm, 19	100	100	2024	$11,742.0
16729	Cootamundra Water	Mcgowan St. From Odonnell To Adams St (120m, 100mm	100	120	2024	$14,090.4
16730	Cootamundra Water	Mcgowan St. From Queen To Odonnell (125m, 100mm, 1	100	125	2024	$14,677.5
16731	Cootamundra Water	Meagher St. From Meagher Across Cowcum. (30m, 100m	100	30	2024	$3,522.6
16736	Cootamundra Water	Morris / Thompson From Bourke To Wallendoon (220m,	100	220	2024	$25,832.4
16738	Cootamundra Water	Morris St From Sutton To Bourke (585m, 100mm, 1960	100	585	2024	$68,690.7
16751	Cootamundra Water	Odonnell From Congou To Hay St. (155m, 100mm, 1960	100	155	2024	$18,200.1
16752	Cootamundra Water	Odonnell From Hay To Murray St. (130m, 100mm, 1960	100	130	2024	$15,264.6
16753	Cootamundra Water	Odonnell From Mcgowan To Congou (430m, 100mm, 1960	100	430	2024	$50,490.6
16754	Cootamundra Water	Odonnell From Murray To Parker (180m, 100mm, 1960)	100	180	2024	$21,135.6
16755	Cootamundra Water	Olney St. From Albert To Elizabeth (80m, 100mm, 19	100	80	2024	$9,393.6
16756	Cootamundra Water	Olney St. From Elizabeth To French (80m, 100mm, 19	100	80	2024	$9,393.6
16757	Cootamundra Water	Olney St. From Hurley To Albert (110m, 100mm, 1960	100	110	2024	$12,916.2
16759	Cootamundra Water	Olney St. Phillip Across To Byrne (175m, 150mm, 19	150	175	2024	$43,260.0
16761	Cootamundra Water	Parker / Francis From Francis To Cowcumbla (300m,	150	300	2024	$74,160.0
16768	Cootamundra Water	Parker St. From Cowcumbla To Lawrence (255m, 100mm	100	255	2024	$29,942.1
16769	Cootamundra Water	Parker St. From Hurley To Francis (225m, 150mm, 19	150	225	2024	$55,620.0
16770	Cootamundra Water	Parker St. From Lawrence To Top Of Hill (300m, 100	100	300	2024	$35,226.0
16771	Cootamundra Water	Parker St. From Mackay To Hurley (205m, 150mm, 196	150	205	2024	$50,676.0
16773	Cootamundra Water	Parker St. From S.Circle To Cowcumbla (300m, 100mm	100	300	2024	$35,226.0
16774	Cootamundra Water	Phillip / Byrne St. From Phillip To Olney (100m, 1	150	100	2024	$24,720.0
16775	Cootamundra Water	Phillip / Meagher From S.Circle To Cowcumbla (190m	100	190	2024	$22,309.8
16776	Cootamundra Water	Phillip St From Byrne To West Lawrence (260m, 150m	150	260	2024	$64,272.0
16784	Cootamundra Water	Poole St. From Albert To French (155m, 150mm, 1960	150	155	2024	$38,316.0
16785	Cootamundra Water	Poole St. From Cowcumbla To Poole Sth (100m, 100mm	100	100	2024	$11,742.0
16786	Cootamundra Water	Poole St. From French To Cowcumbla (195m, 150mm, 1	150	195	2024	$48,204.0
16788	Cootamundra Water	Poole St. From Hurley To Albert (95m, 150mm, 1960)	150	95	2024	$23,484.0
16792	Cootamundra Water	Queen St. From Murray To Parker St. (235m, 100mm,	100	235	2024	$27,593.7
16799	Cootamundra Water	Richard St. From Lawrence To Top Of Hill (255m, 10	100	255	2024	$29,942.1
16800	Cootamundra Water	Richard St. From Wallendoon To Mackay (220m, 150mm	150	220	2024	$54,384.0
16803	Cootamundra Water	Rinkin St. From Rinkin To Pinkerton (680m, 100mm,	100	680	2024	$79,845.6
16809	Cootamundra Water	Southee School Phillip St. (120m, 100mm, 1960)	100	120	2024	$14,090.4
16824	Cootamundra Water	Sutton St. From Wallendoon To Mackay (225m, 100mm,	100	225	2024	$26,419.5

ams_num	town	Item_name	dia m	length	year_ due	Replacement $
16825	Cootamundra Water	Sutton St. Olympic Way To Back Brawlin (360m, 100m	100	360	2024	$42,271.2
16846	Cootamundra Water	Thompson St. From Wallendoon To Mackay (185m, 100m	100	185	2024	$21,722.7
16847	Cootamundra Water	Ursula St. Across Cowcumbla @ Ursula (20m, 100mm,	100	20	2024	$2,348.4
16848	Cootamundra Water	Ursula St. From Hurley To Southee Circle (285m, 10	100	285	2024	$33,464.7
16849	Cootamundra Water	Ursula St. From S.Circle To Cowcumbla (210m, 100mm	100	210	2024	$24,658.2
16850	Cootamundra Water	Ursula St. From S.Circle To Cowcumbla (250m, 100mm	100	250	2024	$29,355.0
16872	Cootamundra Water	Williams/Mckeena From Temora To Adams St. (375m, 1	100	375	2024	$44,032.5
Total						**$12,134,165.9**

15.2 Water Treatment Renewals

ams_num	town	Item_name	year_due	Replacement $
17988	Gundagai Water	Filtration: Gravity Sand Filters - Media	2021	$39,000.0
Total				**$39,000.0**

15.3 Storage Renewals

ams_num	town	Item_name	year_due	Replacement $
18024	Cootamundra Water	Cootamundra Reservoir 1: Electrical	2018	$10,400.0
18026	Cootamundra Water	Cootamundra Reservoir 1: Perimeter Fence	2018	$21,840.0
18031	Cootamundra Water	Cootamundra Reservoir 2: Perimeter Fence	2019	$20,930.0
18025	Cootamundra Water	Cootamundra Reservoir 1: Ladder / Platform	2022	$45,500.0
Total				**$98,670.0**

16. Appendix B Upgrade / New Capital Works Program

Water Supply - Augmentation	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Water reservoir expansion	0	0	126,000	0	0	0	0	**0**	**0**
Gundagai Treatment Works expansion	126,000	26,000	0	0	0	0	377,500	**0**	**0**
Water Supply to Nangus Village	636,645	0	0	0	0	0	0	**0**	**0**
Water Supply to the Dog on the Tuckerbox	589,940	0	0	0	0	0	0	**0**	**0**
Augmentation Works Total	**1,352,585**	**26,000**	**126,000**	**0**	**0**	**0**	**377,500**	**0**	**0**

17. Appendix C: 10 Year Financial Plan (2018 $,000)

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Income											
Annual access charge	1,520	1,587	1,658	1,734	1,804	1,878	1,939	2,002	2,068	2,135	1,833
Water consumption charge	2,058	2,176	2,303	2,440	2,561	2,690	2,783	2,879	2,979	3,082	2,595
Interest on investments	105	147	135	62	118	47	88	126	185	183	120
Interest on debtors	9	10	10	10	10	11	11	11	12	12	11
Legal costs recovery	5	6	6	6	6	7	7	7	7	8	7
Developer contributions	5	5	8	8	8	8	6	6	0	0	5
Tapping fees - house service connections	5	6	6	6	6	7	7	7	7	8	7
Meter reading	5	5	5	5	5	5	5	5	5	5	5
Water standpipe sales	19	19	20	21	21	22	22	23	24	24	22
Total Income	**3,731**	**3,960**	**4,150**	**4,291**	**4,541**	**4,673**	**4,868**	**5,068**	**5,287**	**5,457**	**4,602**
Operations											
Employee Costs	215	221	226	216	222	229	235	242	250	257	231
Administration	697	724	762	782	812	844	876	909	944	980	833
Plant and equipment	10	10	11	11	11	11	12	12	12	12	11
Cootamundra Water purchase - consumption charge	963	983	1,004	1,025	1,046	1,068	1,091	1,114	1,137	1,161	1,059
Cootamundra Water purchase - access charge	435	444	453	463	472	482	492	503	513	524	478
Gundagai WTP Energy costs	106	111	117	123	129	133	139	146	154	161	132
Gundagai WTP Internal Charges	16	16	17	19	20	22	23	23	24	25	20
Gundagai WTP Chemicals	30	31	31	32	32	33	34	35	35	36	33
Total Operations	**2,472**	**2,540**	**2,621**	**2,669**	**2,746**	**2,822**	**2,902**	**2,984**	**3,069**	**3,156**	**2,798**
Maintenance											
Mains, Service Lines & Connections maintenance	449	458	468	478	488	498	508	519	530	541	494
Reservoir Maintenance	26	27	27	28	28	29	30	30	31	31	29
Water meters maintenance	33	33	34	35	36	36	37	38	39	40	36
Gundagai WTP Maintenance	196	200	204	208	213	217	222	227	231	236	215
Total Maintenance	**703**	**718**	**733**	**749**	**764**	**780**	**797**	**814**	**831**	**848**	**774**
Renewals											
Water Reticulation	1,925	1,270	3,216	88	51	52	54	55	1,628	275	861
Storages	0	0	76	13	107	0	0	0	0	0	20
Sub Systems	0	0	0	32	3,000	0	0	0	0	0	303
Mechanical	0	0	0	0	107	0	0	0	0	0	11
Total Renewal	**1,925**	**1,270**	**3,292**	**133**	**3,265**	**52**	**54**	**55**	**1,628**	**275**	**1,195**
Upgrade / Expansion											
Water reservoir expansion	0	0	126	0	0	0	0	0	0	0	13
Gundagai Treatment Works expansion	126	26	0	0	0	0	378	0	0	0	53
Water Supply to Nangus Village	637	0	0	0	0	0	0	0	0	0	64
Water Supply to the Dog on the Tuckerbox	590	0	0	0	0	0	0	0	0	0	59

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Total Upgrade / Expansion	**1,353**	**26**	**126**	**0**	**0**	**0**	**378**	**0**	**0**	**0**	**188**
Total Expenditure	**6,453**	**4,555**	**6,772**	**3,551**	**6,775**	**3,655**	**4,130**	**3,853**	**5,527**	**4,279**	**4,955**

Cootamundra-Gundagai Regional Council

Sewerage Services Asset Management Plan

Version 1.1 June 2018

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Document Control					
Rev No	**Date**	**Revision Details**	**Author**	**Verifier**	**Approver**
1.0	June 2018	Draft	J Hansen & M Brearley		
1.2	July 2018	Draft AM Plan Version 1.2 - refined following staff and Councillor workshops	J Hansen & M Brearley		

1. Executive Summary

Council provides an environmentally responsible and cost-effective sewerage service to the towns of Cootamundra and Gundagai. Council's sewerage services strive to satisfy all applicable statutory requirements.

According to an independent valuation by Australis Advisory, Council's sewerage network had a replacement value of **$47.8 million,** and a written down value of **$21.9 million** on the 30 June 2017.

This plan assists Council in the decision-making process and is presented at a high level to provide key information that can used in the determination of levels of service and funding required. The following table identifies the asset categories in this plan, the ten (10) year average costs and funding gap.

Table 1.1: Sewerage Asset Portfolio Overview (in 2018 $,000)

Asset	Fair Value	Operation & Maintenance	Renewal	Upgrade & New	Funding Gap	Backlog Year 1	Backlog Year 10
Sewer Reticulation	29,798	1,739	743	-	472	8,611	4,718
Mechanical	1,043	294	42	-	1	195	13
Electrical	568	181	0	-	12	0	125
Civil	2,255	105	3	-	0	0	0
Sub Systems	14,125	0	0	1,300	56	48	558
Other	0	0	0	-	0	0	0
Total	**47,789**	**2,319**	**788**	**1,300**	**539**	**8,854**	**5,414**

Notes:

1. *Budget Figures are the 10 year annual average amounts.*

Figure 1.1: What will we spend over the next 10 years (2018 $M)?

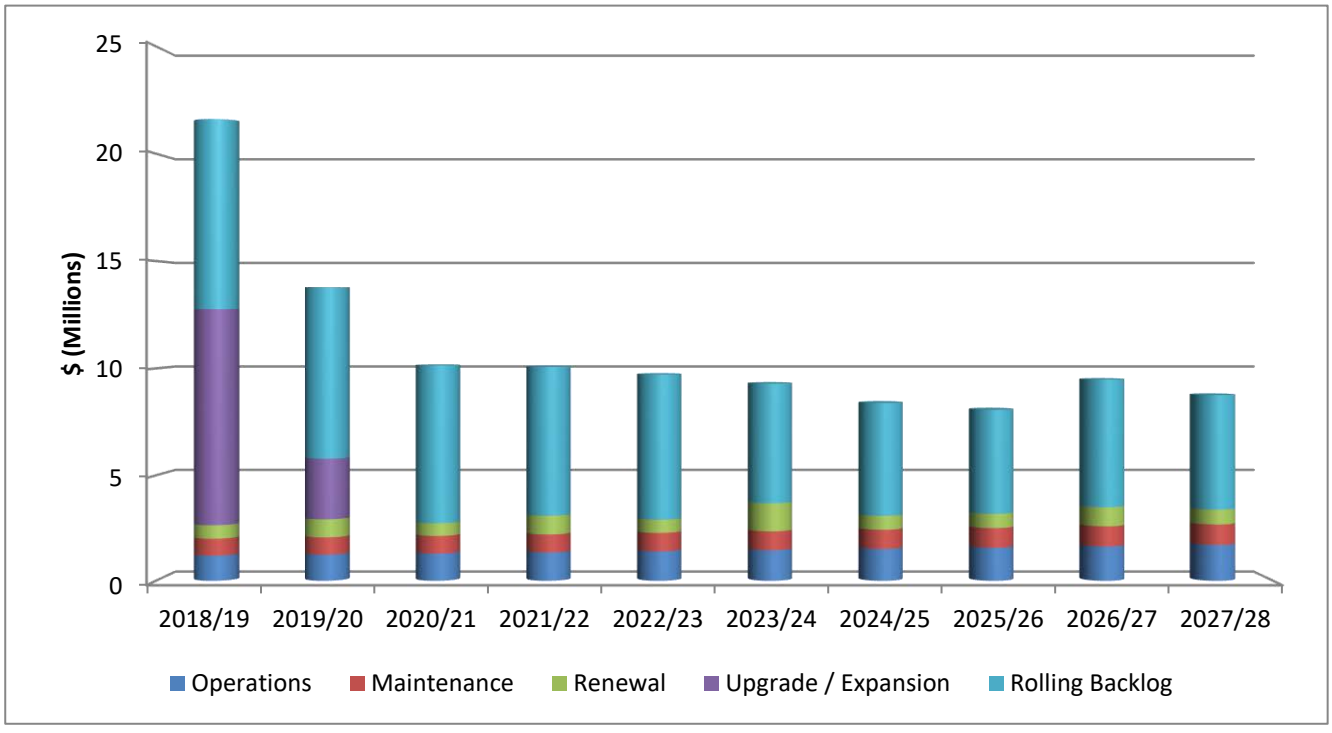


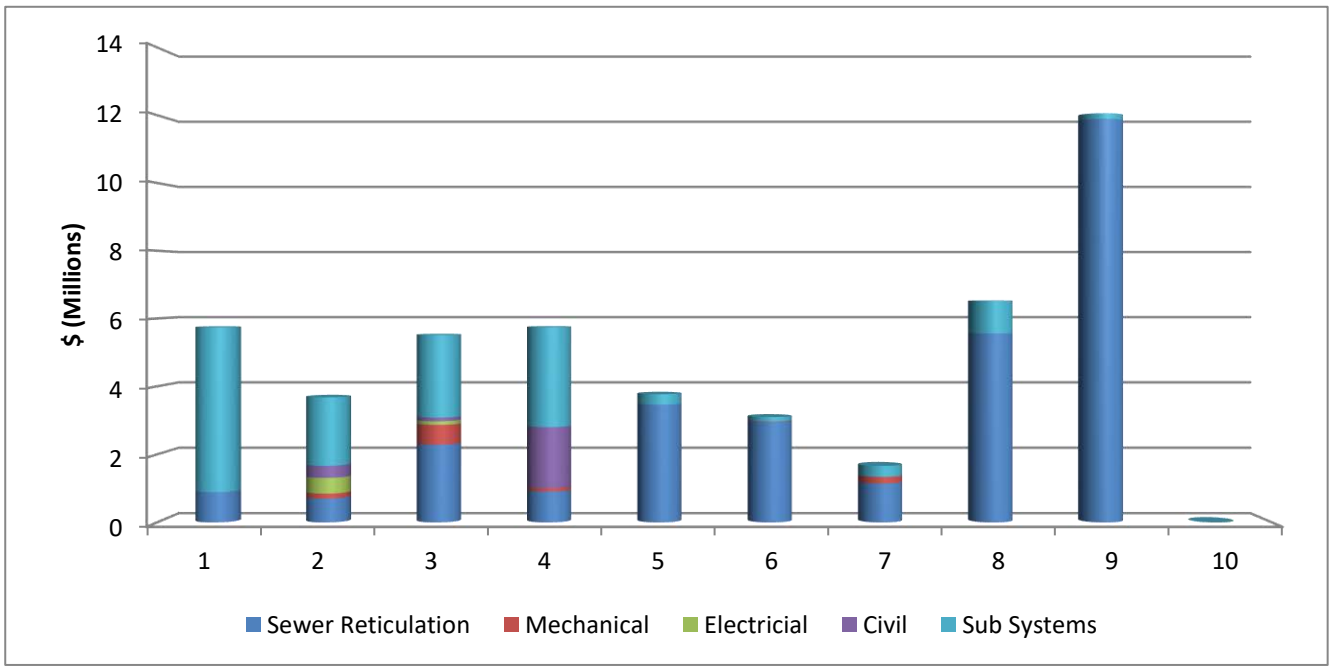
Figure 1.1 identifies the proposed expenditure over the next 10 years together with the backlog. The identified backlog in year 1 of the plan is $8.9 million. However, based on the current level of funding it is expected that the backlog will be

reduced to $5.4 million in ten years' time as Council invests in the renewal of sewer reticulation. The projected budget amounts are based on 2018 dollars.

The current condition of our assets is shown in the following graph based on the value of each asset in each of 10 conditions ranging from 1 to 10, with 1 being near new and 10 as a completely failed asset.

The spike at condition grade 9 represents the cohort of aging sewer mains that have reached end of life and are providing unreliable service to the community.

Figure 1.2: What condition are our assets in ($M)?



The process of managing our sewer assets is one of continually improving Councils asset knowledge. This includes: 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 13 contains details of the plan to further improve the details contained in the next plan.

2. Strategic Objectives

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

1. Provides sewerage services in a manner that supports the outcomes identified in the Council Community Strategic Plan:
    - Encourages water reuse where practicable
    - Community is satisfied with service delivery
    - Ensures Council's long term financial sustainability is achieved
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.

Cootamundra-Gundagai Regional Council developed a comprehensive community engagement strategy to ensure a broad range of opinions, ideas and visions were captured to help shape the ***Cootamundra-Gundagai Community Strategic Plan 2018-28***.

To assist in the delivery of the objectives in this plan, a number of key documents and 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 System	Electronic system that contains the asset register, condition ratings and used to model future renewals (Civica Authority).
GIS	Geographical information system that produces maps of assets.
Water and Sewerage Strategic Business Plan	This document provides supporting information for Council's Community Strategic Plan, Delivery Program and Operational Plan and Budget.

The CGRC CSP Outcomes supported by the Sewer Services Asset Management Plan include:

- Objective 3.1c: Investigate and implement sustainable waste and water strategies
- Objective 3.2c: Deliver and maintain infrastructure to meet the current and future needs of our community.
- Objective 4.3b: Council meets all legislative requirements and operates within good governance frameworks

3. Services Provided & Classification

Criticality ratings and condition ratings are being developed to reflect optimum asset management practices. In the future, this will allow Council to have a more realistic grading of its assets to determine intervention levels and renewal costs based on risk. The criticality rating will identify different intervention levels for different assets depending on their assessed criticality and consequence rating. Council's sewerage assets are yet to be allocated a criticality rating. Proposed criticality ratings are as follows:

Criticality Grade	Sewer
AA	Rising mains 150mm and 200mm
A	Rising mains 100mm
A	Gravity mains 225mm and 300mm
B	Rising mains 50mm and 80mm
B	Gravity mains 100mm and 150mm
C	Water mains – effluent recycling

The sewerage assets had a fair value of $47.8 million on the 30 June 2017. Details of the major components are contained in Table 3.1 together with their renewal cost

Table 3.1: What are the elements of our sewerage network?

Classification	Description	Sub-class	Renewal Cost ($)	Dimension/ Number of assets
Civil	Building	Buildings at SPS	$156,000	3
	Siteworks	SPS perimeter fences	$22,113	3
	Wet / Dry Pump Well	SPS well structure	$1,667,388	2
	Wet Pump Well	SPS well structure	$409,630	7
Electrical	Switchboard	SPS and treated effluent PS switchboards	$437,450	10
	Telemetry	SPS telemetry	$124,800	8
	Wet/ Dry Pump Well	SPS electrical works	$5,460	1
Mechanical	Dosing System	Wet well dosing system	$21,100	2
	Gantry	Single rail overhead gantry	$32,500	1
	Pipework	SPS pipework	$344,500	8
	Pumps	SPS and STP pumps	$201,500	19
	Valves	Sewer pumping station valves	$145,600	8
	Wet/ Dry Pump Well	SPS mechanical components	$265,200	6
	Wet Pump Well	SPS mechanical components	$31,200	3
Reticulation	AC		$278,080	1,729.9m
	CI		$170,732	934.7m
	DICL		$604,824	2,200m
	HDPE		$81,014	420m
	PE		$24,227	175m
	PVC		$664,511	3,643.2m

Classification	Description	Sub-class	Renewal Cost ($)	Dimension/ Number of assets
	UPVC		$978,823	5,517.8m
	VC		$14,509,634	77,772.9m
Sub-Systems	Cootamundra STP	Aerator	$466,700	
		Building	$63,050	
		Civil	$179,400	
		Electrical	$85,800	
		Filter	$123,500	
		Inlet works	$204,750	
		Lagoon	$8,247,947	
		Mechanical	$455,000	
		Mixers	$48,100	
		Process Systems	$9,750	
		Pump	$133,770	
		Sedimentation	$740,105	
		Structure	$25,740	
		Switchboard	$38,350	
		Tank	$48,750	
		WAS	$15,600	
Sub-Systems	Gundagai STP	Drying Bed	$127,400	
		Lagoon	$1,462,500	
		Screening Pit	$23,400	
		Screens	$9,750	
		Sedimentation	$591,955	
		Siteworks	$68,250	
		Sludge Tank	$317,758	
		Trickling Filter	$566,471	
		Walkway / Platform	$71,500	
		Total Renewal Cost	**$35,301,582**	92km of reticulation

4. Levels of Service

Council is responsible for providing cost effective sewerage services to the towns of Cootamundra and Gundagai. Council's sewerage services strive to meet the Level of Service to which the community has agreed and for which they are willing to pay. Council's sewerage services endeavour to satisfy all statutory requirements.

Levels of service indicators that have been developed for sewerage services are based on the objectives set in the Community Strategic Plan. These objectives have been used to define Community Levels of Service (CLOS) which relate 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 they community are asking for.

Table 4.1 summarises at a high level what the community desires for each asset and how Council will deliver it. The CSP Ref 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	Category	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	How Measured
3.2c & 4.3b	Council to deliver and maintain infrastructure to meet the current and future needs of our community: Council meets all legislative requirements and operates within good governance frameworks	Reliable sewerage service	Incidence and duration of unplanned interruptions	Frequency of sewerage main breaks and chokes
				Frequency of property connection sewer breaks and chokes
				Average sewerage interruption duration
				Frequency of sewerage complaints
		Safe treatment of sewage	Source management, including liquid trade waste management Operation of equipment in accordance with manuals and procedures Testing of sewage	Percentage of sewage volume treated that was compliant

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

Unplanned Service Interruption - Main Breaks and Chokes

Until recently, operational staff in Cootamundra could be required to rectify up to 13 sewer chokes per day. Older VC sewer mains in Cootamundra were prone to blockages, leading to unplanned service interruption. In 2017, Council implemented a sewer main relining program targeting the most problematic mains, and an annual root kill program, to

remove tree roots from sewer mains. The outcome of these initiatives has been very positive, with operational staff now reporting in 2018, less than three sewer chokes per week on average in Cootamundra.

Sewer chokes and breaks are not as problematic in Gundagai, where Council has reliable data on problem mains, which is used to inform the main relining program. Operational staff in Gundagai also regularly use specialist contractors to inspect sewer mains using CCTV, to program maintenance and renewal tasks.

Service Areas

Within the town boundaries of Cootamundra, sewer services can be provided to all properties. Because of the hilly topography of Gundagai town, there are some areas in town that cannot be serviced by a gravity system. In this situation, a pressure system must be provided by the property owner, to Council's requirements, as a condition of development consent.

Trade Waste

The Cootamundra sewer treatment plant, is a modern facility and has been designed to treat trade waste. The Gundagai sewer treatment plant (STP) is very old, with obsolete technology. It is unable to treat trade waste. It is envisaged that the new Gundagai STP, will have the functionality and capacity to treat trade waste.

5. Condition of Our Assets

Prior to commencement of this Sewer Asset Management Plan, Cootamundra-Gundagai's portfolio of sewer assets were valued in accordance with "Fair Valuation" principles. A specialist service provider, Australis Advisory conducted field survey, involving a physical inspection of the ground level facility assets such as the sewer treatment plants and sewer pumping stations.

The objective of the condition assessment survey was to uncover any evidence that would challenge the default useful life for that asset class, such as corrosion (or lack of), obvious mechanical/ electrical defects or structural damage. Survey data was collected in the field using electronic means (tablet).

During the condition inspection, the inspector was of the opinion that with the exception of the Gundagai sewer treatment plant, and several minor defects, the above-ground water and sewer infrastructure is in good condition and reflects diligent maintenance.

The Gundagai sewer treatment plant was constructed in 1923. The 2017 condition assessment confirmed that it is technologically obsolete and poorly functioning. It is understood that planning and pre-construction activities for a new STP to service Gundagai town are well progressed.

The condition assessment also identified items in need of attention:

- As part of the upgrade of the Gundagai sewer treatment plant, Council should plan to renew the Royal sewer pumping station to improve the level of flood protection provided to this facility. This is a critical rising main, as a main break here would result in discharge of untreated effluent directly to the Murrumbidgee River.
- In Cootamundra, Council should plan to renew the Betts Street sewer pumping station rising main. It is understood that this rising main has experienced three serious breakages in the past four years. It appears that the pipeline is failing internally and externally and is in need of replacement.

The valuation identified a number of older VC sewer mains in Cootamundra and Gundagai as being in poor condition. It is understood that since the condition assessment took place in 2017, Council has renewed and relined a number of these assets.

Assets were rated on a 1 (Near New) to 10 (Completely Failed) scale consistent with the best practice asset management outlined in the IPWEA International Infrastructure Management 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 6 & 9 which ranges from fair/poor to very poor depending on their classification. For this purpose of this Asset Management Plan, an intervention level of **7** has been adopted for all assets.

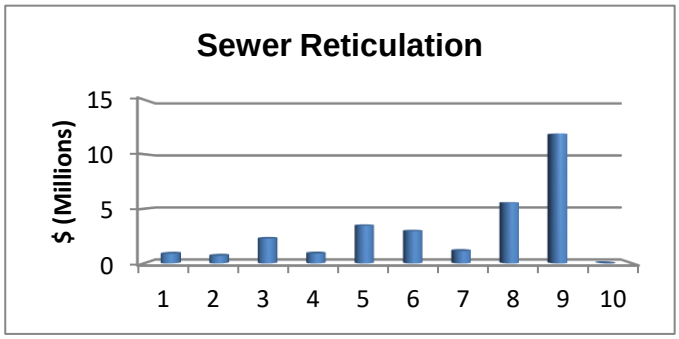
Table 5.1: What are the useful lives of our assets?

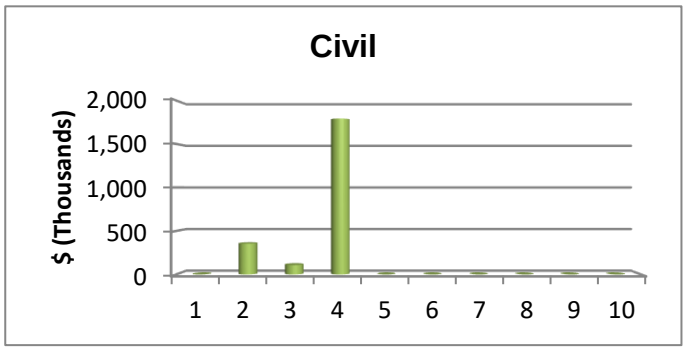
Classification	Description	Sub-class	Useful Life
Civil	Building	Buildings at SPS	50
	Siteworks	SPS perimeter fences	30
	Wet / Dry Pump Well	SPS well structure	70
	Wet Pump Well	SPS well structure	60
Electrical	Switchboard	SPS and treated effluent PS switchboards	30
	Telemetry	SPS telemetry	15
	Wet/ Dry Pump Well	SPS electrical works	30
Mechanical	Dosing System	Wet well dosing system	15
	Gantry	Single rail overhead gantry	40

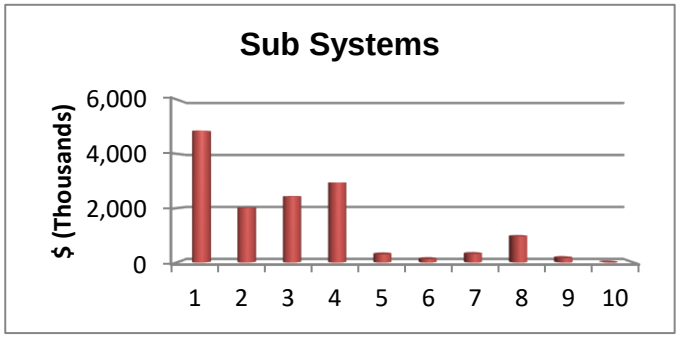
Classification	Description	Sub-class	Useful Life
	Pipework	SPS pipework	42.5
	Pumps	SPS and STP pumps	15
	Valves	Sewer pumping station valves	30
	Wet/ Dry Pump Well	SPS mechanical components	20
	Wet Pump Well	SPS mechanical components	20
Reticulation	AC		60
	CI		70
	DICL		70
	HDPE		70
	PE		70
	PVC		80
	UPVC		80
	VC		90
Sub-Systems	Cootamundra STP	Aerator	25
		Building	15
		Civil	80
		Electrical	30
		Filter	50
		Inlet works	25
		Lagoon	110
		Mechanical	60
		Mixers	20
		Process Systems	20
		Pump	20
		Sedimentation	50
		Structure	60
		Switchboard	30
		Tank	20
		WAS	20
Sub-Systems	Gundagai STP	Drying Bed	80
		Lagoon	110
		Screening Pit	80
		Screens	15
		Sedimentation	47.5
		Siteworks	45
		Sludge Tank	80
		Trickling Filter	60
		Walkway / Platform	40

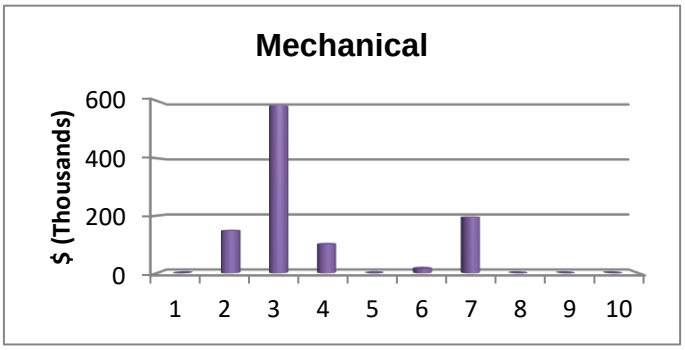
Each asset's condition is maintained in the Asset Register and the graphs below gives the condition profile based on the value of the top 4 valued assets in each condition.

Figure 5.1: What Conditions are our assets ($000)?









6. Operations

Operational activities are those regular activities that are required to continuously provide the service including asset inspection programs, monitoring the sewer treatment plant and routine cleaning. Operational costs include: administration, electricity costs, insurances, wastewater treatment chemicals and overheads.

Council conducts annual CCTV inspections and reporting on the 92km sewerage network.

Regular inspection and maintenance of sewerage manholes is carried out by Council operational staff, who also perform reactive inspections or maintenance, as required. Council has a customer request system to identify problems, inspect and rectify as required.

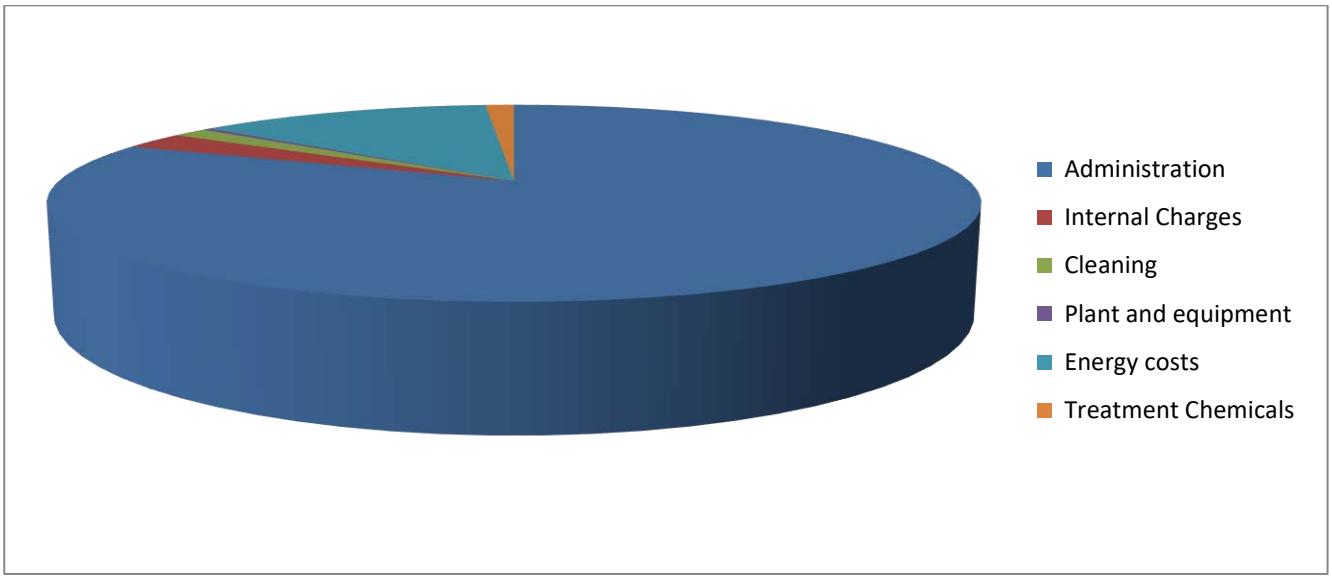
Table 6.1: When do we undertake Inspections?

Inspection	Frequency
Above Ground External Assets	Every 6 months
Distribution Network	Annually
Manhole	Annually
Safety Inspections	Quarterly

Table 6.2: What are our Operational Costs?

Activity	10 year average (2018 $,000)
Administration	$1,167
Internal charges	$39
Cleaning	$21
Plant and equipment	$5
Energy costs	$181
Treatment chemicals	$18
Total	**$1,431**

Figure 6.1: 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 be either planned (where works are programmed based on condition or according to a cycle), or reactive (in response to a failure, perhaps due to storm damage or vandalism).

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

Activity	Frequency
CCTV Inspections	Annually
Manhole Inspection	Annually
Sewer Vent Inspection	Every 4 years
Safety Inspections	Every 6 months
Pressure Sewer System Inspection	Annually

Adjusting Levels of Service

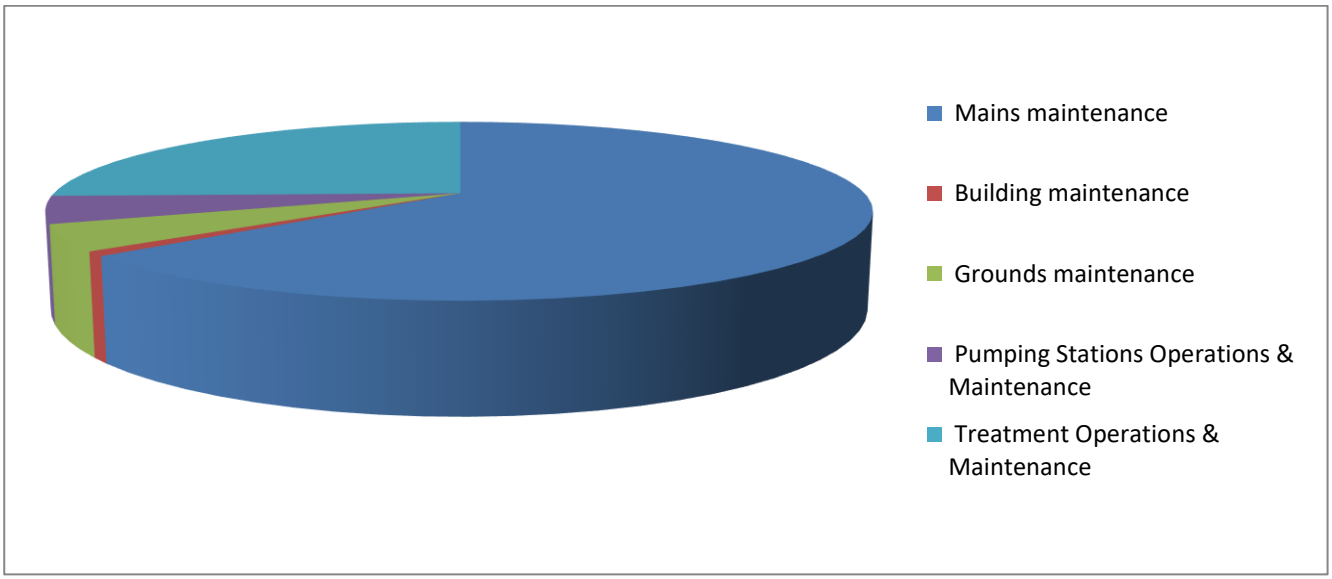
Some Levels of Service are non-negotiable, due to the health risks and legislative requirements. Other Levels of Service, such as response times to failures and customer complaints, may have scope for adjustment. Currently Council's LOS are based on the following principles:

- 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 trade waste dischargers in the Shire are licensed with a charging structure that reflects costs of treatment and encourages onsite treatment of trade waste

Table 7.2: What are our Maintenance Costs?

Activity	10 year average (2018 $,000)
Mains maintenance	$568
Building maintenance	$8
Grounds maintenance	$42
Pumping stations operations and maintenance	$44
Treatment operations and maintenance	$226
Total	**$888**

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.

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.

Details of planned renewal activities proposed in the current Delivery Program are contained in Appendix A for each asset category

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 level 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.

Discussion

Whilst Council has a wide portfolio of sewer assets including two sewer treatment works, overwhelmingly the type of assets requiring renewal are sewer reticulation mains, both in Gundagai and Cootamundra. Whilst it is true that the Gundagai sewer treatment works has reached end of life, plans are well progressed to replace this facility with a new plant. Also, the Betts Street pumping station rising main in Cootamundra requires renewal and the Royal pumping station in Gundagai requires better flood protection.

Council's renewal funds are appropriately targeted on relining, renewing and replacing aging VC mains dating back to the early 1930s. Council plans to spend $743,000 on average every year on sewer reticulation renewal. Whilst this does not eliminate the backlog, it does reduce it significantly and will remove the most troublesome mains, offering an improved level of service to many customers. It is very important that this sewer relining program continue to be supported.

Over the past year, Council has made significant progress, relining the most troublesome sewer mains in Cootamundra and Gundagai. Data on the mains that have been renewed over the past year, is yet to be added to the system, hence the backlog for both year 1 and year 10, shown in Table 8.1 below, is likely to be overly pessimistic.

Table 8.1: What are our Renewal Costs, Gap and Backlog (2018 $,000)?

Activity	Budget	Required	Gap	Backlog Year 1	Backlog Year 10
Sewer Reticulation	$743	$1,215	$472	$8,611	$4,718
Mechanical	$42	$43	$1	$195	$13
Electrical	0	$12	$12	0	$125
Civil	$3	0	0	0	0
Sub Systems	0	$56	$56	$48	$558
Total	**$788**	**$1,326**	**$541**	**$8,854**	**$5,414**

Figures are based on the 10 year annual average amounts.

Figure 8.1 indicates that, based on current projections, Council will spend approximately $788,000 per annum on renewals. The orange bars (rolling backlog) indicate that in any year the value of work exceeding the intervention levels set in the Asset Plans will reduce from $8.9 million to $5.4 million over the coming decade.

Figure 8.1: What will we spend over the next 10 years on Renewal (2018 $000)?

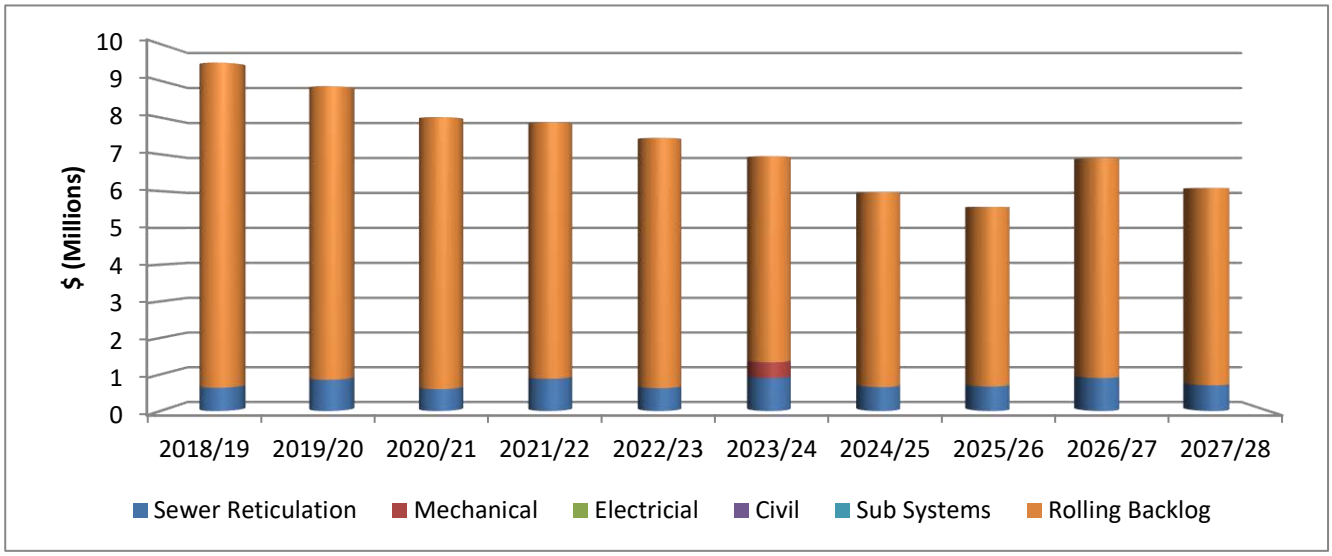
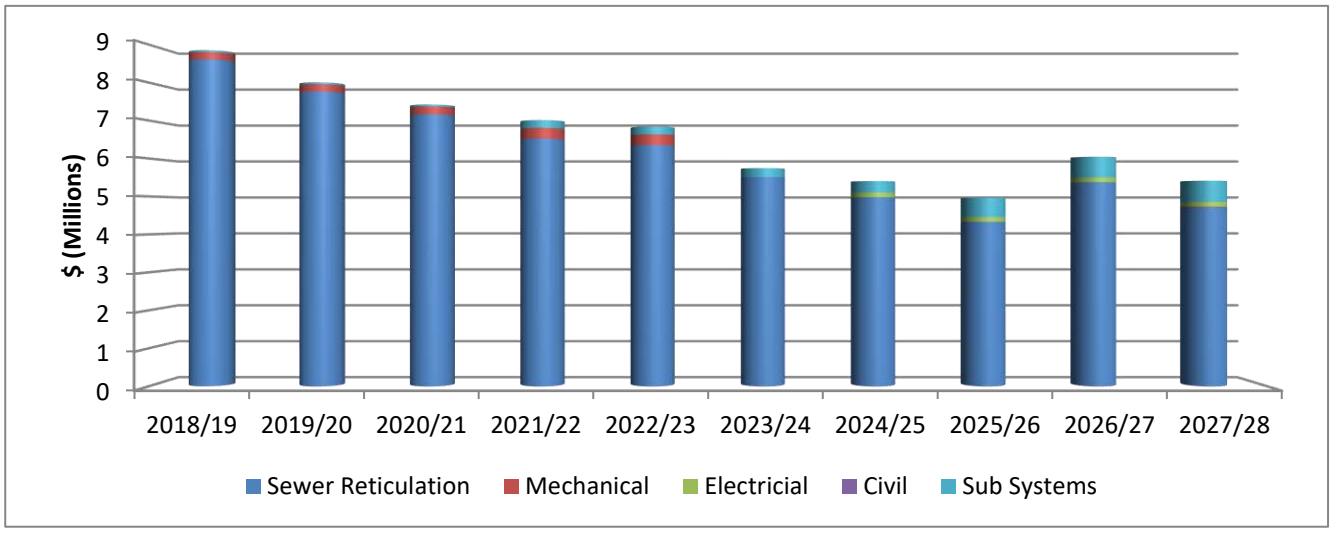


Figure 8.2 indicates that in any year the value of work exceeding the intervention levels set in this Asset Plan will reach $5.4 million at the end of 10 years. However, from Table 8.1, when considering the renewals required over the next 10 years, an additional $539,000 per year would be required to ensure **no** backlog of works in 2027/28.

Figure 8.2: What are the projected rolling backlog splits ($,000)?



From Figure 8.2 above, it can be observed that the backlog consists primarily of sewer reticulation (mains).

Lifecycle costs

The lifecycle costs are determined based on the total cost of ownership of each asset including operations, maintenance, renewal and disposal costs. Council does not have the data available at this time for the accurate calculation of lifecycle costs for water and sewer assets. Calculation of lifecycle costs is noted in this Asset Management Plan as an improvement action and will be included in future versions of this document.

9. Capital Upgrades & New Assets

Upgrades enhance an existing asset to provide a higher level of service, for example upgrading a sewer treatment plant to meet contemporary environmental regulations. New assets are those created to meet an additional service level requirement or increase the size of a network, for example, an extension of the sewerage network to sewer a new subdivision.

Council's "Contributions Plan for Other Developments" enables Cootamundra-Gundagai Regional Council to levy "headworks" contributions where the projected population and development growth anticipated will or is likely to increase the demand for sewerage services. This normally requires system components, such as pumping stations and pipelines to be upgraded. On occasion it is necessary to construct additional system components to service the growth.

Under this Policy a developer contribution is 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, or unit contribution. Both capital types may be funded at least in part through Developer Contributions in the form of a Section 64 or 94 Contribution, a Voluntary Planning Agreement, or as part of a subdivision development.

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. Major projects listed in Council's *Draft Operational Plan 2018-19 1. 2.0* are:

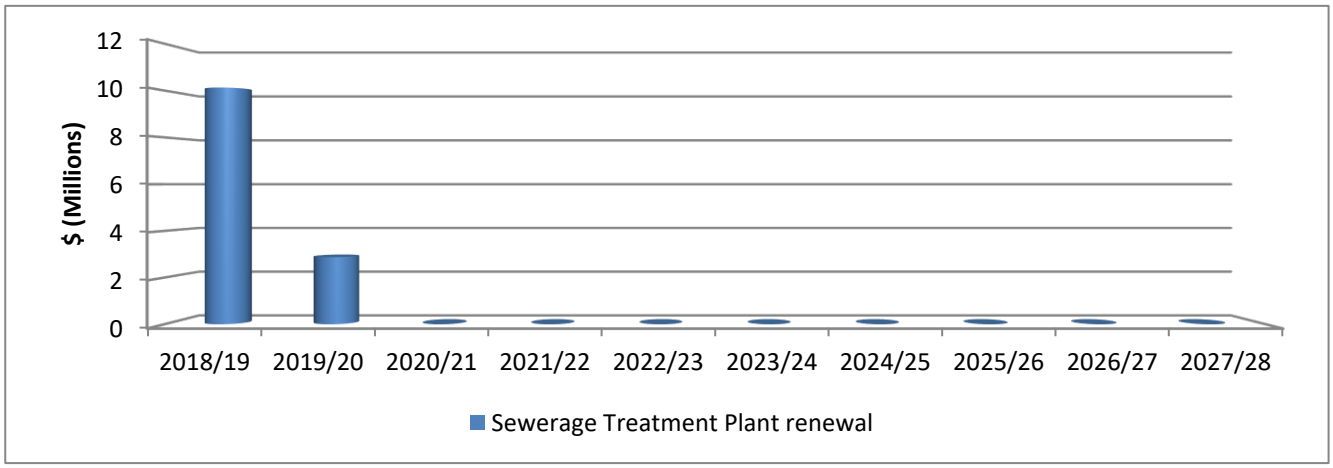
- New Gundagai Sewerage Treatment Plant

It is understood that there are plans to extend the industrial area in Cootamundra with a new subdivision. The new lots will require a sewerage service. Council has budget expenditure planned for these works but the project is yet to be designed and costed.

Council's new Integrated Water Cycle Management Plan, currently under development, may include recommendations on new and upgraded assets.

Figure 9.1 below shows that Council's focus in the short term will be the renewal and upgrade of the Gundagai sewer treatment plant.

Figure 9.1: What will we spend over the next 10 years on Upgraded or New Assets ($M)?



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 9 (poor condition), where Council has received no contact through the Customer Request System indicating that the community doesn't require the asset (as they have raised concerns or complaints about the asset condition) may be considered to be a redundant asset or not utilised and therefore decommissioned and disposed unless it is considered critical infrastructure.

Through careful analysis of all the existing assets Council may become aware of assets no longer required, and funds 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.

Council does not generally dispose of sewer assets. The majority of Council's sewer assets are buried pipelines. When sewer mains are renewed, a new lining is inserted inside the existing main, resulting in no redundant asset.

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.

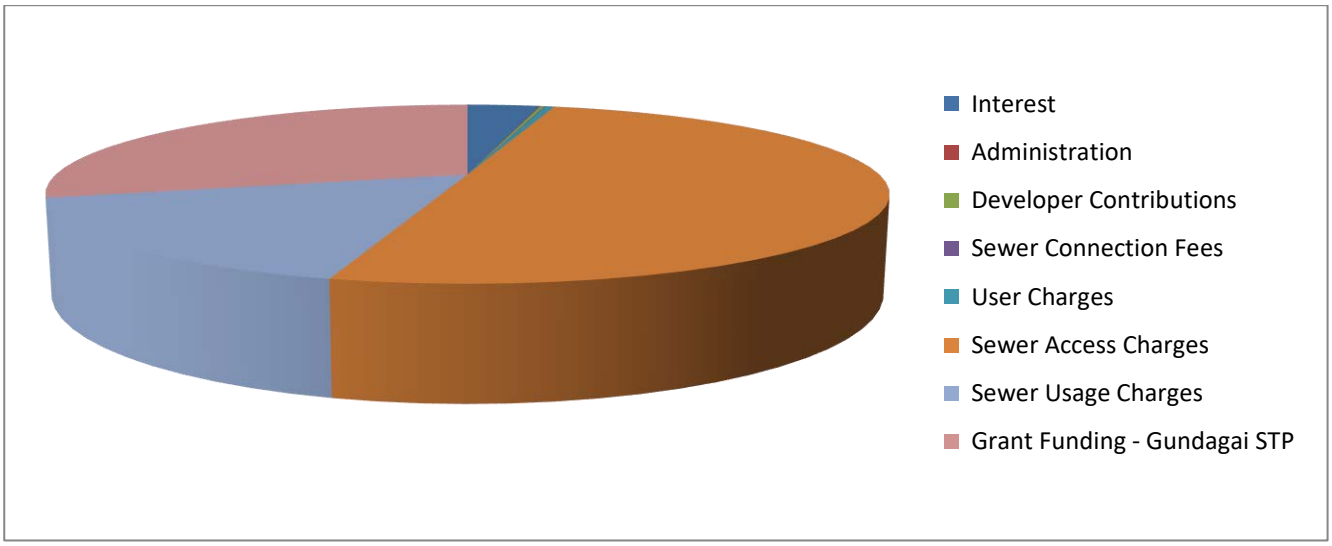
A summary of the funding requirements and expenditure over the next 10 years is included in Appendix C, with the projected budget amounts being based on 2018 dollars.

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?

Item	10 year average budget ($,000)
Interest	$153
Administration	$1
Developer Contributions	$9
Sewer Connection Fees	$2
User Charges	$19
Sewer Access Charges	$2,237
Sewer Usage Charges	$741
Grant Funding - Gundagai STP	$1,300
Total	**$4,462**

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



Discussion – Trade Waste

The ***NSW Department of Industry, Water Utilities*** defines liquid trade waste as any discharge to a sewerage system other than domestic waste from a hand wash basin, shower, bath or toilet. Sound regulation and pricing of liquid trade waste is a key component of the "NSW Best Practice Management of Water Supply and Sewerage Framework". All local water utilities, including Cootamundra-Gundagai Regional Council, are expected to strive for best practice and comply with the requirements of the "Liquid Trade Waste Regulation Guidelines".

The guidelines stipulate full cost recovery, with appropriate trade waste fees and charges in order to provide the necessary price signals to dischargers. Charges must include non-compliance trade waste usage charges and non-

compliance excess mass charges, in order to provide the necessary incentives for dischargers to consistently comply with their conditions of approval.

Enforcement of regulations and charges for trade waste vary between Cootamundra and Gundagai.

As the NSW Government permits full cost recovery for trade waste services, there is an opportunity for Council to recover all of the costs associated with this service and bring appropriate income to the sewer fund.

It is understood that an Integrated Water Cycle Management Plan (IWCM) is presently being developed for Council by Public Works Advisory. The IWCM is likely to include recommendations on Council's fees and charges for sewerage services, including trade waste.

In the interim, Council has resolved to adopt the Gundagai Trade Waste Policy, which has successfully generated trade waste income for the old Gundagai Shire Council over a number of years.

12. Key Performance Measures

Key Performance Measures (KPM's) based have been developed by considering both environmental, health and safety, and infrastructure capabilities. Council is required to report on these key performance measures annually to the NSW Government.

Table 12.1 Performance Measures

Key Performance Measure	Level of Service	Target	Current
Incidence and duration of interruptions	Sewerage service meets needs of community with minimal planned and no unplanned interruptions	<10	93 sewer breaks and chokes in 2015/16 reporting period (source: *2015-16 NSW Water Supply and Sewerage Performance Monitoring Report)*
Sewer Overflows	Number of sewer overflows requiring reporting to the environmental regulator	Nil	No reported overflows in 2015/16 reporting period
Compliance with environmental regulator	Compliance with licence requirements including discharge volume.	Fully compliant	Fully compliant in 2016/17 reporting period

13. 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
1. Add data on recently relined/ renewed sewer mains to the asset register	2018
2. Align the Asset Register (Authority) and the GIS data such that there is a common data set for all future asset management activities	2018
3. Prepare an updated version of this Asset Management Plan to reflect the updated asset register	2019
4. Add Criticality rating to all sewer assets to assist in the prioritisation of work and setting of intervention levels.	2020
5. Implement procedures to ensure that information on asset systems failures is recorded for asset management purposes	2018
6. Review of capital works planning beyond 2018/19, in accordance with recommendations of the Integrated Water Catchment Management Plan (ICWM)	2019
7. Develop Financial Strategies to reduce the backlog. This may include the preparation of a new Financial Plan for sewer fund, informed by the outcomes of the Integrated Water Catchment Management Plan (ICWM)	2019
8. Review of fees and charges in accordance with recommendations of the Integrated Water Catchment Management Plan (ICWM)	2019
9. Monitor levels of service (KPM) and document outcomes. Use to plan service improvements.	2020
10. Implement uniform and consistent Liquid Trade Waste policies and practices across the Shire	2020

14. 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.

From this Plan the following key Risks have been identified:

Table 14.1 Critical Risks and Treatment Plans

Major Asset Failure	Risk Treatment Plan
Failure of treatment plant or major equipment, collapse of trunk main, pumping station problem (choke, explosion, fire)	Shut down affected areas and assess damage Make areas safe Check welfare of staff and public, provide first aid Communicate with customers, regulator and authorities Liaise with emergency services Provide temporary services or reconfigure service delivery if possible Provide emergency equipment (pumps, generators, manual systems) Apply restrictions if necessary Use public education to manage restrictions Conduct repairs and begin planning for permanent repairs or replacement
Chemical or toxic spill (such as sludge)	
Natural disaster: earthquake, bushfire, storm wind or drought	

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, higher maintenance intervention levels, etc.

Table 14.2 Critical Assets

Critical Assets	Critical Failure Mode	Treatment Plan
Sewage treatment works	Civil, electrical or mechanical failure	Scheduled maintenance and regular inspection regime to ensure that it is functioning as required
Sewer pump stations and rising mains	Power failure, pump failure or blockage	Scheduled maintenance of pumps and equipment. Regular inspections.

15. Appendix A: Maintenance Program

Maintenance Programs will be included in future versions of this Asset Management Plan

16. Appendix B: Renewals

16.1 Sewer Reticulation Renewal Priorities

NOTE: Renewal programs are determined by the annual CCTV inspection program, as reported by Interflow as a requirement of the Sewer Rehabilitation and Investigation Contract.

ams_num	town	Item_name	yr_built	diam	length	Renewal
15482	Cootamundra Sewer	Across Berthong St. (36m, 150mm, 1950)	1950	150	36.0	$6,576
15484	Cootamundra Sewer	Across Bourke St. (30.5m, 150mm, 1932)	1932	150	30.5	$5,571
15485	Cootamundra Sewer	Across Bourke St. (58.2m, 300mm, 1932)	1932	300	58.2	$12,677
15486	Cootamundra Sewer	Across Bourke St. (68.5m, 150mm, 1932)	1932	150	68.5	$12,512
15487	Cootamundra Sewer	Across Bourke St. (79.4m, 150mm, 1932)	1932	150	79.4	$14,503
17440	Gundagai Sewer	Royal Well-99-111 (42.6m, 150mm, 1937)	1937	150	42.6	$7,781
17441	Gundagai Sewer	Royal Well-De-De (55.7m, 150mm, 1937)	1937	150	55.7	$10,174
17442	Gundagai Sewer	Royal Well-Sps-1 (7.6m, 300mm, 1937)	1937	300	7.6	$1,655
17443	Gundagai Sewer	Royal Well-Sps-Stp (846m, 150mm, 1937)	1937	150	846.0	$154,530
17444	Gundagai Sewer	Royal Well-Sps-Vent (6.7m, 300mm, 1937)	1937	300	6.7	$1,459
17434	Gundagai Sewer	Royal Well-95-De (21.7m, 150mm, 1937)	1937	150	21.7	$3,964
17435	Gundagai Sewer	Royal Well-96-97 (82m, 150mm, 1937)	1937	150	82.0	$14,978
17436	Gundagai Sewer	Royal Well-97-122 (51.8m, 150mm, 1937)	1937	150	51.8	$9,462
17437	Gundagai Sewer	Royal Well-97-98 (45.7m, 150mm, 1937)	1937	150	45.7	$8,348
17438	Gundagai Sewer	Royal Well-98-99 (45m, 150mm, 1937)	1937	150	45.0	$8,220
17439	Gundagai Sewer	Royal Well-99-100 (36.8m, 150mm, 1937)	1937	150	36.8	$6,722
17428	Gundagai Sewer	Royal Well-90-91 (80.3m, 150mm, 1937)	1937	150	80.3	$14,668
17429	Gundagai Sewer	Royal Well-9-10 (60m, 300mm, 1937)	1937	300	60.0	$13,069
17430	Gundagai Sewer	Royal Well-91-De (27m, 150mm, 1937)	1937	150	27.0	$4,932
17431	Gundagai Sewer	Royal Well-92-93 (61.7m, 150mm, 1937)	1937	150	61.7	$11,270
17432	Gundagai Sewer	Royal Well-93-94 (83.5m, 150mm, 1937)	1937	150	83.5	$15,252
17433	Gundagai Sewer	Royal Well-94-95 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17422	Gundagai Sewer	Royal Well-84-85 (79.2m, 150mm, 1937)	1937	150	79.2	$14,467
17423	Gundagai Sewer	Royal Well-85-De (3m, 150mm, 1937)	1937	150	3.0	$548
17424	Gundagai Sewer	Royal Well-86-87 (83.7m, 150mm, 1937)	1937	150	83.7	$15,289
17425	Gundagai Sewer	Royal Well-87-88 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17426	Gundagai Sewer	Royal Well-88-89 (41.2m, 150mm, 1937)	1937	150	41.2	$7,526
17427	Gundagai Sewer	Royal Well-8-9 (60m, 300mm, 1937)	1937	300	60.0	$13,069
17416	Gundagai Sewer	Royal Well-81-82 (60.7m, 150mm, 1937)	1937	150	60.7	$11,087
17417	Gundagai Sewer	Royal Well-81-83 (81.4m, 150mm, 1937)	1937	150	81.4	$14,869
17410	Gundagai Sewer	Royal Well-76-79 (76.2m, 150mm, 1937)	1937	150	76.2	$13,919
17411	Gundagai Sewer	Royal Well-77-78 (83.1m, 150mm, 1937)	1937	150	83.1	$15,179
17412	Gundagai Sewer	Royal Well-7-8 (61m, 300mm, 1937)	1937	300	61.0	$13,286
17413	Gundagai Sewer	Royal Well-78-De (29.2m, 150mm, 1937)	1937	150	29.2	$5,334
17414	Gundagai Sewer	Royal Well-79-De (63.1m, 150mm, 1937)	1937	150	63.1	$11,526
17415	Gundagai Sewer	Royal Well-80-81 (49.1m, 150mm, 1937)	1937	150	49.1	$8,969
17404	Gundagai Sewer	Royal Well-72-84 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17405	Gundagai Sewer	Royal Well-73-74 (78.2m, 150mm, 1937)	1937	150	78.2	$14,284
17406	Gundagai Sewer	Royal Well-73-80 (51.8m, 150mm, 1937)	1937	150	51.8	$9,462
17407	Gundagai Sewer	Royal Well-74-75 (61m, 150mm, 1937)	1937	150	61.0	$11,142
17408	Gundagai Sewer	Royal Well-75-76 (67m, 150mm, 1937)	1937	150	67.0	$12,238

ams_num	town	Item_name	yr_built	diam	length	Renewal
17409	Gundagai Sewer	Royal Well-76-77 (26.5m, 150mm, 1937)	1937	150	26.5	$4,840
17398	Gundagai Sewer	Royal Well-69-70 (44m, 150mm, 1937)	1937	150	44.0	$8,037
17399	Gundagai Sewer	Royal Well-70-71 (80.3m, 150mm, 1937)	1937	150	80.3	$14,668
17400	Gundagai Sewer	Royal Well-70-86 (84m, 150mm, 1937)	1937	150	84.0	$15,343
17401	Gundagai Sewer	Royal Well-7-128 (38.1m, 150mm, 1937)	1937	150	38.1	$6,959
17402	Gundagai Sewer	Royal Well-71-72 (81.4m, 150mm, 1937)	1937	150	81.4	$14,869
17403	Gundagai Sewer	Royal Well-72-73 (70.2m, 150mm, 1937)	1937	150	70.2	$12,823
17392	Gundagai Sewer	Royal Well-65-66 (58.2m, 150mm, 1937)	1937	150	58.2	$10,631
17394	Gundagai Sewer	Royal Well-66-De (26m, 150mm, 1937)	1937	150	26.0	$4,749
17395	Gundagai Sewer	Royal Well-6-7 (65.7m, 300mm, 1937)	1937	300	65.7	$14,310
17396	Gundagai Sewer	Royal Well-67-68 (61.6m, 150mm, 1937)	1937	150	61.6	$11,252
17397	Gundagai Sewer	Royal Well-68-De (9.4m, 150mm, 1937)	1937	150	9.4	$1,717
17386	Gundagai Sewer	Royal Well-59-60 (69.7m, 150mm, 1937)	1937	150	69.7	$12,731
17387	Gundagai Sewer	Royal Well-60-61 (51.8m, 150mm, 1937)	1937	150	51.8	$9,462
17388	Gundagai Sewer	Royal Well-61-62 (36.6m, 150mm, 1937)	1937	150	36.6	$6,685
17389	Gundagai Sewer	Royal Well-62-De (14.9m, 150mm, 1937)	1937	150	14.9	$2,722
17390	Gundagai Sewer	Royal Well-63-64 (39.5m, 150mm, 1937)	1937	150	39.5	$7,215
17391	Gundagai Sewer	Royal Well-64-65 (41.6m, 150mm, 1937)	1937	150	41.6	$7,599
17385	Gundagai Sewer	Royal Well-58E-59 (34.3m, 150mm, 1937)	1937	150	34.3	$6,265
17374	Gundagai Sewer	Royal Well-55-56 (74.3m, 150mm, 1937)	1937	150	74.3	$13,572
17375	Gundagai Sewer	Royal Well-5-6 (78.3m, 300mm, 1937)	1937	300	78.3	$17,055
17376	Gundagai Sewer	Royal Well-56-57 (88.6m, 150mm, 1937)	1937	150	88.6	$16,184
17377	Gundagai Sewer	Royal Well-57-58 (32.5m, 150mm, 1937)	1937	150	32.5	$5,936
17379	Gundagai Sewer	Royal Well-58-63 (38.5m, 150mm, 1937)	1937	150	38.5	$7,032
17368	Gundagai Sewer	Royal Well-51-52 (71.6m, 150mm, 1937)	1937	150	71.6	$13,078
17369	Gundagai Sewer	Royal Well-52-53 (71.6m, 150mm, 1937)	1937	150	71.6	$13,078
17370	Gundagai Sewer	Royal Well-53-54 (73.6m, 150mm, 1937)	1937	150	73.6	$13,444
17372	Gundagai Sewer	Royal Well-54-55 (73.7m, 150mm, 1937)	1937	150	73.7	$13,462
17373	Gundagai Sewer	Royal Well-54-67 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17362	Gundagai Sewer	Royal Well-48E-De (74.7m, 150mm, 1937)	1937	150	74.7	$13,645
17363	Gundagai Sewer	Royal Well-48F-De (13.8m, 150mm, 1937)	1937	150	13.8	$2,521
17364	Gundagai Sewer	Royal Well-49C-48D (63m, 150mm, 1937)	1937	150	63.0	$11,508
17365	Gundagai Sewer	Royal Well-49-De (4.3m, 150mm, 1937)	1937	150	4.3	$785
17366	Gundagai Sewer	Royal Well-50-De (17.4m, 150mm, 1937)	1937	150	17.4	$3,178
17367	Gundagai Sewer	Royal Well-5-132 (66.1m, 150mm, 1937)	1937	150	66.1	$12,074
17356	Gundagai Sewer	Royal Well-48A-48B (48.6m, 150mm, 1937)	1937	150	48.6	$8,877
17358	Gundagai Sewer	Royal Well-48B-48C (49.2m, 150mm, 1937)	1937	150	49.2	$8,987
17360	Gundagai Sewer	Royal Well-48D-48E (27.6m, 150mm, 1937)	1937	150	27.6	$5,041
17361	Gundagai Sewer	Royal Well-48E-48F (92m, 150mm, 1937)	1937	150	92.0	$16,805
17352	Gundagai Sewer	Royal Well-45D-De (35.2m, 150mm, 1937)	1937	150	35.2	$6,430
17354	Gundagai Sewer	Royal Well-47-De (8.5m, 150mm, 1937)	1937	150	8.5	$1,553
17355	Gundagai Sewer	Royal Well-48-48A (80.4m, 150mm, 1937)	1937	150	80.4	$14,686
17344	Gundagai Sewer	Royal Well-45-46 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17345	Gundagai Sewer	Royal Well-45A-45B (12.4m, 150mm, 1937)	1937	150	12.4	$2,265
17346	Gundagai Sewer	Royal Well-45B-45C (42.9m, 150mm, 1937)	1937	150	42.9	$7,836
17348	Gundagai Sewer	Royal Well-45C-45D (55.7m, 150mm, 1937)	1937	150	55.7	$10,174
17338	Gundagai Sewer	Royal Well-42-48 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17339	Gundagai Sewer	Royal Well-43-44 (81.4m, 150mm, 1937)	1937	150	81.4	$14,869
17340	Gundagai Sewer	Royal Well-44-45 (70.3m, 150mm, 1937)	1937	150	70.3	$12,841
17341	Gundagai Sewer	Royal Well-44-47 (76.2m, 150mm, 1937)	1937	150	76.2	$13,919
17342	Gundagai Sewer	Royal Well-4-5 (61m, 300mm, 1937)	1937	300	61.0	$13,286
17343	Gundagai Sewer	Royal Well-45-45A (10.5m, 150mm, 1937)	1937	150	10.5	$1,918
17332	Gundagai Sewer	Royal Well-38-38A (19.2m, 150mm, 1937)	1937	150	19.2	$3,507
17333	Gundagai Sewer	Royal Well-38A-39 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17334	Gundagai Sewer	Royal Well-39-De (58.2m, 150mm, 1937)	1937	150	58.2	$10,631
17335	Gundagai Sewer	Royal Well-41-42 (67.1m, 150mm, 1937)	1937	150	67.1	$12,256
17336	Gundagai Sewer	Royal Well-41-49 (50m, 150mm, 1937)	1937	150	50.0	$9,133
17337	Gundagai Sewer	Royal Well-42-43 (73m, 150mm, 1937)	1937	150	73.0	$13,334
17330	Gundagai Sewer	Royal Well-36-37 (39.4m, 150mm, 1937)	1937	150	39.4	$7,197
17331	Gundagai Sewer	Royal Well-37-38 (83.2m, 150mm, 1937)	1937	150	83.2	$15,197
17320	Gundagai Sewer	Royal Well-35B-35C (4m, 150mm, 1937)	1937	150	4.0	$731
17321	Gundagai Sewer	Royal Well-35C-De (136.3m, 150mm, 1937)	1937	150	136.3	$24,897

ams_num	town	Item_name	yr_built	diam	length	Renewal
17323	Gundagai Sewer	Royal Well-35C-De (64.9m, 150mm, 1937)	1937	150	64.9	$11,855
17314	Gundagai Sewer	Royal Well-33-34 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17315	Gundagai Sewer	Royal Well-3-4 (62m, 300mm, 1937)	1937	300	62.0	$13,504
17316	Gundagai Sewer	Royal Well-34-35 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17318	Gundagai Sewer	Royal Well-35-35B (69m, 150mm, 1937)	1937	150	69.0	$12,604
17308	Gundagai Sewer	Royal Well-28-29 (55m, 150mm, 1937)	1937	150	55.0	$10,046
17309	Gundagai Sewer	Royal Well-28-36 (86.4m, 150mm, 1937)	1937	150	86.4	$15,782
17310	Gundagai Sewer	Royal Well-29-30 (80.2m, 150mm, 1937)	1937	150	80.2	$14,649
17311	Gundagai Sewer	Royal Well-30-31 (80m, 150mm, 1937)	1937	150	80.0	$14,613
17312	Gundagai Sewer	Royal Well-31-32 (67.3m, 150mm, 1937)	1937	150	67.3	$12,293
17313	Gundagai Sewer	Royal Well-32-33 (54.8m, 150mm, 1937)	1937	150	54.8	$10,010
17302	Gundagai Sewer	Royal Well-25-26 (64.9m, 150mm, 1937)	1937	150	64.9	$11,855
17303	Gundagai Sewer	Royal Well-25-De (21m, 150mm, 1937)	1937	150	21.0	$3,836
17304	Gundagai Sewer	Royal Well-26-27 (80.4m, 150mm, 1937)	1937	150	80.4	$14,686
17305	Gundagai Sewer	Royal Well-26-41 (80.7m, 150mm, 1937)	1937	150	80.7	$14,741
17306	Gundagai Sewer	Royal Well-27-28 (73.2m, 150mm, 1937)	1937	150	73.2	$13,371
17307	Gundagai Sewer	Royal Well-27-40 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17296	Gundagai Sewer	Royal Well-2-3 (53.5m, 300mm, 1937)	1937	300	53.5	$11,653
17297	Gundagai Sewer	Royal Well-23-24 (80.4m, 150mm, 1937)	1937	150	80.4	$14,686
17298	Gundagai Sewer	Royal Well-23-50 (26.5m, 150mm, 1937)	1937	150	26.5	$4,840
17299	Gundagai Sewer	Royal Well-24-24A (59.7m, 150mm, 1937)	1937	150	59.7	$10,905
17300	Gundagai Sewer	Royal Well-24-25 (83.7m, 150mm, 1937)	1937	150	83.7	$15,289
17301	Gundagai Sewer	Royal Well-24A-De (86m, 150mm, 1937)	1937	150	86.0	$15,709
17290	Gundagai Sewer	Royal Well-20-21 (70m, 225mm, 1937)	1937	225	70.0	$13,502
17291	Gundagai Sewer	Royal Well-20-69 (45.7m, 150mm, 1937)	1937	150	45.7	$8,348
17292	Gundagai Sewer	Royal Well-20-90 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17293	Gundagai Sewer	Royal Well-21-22 (72.2m, 225mm, 1937)	1937	225	72.2	$13,927
17294	Gundagai Sewer	Royal Well-22-23 (85.3m, 150mm, 1937)	1937	150	85.3	$15,581
17295	Gundagai Sewer	Royal Well-22-51 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17284	Gundagai Sewer	Royal Well-183-184 (78.8m, 150mm, 1937)	1937	150	78.8	$14,394
17285	Gundagai Sewer	Royal Well-184-De (22.4m, 150mm, 1937)	1937	150	22.4	$4,092
17286	Gundagai Sewer	Royal Well-18-De (22.2m, 225mm, 1937)	1937	225	22.2	$4,282
17287	Gundagai Sewer	Royal Well-19-20 (58.9m, 225mm, 1937)	1937	225	58.9	$11,361
17278	Gundagai Sewer	Royal Well-179-De (30.2m, 150mm, 1937)	1937	150	30.2	$5,516
17279	Gundagai Sewer	Royal Well-180-De (28.2m, 150mm, 1937)	1937	150	28.2	$5,151
17280	Gundagai Sewer	Royal Well-18-19 (27.9m, 225mm, 1937)	1937	225	27.9	$5,382
17281	Gundagai Sewer	Royal Well-181-De (37m, 150mm, 1937)	1937	150	37.0	$6,758
17282	Gundagai Sewer	Royal Well-182-De (10.6m, 150mm, 1937)	1937	150	10.6	$1,936
17283	Gundagai Sewer	Royal Well-182-De (28m, 150mm, 1937)	1937	150	28.0	$5,114
17272	Gundagai Sewer	Royal Well-175-De (17m, 150mm, 1937)	1937	150	17.0	$3,105
17273	Gundagai Sewer	Royal Well-176-176A (50m, 150mm, 1937)	1937	150	50.0	$9,133
17274	Gundagai Sewer	Royal Well-176-177 (69.5m, 150mm, 1937)	1937	150	69.5	$12,695
17275	Gundagai Sewer	Royal Well-176A-De (97m, 150mm, 1937)	1937	150	97.0	$17,718
17276	Gundagai Sewer	Royal Well-177-De (36.4m, 150mm, 1937)	1937	150	36.4	$6,649
17277	Gundagai Sewer	Royal Well-178-179 (65.7m, 150mm, 1937)	1937	150	65.7	$12,001
17266	Gundagai Sewer	Royal Well-173-182 (25.7m, 150mm, 1937)	1937	150	25.7	$4,694
17267	Gundagai Sewer	Royal Well-174-175 (58.9m, 150mm, 1937)	1937	150	58.9	$10,759
17268	Gundagai Sewer	Royal Well-174-181 (80.7m, 150mm, 1937)	1937	150	80.7	$14,741
17269	Gundagai Sewer	Royal Well-175-176 (57m, 150mm, 1937)	1937	150	57.0	$10,412
17270	Gundagai Sewer	Royal Well-175-178 (81m, 150mm, 1937)	1937	150	81.0	$14,795
17271	Gundagai Sewer	Royal Well-175-180 (80.4m, 150mm, 1937)	1937	150	80.4	$14,686
17260	Gundagai Sewer	Royal Well-170-De (19m, 150mm, 1937)	1937	150	19.0	$3,471
17261	Gundagai Sewer	Royal Well-170-De (20.7m, 150mm, 1937)	1937	150	20.7	$3,781
17262	Gundagai Sewer	Royal Well-171-172 (59.4m, 150mm, 1937)	1937	150	59.4	$10,850
17263	Gundagai Sewer	Royal Well-17-18 (53.3m, 225mm, 1937)	1937	225	53.3	$10,281
17264	Gundagai Sewer	Royal Well-172-173 (61.8m, 150mm, 1937)	1937	150	61.8	$11,288
17265	Gundagai Sewer	Royal Well-173-174 (56.2m, 150mm, 1937)	1937	150	56.2	$10,265
17254	Gundagai Sewer	Royal Well-166-167 (59m, 150mm, 1937)	1937	150	59.0	$10,777
17255	Gundagai Sewer	Royal Well-167-168 (80.3m, 150mm, 1937)	1937	150	80.3	$14,668
17256	Gundagai Sewer	Royal Well-168-169 (48.3m, 150mm, 1937)	1937	150	48.3	$8,822
17257	Gundagai Sewer	Royal Well-169-170 (54m, 150mm, 1937)	1937	150	54.0	$9,864
17258	Gundagai Sewer	Royal Well-16A-De (43.5m, 225mm, 1937)	1937	225	43.5	$8,391

ams_num	town	Item_name	yr_built	diam	length	Renewal
17259	Gundagai Sewer	Royal Well-170-De (19.7m, 150mm, 1937)	1937	150	19.7	$3,598
17248	Gundagai Sewer	Royal Well-163-164 (60.9m, 150mm, 1937)	1937	150	60.9	$11,124
17249	Gundagai Sewer	Royal Well-163-171 (59.4m, 150mm, 1937)	1937	150	59.4	$10,850
17250	Gundagai Sewer	Royal Well-163-De (20.7m, 150mm, 1937)	1937	150	20.7	$3,781
17251	Gundagai Sewer	Royal Well-164-165 (58.2m, 150mm, 1937)	1937	150	58.2	$10,631
17252	Gundagai Sewer	Royal Well-164-De (15.9m, 150mm, 1937)	1937	150	15.9	$2,904
17253	Gundagai Sewer	Royal Well-165-166 (59.3m, 150mm, 1937)	1937	150	59.3	$10,832
17242	Gundagai Sewer	Royal Well-159-De (35.3m, 150mm, 1937)	1937	150	35.3	$6,448
17243	Gundagai Sewer	Royal Well-160-161 (54m, 150mm, 1937)	1937	150	54.0	$9,864
17244	Gundagai Sewer	Royal Well-16-16A (37.5m, 225mm, 1937)	1937	225	37.5	$7,233
17245	Gundagai Sewer	Royal Well-16-17 (53.3m, 225mm, 1937)	1937	225	53.3	$10,281
17246	Gundagai Sewer	Royal Well-162-163 (49.5m, 150mm, 1937)	1937	150	49.5	$9,042
17247	Gundagai Sewer	Royal Well-162-183 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17236	Gundagai Sewer	Royal Well-156A-De (56.5m, 150mm, 1937)	1937	150	56.5	$10,320
17237	Gundagai Sewer	Royal Well-156-De (17.3m, 150mm, 1937)	1937	150	17.3	$3,160
17238	Gundagai Sewer	Royal Well-157-158 (8.5m, 150mm, 1937)	1937	150	8.5	$1,553
17239	Gundagai Sewer	Royal Well-158-159 (43.7m, 150mm, 1937)	1937	150	43.7	$7,982
17240	Gundagai Sewer	Royal Well-15-92 (51.6m, 150mm, 1937)	1937	150	51.6	$9,425
17241	Gundagai Sewer	Royal Well-159-De (11m, 150mm, 1937)	1937	150	11.0	$2,009
17230	Gundagai Sewer	Royal Well-15-16 (62m, 225mm, 1937)	1937	225	62.0	$11,959
17231	Gundagai Sewer	Royal Well-152-153 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17232	Gundagai Sewer	Royal Well-153-154 (52.4m, 150mm, 1937)	1937	150	52.4	$9,571
17233	Gundagai Sewer	Royal Well-154-De (49.1m, 150mm, 1937)	1937	150	49.1	$8,969
17234	Gundagai Sewer	Royal Well-155-156 (58m, 150mm, 1937)	1937	150	58.0	$10,594
17235	Gundagai Sewer	Royal Well-156-156A (31m, 150mm, 1937)	1937	150	31.0	$5,662
17224	Gundagai Sewer	Royal Well-148-149 (46.2m, 150mm, 1937)	1937	150	46.2	$8,439
17225	Gundagai Sewer	Royal Well-149-150 (54.5m, 150mm, 1937)	1937	150	54.5	$9,955
17226	Gundagai Sewer	Royal Well-149-151 (80.2m, 150mm, 1937)	1937	150	80.2	$14,649
17227	Gundagai Sewer	Royal Well-14-96 (83.8m, 150mm, 1937)	1937	150	83.8	$15,307
17228	Gundagai Sewer	Royal Well-150-De (41.1m, 150mm, 1937)	1937	150	41.1	$7,507
17229	Gundagai Sewer	Royal Well-151-152 (28m, 150mm, 1937)	1937	150	28.0	$5,114
17218	Gundagai Sewer	Royal Well-146-155 (43m, 150mm, 1937)	1937	150	43.0	$7,854
17219	Gundagai Sewer	Royal Well-147-147A (24.3m, 150mm, 1937)	1937	150	24.3	$4,439
17212	Gundagai Sewer	Royal Well-142-143 (79.2m, 150mm, 1937)	1937	150	79.2	$14,467
17213	Gundagai Sewer	Royal Well-143-144 (10.7m, 150mm, 1937)	1937	150	10.7	$1,954
17214	Gundagai Sewer	Royal Well-144-145 (59.3m, 150mm, 1937)	1937	150	59.3	$10,832
17215	Gundagai Sewer	Royal Well-145-146 (71.8m, 150mm, 1937)	1937	150	71.8	$13,115
17216	Gundagai Sewer	Royal Well-145-157 (46.2m, 150mm, 1937)	1937	150	46.2	$8,439
17217	Gundagai Sewer	Royal Well-146-147 (44.9m, 150mm, 1937)	1937	150	44.9	$8,201
17206	Gundagai Sewer	Royal Well-139-140 (80.3m, 150mm, 1937)	1937	150	80.3	$14,668
17207	Gundagai Sewer	Royal Well-140-141 (46.5m, 150mm, 1937)	1937	150	46.5	$8,494
17208	Gundagai Sewer	Royal Well-140-De (19m, 150mm, 1937)	1937	150	19.0	$3,471
17209	Gundagai Sewer	Royal Well-141-142 (61m, 150mm, 1937)	1937	150	61.0	$11,142
17210	Gundagai Sewer	Royal Well-141-160 (47.8m, 150mm, 1937)	1937	150	47.8	$8,731
17211	Gundagai Sewer	Royal Well-14-15 (50.7m, 225mm, 1937)	1937	225	50.7	$9,780
17200	Gundagai Sewer	Royal Well-132-De (17.4m, 150mm, 1937)	1937	150	17.4	$3,178
17201	Gundagai Sewer	Royal Well-133-134 (46.8m, 150mm, 1937)	1937	150	46.8	$8,548
17202	Gundagai Sewer	Royal Well-136-137 (70.1m, 225mm, 1937)	1937	225	70.1	$13,522
17203	Gundagai Sewer	Royal Well-137-138 (70.9m, 225mm, 1937)	1937	225	70.9	$13,676
17204	Gundagai Sewer	Royal Well-138-139 (91.3m, 150mm, 1937)	1937	150	91.3	$16,677
17205	Gundagai Sewer	Royal Well-138-162 (57.2m, 150mm, 1937)	1937	150	57.2	$10,448
17194	Gundagai Sewer	Royal Well-129-130 (50.6m, 150mm, 1937)	1937	150	50.6	$9,243
17195	Gundagai Sewer	Royal Well-129-De (13.7m, 150mm, 1937)	1937	150	13.7	$2,502
17196	Gundagai Sewer	Royal Well-13-124 (61.3m, 150mm, 1937)	1937	150	61.3	$11,197
17197	Gundagai Sewer	Royal Well-13-14 (77.6m, 300mm, 1937)	1937	300	77.6	$16,902
17198	Gundagai Sewer	Royal Well-131-De (26m, 150mm, 1937)	1937	150	26.0	$4,749
17199	Gundagai Sewer	Royal Well-132-133 (79.2m, 150mm, 1937)	1937	150	79.2	$14,467
17188	Gundagai Sewer	Royal Well-125A-125B (26.6m, 150mm, 1937)	1937	150	26.6	$4,859
17189	Gundagai Sewer	Royal Well-125B-De (7.6m, 150mm, 1937)	1937	150	7.6	$1,388
17190	Gundagai Sewer	Royal Well-126-127 (78.7m, 150mm, 1937)	1937	150	78.7	$14,375
17191	Gundagai Sewer	Royal Well-127-De (3.2m, 150mm, 1937)	1937	150	3.2	$585

ams_num	town	Item_name	yr_built	diam	length	Renewal
17192	Gundagai Sewer	Royal Well-128-129 (28.7m, 150mm, 1937)	1937	150	28.7	$5,242
17193	Gundagai Sewer	Royal Well-128-131 (72.5m, 150mm, 1937)	1937	150	72.5	$13,243
17182	Gundagai Sewer	Royal Well-122-123 (67m, 150mm, 1937)	1937	150	67.0	$12,238
17183	Gundagai Sewer	Royal Well-122-De (18.5m, 150mm, 1937)	1937	150	18.5	$3,379
17184	Gundagai Sewer	Royal Well-123-De (13.6m, 150mm, 1937)	1937	150	13.6	$2,484
17185	Gundagai Sewer	Royal Well-123-De (15m, 150mm, 1937)	1937	150	15.0	$2,740
17186	Gundagai Sewer	Royal Well-124-De (98m, 150mm, 1937)	1937	150	98.0	$17,901
17187	Gundagai Sewer	Royal Well-125-125A (68.7m, 150mm, 1937)	1937	150	68.7	$12,549
17176	Gundagai Sewer	Royal Well-119-De (27.2m, 150mm, 1937)	1937	150	27.2	$4,968
17177	Gundagai Sewer	Royal Well-1-2 (53.3m, 300mm, 1937)	1937	300	53.3	$11,609
17178	Gundagai Sewer	Royal Well-120-121 (47.2m, 150mm, 1937)	1937	150	47.2	$8,622
17179	Gundagai Sewer	Royal Well-12-125 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17180	Gundagai Sewer	Royal Well-12-13 (50.3m, 300mm, 1937)	1937	300	50.3	$10,956
17181	Gundagai Sewer	Royal Well-121-De (57.8m, 150mm, 1937)	1937	150	57.8	$10,558
17170	Gundagai Sewer	Royal Well-114-118 (79.2m, 150mm, 1937)	1937	150	79.2	$14,467
17171	Gundagai Sewer	Royal Well-115-116 (15.2m, 150mm, 1937)	1937	150	15.2	$2,776
17172	Gundagai Sewer	Royal Well-115-De (27.3m, 150mm, 1937)	1937	150	27.3	$4,987
17173	Gundagai Sewer	Royal Well-116-117 (80.4m, 150mm, 1937)	1937	150	80.4	$14,686
17174	Gundagai Sewer	Royal Well-117-De (28.7m, 150mm, 1937)	1937	150	28.7	$5,242
17175	Gundagai Sewer	Royal Well-118-119 (80.5m, 150mm, 1937)	1937	150	80.5	$14,704
17164	Gundagai Sewer	Royal Well-111-120 (82.8m, 150mm, 1937)	1937	150	82.8	$15,124
17165	Gundagai Sewer	Royal Well-11-12 (85.4m, 300mm, 1937)	1937	300	85.4	$18,601
17166	Gundagai Sewer	Royal Well-112-113 (58.2m, 150mm, 1937)	1937	150	58.2	$10,631
17167	Gundagai Sewer	Royal Well-113-114 (58.2m, 150mm, 1937)	1937	150	58.2	$10,631
17168	Gundagai Sewer	Royal Well-1-136 (57.9m, 225mm, 1937)	1937	225	57.9	$11,168
17169	Gundagai Sewer	Royal Well-114-115 (52.6m, 150mm, 1937)	1937	150	52.6	$9,608
17158	Gundagai Sewer	Royal Well-108-De (16m, 150mm, 1937)	1937	150	16.0	$2,923
17159	Gundagai Sewer	Royal Well-108-De (24.3m, 150mm, 1937)	1937	150	24.3	$4,439
17160	Gundagai Sewer	Royal Well-109-De (30.5m, 150mm, 1937)	1937	150	30.5	$5,571
17161	Gundagai Sewer	Royal Well-110-De (21.9m, 150mm, 1937)	1937	150	21.9	$4,000
17162	Gundagai Sewer	Royal Well-110-De (9.5m, 150mm, 1937)	1937	150	9.5	$1,735
17163	Gundagai Sewer	Royal Well-111-112 (58.5m, 150mm, 1937)	1937	150	58.5	$10,686
17152	Gundagai Sewer	Royal Well-105-De (16.7m, 150mm, 1937)	1937	150	16.7	$3,050
17153	Gundagai Sewer	Royal Well-106-107 (89.1m, 150mm, 1937)	1937	150	89.1	$16,275
17154	Gundagai Sewer	Royal Well-107-107A (33.4m, 150mm, 1937)	1937	150	33.4	$6,101
17155	Gundagai Sewer	Royal Well-107A-107B (10.5m, 150mm, 1937)	1937	150	10.5	$1,918
17156	Gundagai Sewer	Royal Well-107B-108 (27.8m, 150mm, 1937)	1937	150	27.8	$5,078
17157	Gundagai Sewer	Royal Well-107B-De (74.3m, 150mm, 1937)	1937	150	74.3	$13,572
17146	Gundagai Sewer	Royal Well-102-103 (69.3m, 150mm, 1937)	1937	150	69.3	$12,658
17147	Gundagai Sewer	Royal Well-103-104 (62.8m, 150mm, 1937)	1937	150	62.8	$11,471
17148	Gundagai Sewer	Royal Well-103-110 (75.3m, 150mm, 1937)	1937	150	75.3	$13,754
17149	Gundagai Sewer	Royal Well-104-105 (54m, 150mm, 1937)	1937	150	54.0	$9,864
17150	Gundagai Sewer	Royal Well-104-109 (58.6m, 150mm, 1937)	1937	150	58.6	$10,704
17151	Gundagai Sewer	Royal Well-105-106 (85.2m, 150mm, 1937)	1937	150	85.2	$15,563
17142	Gundagai Sewer	Royal Well-100-101 (79.3m, 150mm, 1937)	1937	150	79.3	$14,485
17143	Gundagai Sewer	Royal Well-10-11 (84.9m, 300mm, 1937)	1937	300	84.9	$18,492
17144	Gundagai Sewer	Royal Well-101-102 (67m, 150mm, 1937)	1937	150	67.0	$12,238
17145	Gundagai Sewer	Royal Well-10-126 (55.6m, 150mm, 1937)	1937	150	55.6	$10,156
16549	Cootamundra Sewer	West Off Lane 48 (29.3m, 150mm, 1938)	1938	150	29.3	$5,352
16550	Cootamundra Sewer	West Off Lane 49 (41m, 150mm, 1938)	1938	150	41.0	$7,489
16551	Cootamundra Sewer	West Off Lane 50 (26.5m, 150mm, 1938)	1938	150	26.5	$4,840
16552	Cootamundra Sewer	West Off Lane 60 (80.8m, 150mm, 1938)	1938	150	80.8	$14,759
16553	Cootamundra Sewer	Yass Road South (49.5m, 150mm, 1932)	1932	150	49.5	$9,042
16543	Cootamundra Sewer	West Off Lane 33 (18.3m, 150mm, 1932)	1932	150	18.3	$3,343
16544	Cootamundra	West Off Lane 33 - 2 (18.3m, 150mm, 1932)	1932	150	18.3	$3,343

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
16545	Cootamundra Sewer	West Off Lane 39 (27.1m, 150mm, 1932)	1932	150	27.1	$4,950
16546	Cootamundra Sewer	West Off Lane 43 (29m, 150mm, 1938)	1938	150	29.0	$5,297
16547	Cootamundra Sewer	West Off Lane 43 (34.8m, 150mm, 1938)	1938	150	34.8	$6,357
16537	Cootamundra Sewer	West Off Lane 25 (32.1m, 150mm, 1932)	1932	150	32.1	$5,863
16538	Cootamundra Sewer	West Off Lane 25 (35.5m, 150mm, 1932)	1932	150	35.5	$6,484
16539	Cootamundra Sewer	West Off Lane 26 (30.5m, 150mm, 1932)	1932	150	30.5	$5,571
16540	Cootamundra Sewer	West Off Lane 29 (31.7m, 150mm, 1938)	1938	150	31.7	$5,790
16541	Cootamundra Sewer	West Off Lane 31 (32m, 150mm, 1932)	1932	150	32.0	$5,845
16542	Cootamundra Sewer	West Off Lane 32 (23.3m, 150mm, 1932)	1932	150	23.3	$4,256
16531	Cootamundra Sewer	West Off Betts St. (57.9m, 150mm, 1940)	1940	150	57.9	$10,576
16532	Cootamundra Sewer	West Off Lane 17 (25m, 150mm, 1932)	1932	150	25.0	$4,567
16533	Cootamundra Sewer	West Off Lane 22 (39.6m, 150mm, 1940)	1940	150	39.6	$7,233
16534	Cootamundra Sewer	West Off Lane 24 (22.9m, 150mm, 1932)	1932	150	22.9	$4,183
16535	Cootamundra Sewer	West Off Lane 24 (30m, 150mm, 1932)	1932	150	30.0	$5,480
16536	Cootamundra Sewer	West Off Lane 24 (36.4m, 150mm, 1932)	1932	150	36.4	$6,649
16525	Cootamundra Sewer	West Of Rail Line (74.8m, 450mm, 1932)	1932	450	74.8	$27,309
16527	Cootamundra Sewer	West Of Williams Ave. (36m, 150mm, 1945)	1945	150	36.0	$6,576
16515	Cootamundra Sewer	West End Of Lane 10 (6m, 150mm, 1932)	1932	150	6.0	$1,096
16516	Cootamundra Sewer	West End Of Lane 12 (61m, 150mm, 1945)	1945	150	61.0	$11,142
16517	Cootamundra Sewer	West End Of Lane 14 (20m, 150mm, 1932)	1932	150	20.0	$3,653
16505	Cootamundra Sewer	Victoria Pde / Hume St. (40m, 150mm, 1940)	1940	150	40.0	$7,306
16506	Cootamundra Sewer	Ward St. / Lawrence St. (39m, 150mm, 1950)	1950	150	39.0	$7,124
16507	Cootamundra Sewer	Ward St. / Lawrence St. (7.6m, 150mm, 1950)	1950	150	7.6	$1,388
16499	Cootamundra Sewer	Temora / Hay St. (56.6m, 150mm, 1945)	1945	150	56.6	$10,339
16500	Cootamundra Sewer	Temora / Hay St. (57.9m, 150mm, 1945)	1945	150	57.9	$10,576
16501	Cootamundra Sewer	Temora / Murray St. (73.2m, 150mm, 1945)	1945	150	73.2	$13,371
16502	Cootamundra Sewer	Temora St. / Harley Ave. (37.8m, 150mm, 1945)	1945	150	37.8	$6,905
16503	Cootamundra Sewer	Temora St. / Harley Ave. (53.4m, 150mm, 1945)	1945	150	53.4	$9,754
16504	Cootamundra Sewer	Temora St. / Wall Ave. (21.3m, 150mm, 1945)	1945	150	21.3	$3,891
16491	Cootamundra Sewer	Stratton Ave. (38.7m, 150mm, 1950)	1950	150	38.7	$7,069
16492	Cootamundra Sewer	Stratton Ave. / Campb. St. (58.7m, 150mm, 1950)	1950	150	58.7	$10,722

ams_num	town	Item_name	yr_built	diam	length	Renewal
16493	Cootamundra Sewer	Stratton Ave. / Olympic Way (47.3m, 150mm, 1950)	1950	150	47.3	$8,640
16496	Cootamundra Sewer	Sutton / Sheather St. (56.6m, 150mm, 1932)	1932	150	56.6	$10,339
16497	Cootamundra Sewer	Sutton North (54.9m, 150mm, 1932)	1932	150	54.9	$10,028
16498	Cootamundra Sewer	Temora / Crown St. (52.4m, 150mm, 1932)	1932	150	52.4	$9,571
16485	Cootamundra Sewer	Southern Thompson St. (73.3m, 150mm, 1950)	1950	150	73.3	$13,389
16486	Cootamundra Sewer	Sra Driveway (80.6m, 150mm, 1932)	1932	150	80.6	$14,722
16487	Cootamundra Sewer	Sra Frontage (69.2m, 150mm, 1932)	1932	150	69.2	$12,640
16488	Cootamundra Sewer	Sra Frontage (81.6m, 150mm, 1932)	1932	150	81.6	$14,905
16489	Cootamundra Sewer	Stratt. Ave . To Thomp. St. (78.2m, 150mm, 1950)	1950	150	78.2	$14,284
16490	Cootamundra Sewer	Stratton Ave. (24.4m, 150mm, 1950)	1950	150	24.4	$4,457
16479	Cootamundra Sewer	South Of Lane 15 (81m, 150mm, 1940)	1940	150	81.0	$14,795
16480	Cootamundra Sewer	South Off Lane 5 (18m, 150mm, 1932)	1932	150	18.0	$3,288
16481	Cootamundra Sewer	Southee Circle (55.8m, 150mm, 1950)	1950	150	55.8	$10,192
16484	Cootamundra Sewer	Southern Thompson St. (49m, 150mm, 1950)	1950	150	49.0	$8,950
16468	Cootamundra Sewer	Side Of S&C Club (28.6m, 150mm, 1950)	1950	150	28.6	$5,224
16456	Cootamundra Sewer	Scout Hall (61m, 150mm, 1932)	1932	150	61.0	$11,142
16457	Cootamundra Sewer	Sheather / Sutton St. (33.3m, 150mm, 1932)	1932	150	33.3	$6,083
16458	Cootamundra Sewer	Short St. (67.6m, 150mm, 1932)	1932	150	67.6	$12,348
16449	Cootamundra Sewer	S&C Car Park (55.6m, 300mm, 1932)	1932	300	55.6	$12,110
16443	Cootamundra Sewer	Richards St. South (17m, 150mm, 1950)	1950	150	17.0	$3,105
16444	Cootamundra Sewer	Richards St. South (20m, 150mm, 1950)	1950	150	20.0	$3,653
16445	Cootamundra Sewer	Richards St. South (37m, 150mm, 1950)	1950	150	37.0	$6,758
16446	Cootamundra Sewer	Richards St. South (40m, 150mm, 1950)	1950	150	40.0	$7,306
16447	Cootamundra Sewer	Richards St. South (64.5m, 150mm, 1950)	1950	150	64.5	$11,782
16437	Cootamundra Sewer	Rear Public Works (81.9m, 150mm, 1932)	1932	150	81.9	$14,960
16438	Cootamundra Sewer	Richards / Lawrence St. (45.7m, 150mm, 1950)	1950	150	45.7	$8,348
16439	Cootamundra Sewer	Richards St. South (10m, 150mm, 1950)	1950	150	10.0	$1,827
16440	Cootamundra Sewer	Richards St. South (11.2m, 150mm, 1950)	1950	150	11.2	$2,046
16441	Cootamundra Sewer	Richards St. South (15.5m, 150mm, 1950)	1950	150	15.5	$2,831
16442	Cootamundra Sewer	Richards St. South (15m, 150mm, 1950)	1950	150	15.0	$2,740
16431	Cootamundra Sewer	Poole St. / Bourke St. (78.4m, 150mm, 1940)	1940	150	78.4	$14,321
16432	Cootamundra	Primary School (80.3m, 150mm, 1932)	1932	150	80.3	$14,668

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
16433	Cootamundra Sewer	Rear Of Hospital (Dist) (47m, 150mm, 1932)	1932	150	47.0	$8,585
16434	Cootamundra Sewer	Rear Of Hospital (Dist) (58m, 400mm, 1932)	1932	400	58.0	$19,693
16435	Cootamundra Sewer	Rear Of Hospital (Dist) (71m, 400mm, 1932)	1932	400	71.0	$24,107
16436	Cootamundra Sewer	Rear Police Station (53m, 150mm, 1932)	1932	150	53.0	$9,681
16430	Cootamundra Sewer	Police Grounds (72.3m, 150mm, 1932)	1932	150	72.3	$13,206
16419	Cootamundra Sewer	Parker / Lawrence St. (61m, 150mm, 1950)	1950	150	61.0	$11,142
16420	Cootamundra Sewer	Parker St. / Cooper St. (52.1m, 150mm, 1932)	1932	150	52.1	$9,517
16421	Cootamundra Sewer	Parker St. / Temora St. (78.5m, 150mm, 1932)	1932	150	78.5	$14,339
16422	Cootamundra Sewer	Past Berthong St. (50.2m, 230mm, 1940)	1940	230	50.2	$9,683
16423	Cootamundra Sewer	Pinker. Rd. / Bradman St. (96.6m, 150mm, 1950)	1950	150	96.6	$17,645
16424	Cootamundra Sewer	Pinkerton Rd. / Rinkin St. (86m, 150mm, 1950)	1950	150	86.0	$15,709
16413	Cootamundra Sewer	Odonnell / Hay St. (57.6m, 150mm, 1932)	1932	150	57.6	$10,521
16414	Cootamundra Sewer	Odonnell / Murray St. (29.3m, 150mm, 1932)	1932	150	29.3	$5,352
16416	Cootamundra Sewer	Olympic Way (52m, 150mm, 1950)	1950	150	52.0	$9,498
16417	Cootamundra Sewer	Olympic Way (65.5m, 150mm, 1950)	1950	150	65.5	$11,964
16418	Cootamundra Sewer	Olympic Way (70m, 150mm, 1950)	1950	150	70.0	$12,786
16407	Cootamundra Sewer	North Off Lane 15B (30m, 150mm, 1932)	1932	150	30.0	$5,480
16408	Cootamundra Sewer	North Off Lane 5 (25.9m, 150mm, 1932)	1932	150	25.9	$4,731
16411	Cootamundra Sewer	Odonnell / Congou St. (38.3m, 150mm, 1932)	1932	150	38.3	$6,996
16412	Cootamundra Sewer	Odonnell / Hay St. (47.9m, 150mm, 1932)	1932	150	47.9	$8,749
16384	Cootamundra Sewer	Near Pump Station (66m, 230mm, 1940)	1940	230	66.0	$12,731
16377	Cootamundra Sewer	Muttama Ck. Warren Sub (85m, 450mm, 1932)	1932	450	85.0	$31,033
16378	Cootamundra Sewer	N. Of Crown / Bourke St. (79m, 150mm, 1940)	1940	150	79.0	$14,430
16371	Cootamundra Sewer	Murray / Renehan St. (67.4m, 230mm, 1932)	1932	230	67.4	$13,001
16372	Cootamundra Sewer	Murray / Temora St. (17.4m, 230mm, 1932)	1932	230	17.4	$3,356
16373	Cootamundra Sewer	Murray / Temora St. (55.5m, 230mm, 1932)	1932	230	55.5	$10,705
16374	Cootamundra Sewer	Murray / Temora St. (59.5m, 230mm, 1932)	1932	230	59.5	$11,477
16375	Cootamundra Sewer	Muttama Ck. Warren Sub (75m, 450mm, 1932)	1932	450	75.0	$27,382
16376	Cootamundra Sewer	Muttama Ck. Warren Sub (80m, 450mm, 1932)	1932	450	80.0	$29,207
16365	Cootamundra Sewer	Murray / Bapaume St. (68m, 150mm, 1932)	1932	150	68.0	$12,421
16366	Cootamundra Sewer	Murray / Justin St. (55.5m, 230mm, 1932)	1932	230	55.5	$10,705

ams_num	town	Item_name	yr_built	diam	length	Renewal
16367	Cootamundra Sewer	Murray / Justin St. (71.4m, 230mm, 1932)	1932	230	71.4	$13,772
16368	Cootamundra Sewer	Murray / Odonnell St. (45.7m, 230mm, 1932)	1932	230	45.7	$8,815
16369	Cootamundra Sewer	Murray / Odonnell St. (56.4m, 230mm, 1932)	1932	230	56.4	$10,879
16370	Cootamundra Sewer	Murray / Renehan St. (52.1m, 230mm, 1932)	1932	230	52.1	$10,050
16359	Cootamundra Sewer	Mitchell Park/Francis St. (78m, 230mm, 1938)	1938	230	78.0	$15,045
16363	Cootamundra Sewer	Murray / Adams St. (19m, 230mm, 1932)	1932	230	19.0	$3,665
16364	Cootamundra Sewer	Murray / Bapaume St. (52m, 150mm, 1932)	1932	150	52.0	$9,498
16355	Cootamundra Sewer	Midway Along Mcconghy (53m, 150mm, 1940)	1940	150	53.0	$9,681
16356	Cootamundra Sewer	Midway Along Ward St. (38m, 150mm, 1950)	1950	150	38.0	$6,941
16357	Cootamundra Sewer	Mitchell Park (76.8m, 230mm, 1938)	1938	230	76.8	$14,814
16358	Cootamundra Sewer	Mitchell Park/Cowcumbala St. (76.5m, 230mm, 1938)	1938	230	76.5	$14,756
16347	Cootamundra Sewer	Midway Along Lane 62 (44m, 150mm, 1950)	1950	150	44.0	$8,037
16352	Cootamundra Sewer	Midway Along Lane 7 (80.5m, 150mm, 1932)	1932	150	80.5	$14,704
16341	Cootamundra Sewer	Midway Along Lane 58 (73.2m, 150mm, 1938)	1938	150	73.2	$13,371
16342	Cootamundra Sewer	Midway Along Lane 59 (70m, 150mm, 1938)	1938	150	70.0	$12,786
16343	Cootamundra Sewer	Midway Along Lane 6 (65.8m, 150mm, 1932)	1932	150	65.8	$12,019
16344	Cootamundra Sewer	Midway Along Lane 60 (13.2m, 150mm, 1938)	1938	150	13.2	$2,411
16345	Cootamundra Sewer	Midway Along Lane 60 (44.2m, 150mm, 1938)	1938	150	44.2	$8,074
16346	Cootamundra Sewer	Midway Along Lane 60 (73.3m, 150mm, 1938)	1938	150	73.3	$13,389
16335	Cootamundra Sewer	Midway Along Lane 55 (43.8m, 150mm, 1938)	1938	150	43.8	$8,001
16336	Cootamundra Sewer	Midway Along Lane 55 (79m, 150mm, 1938)	1938	150	79.0	$14,430
16337	Cootamundra Sewer	Midway Along Lane 56 (72.7m, 150mm, 1938)	1938	150	72.7	$13,279
16338	Cootamundra Sewer	Midway Along Lane 57 (58.2m, 150mm, 1938)	1938	150	58.2	$10,631
16339	Cootamundra Sewer	Midway Along Lane 57 (73.2m, 150mm, 1938)	1938	150	73.2	$13,371
16340	Cootamundra Sewer	Midway Along Lane 58 (72.9m, 150mm, 1938)	1938	150	72.9	$13,316
16329	Cootamundra Sewer	Midway Along Lane 50 (67.3m, 150mm, 1938)	1938	150	67.3	$12,293
16330	Cootamundra Sewer	Midway Along Lane 50 (70.3m, 150mm, 1938)	1938	150	70.3	$12,841
16331	Cootamundra Sewer	Midway Along Lane 51 (90.1m, 230mm, 1938)	1938	230	90.1	$17,379
16332	Cootamundra Sewer	Midway Along Lane 52 (71.6m, 150mm, 1938)	1938	150	71.6	$13,078
16333	Cootamundra Sewer	Midway Along Lane 53 (80.7m, 150mm, 1938)	1938	150	80.7	$14,741
16334	Cootamundra Sewer	Midway Along Lane 54 (64.8m, 150mm, 1938)	1938	150	64.8	$11,836
16323	Cootamundra	Midway Along Lane 48 (67.9m, 150mm,	1938	150	67.9	$12,403

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer	1938)				
16324	Cootamundra Sewer	Midway Along Lane 49 (63.7m, 150mm, 1938)	1938	150	63.7	$11,635
16325	Cootamundra Sewer	Midway Along Lane 49 (70.1m, 150mm, 1938)	1938	150	70.1	$12,804
16326	Cootamundra Sewer	Midway Along Lane 5 (18.1m, 150mm, 1932)	1932	150	18.1	$3,306
16327	Cootamundra Sewer	Midway Along Lane 5 (58.8m, 150mm, 1932)	1932	150	58.8	$10,740
16328	Cootamundra Sewer	Midway Along Lane 5 (73.9m, 150mm, 1932)	1932	150	73.9	$13,499
16317	Cootamundra Sewer	Midway Along Lane 43 (50.3m, 150mm, 1938)	1938	150	50.3	$9,188
16318	Cootamundra Sewer	Midway Along Lane 43 (57.9m, 150mm, 1938)	1938	150	57.9	$10,576
16319	Cootamundra Sewer	Midway Along Lane 44 (16.8m, 150mm, 1938)	1938	150	16.8	$3,069
16320	Cootamundra Sewer	Midway Along Lane 44 (57.9m, 150mm, 1938)	1938	150	57.9	$10,576
16321	Cootamundra Sewer	Midway Along Lane 44 (58.5m, 150mm, 1938)	1938	150	58.5	$10,686
16322	Cootamundra Sewer	Midway Along Lane 48 (62.7m, 150mm, 1938)	1938	150	62.7	$11,453
16311	Cootamundra Sewer	Midway Along Lane 36 (84.7m, 230mm, 1940)	1940	230	84.7	$16,338
16312	Cootamundra Sewer	Midway Along Lane 39 (75.9m, 150mm, 1932)	1932	150	75.9	$13,864
16313	Cootamundra Sewer	Midway Along Lane 4 (69.6m, 150mm, 1932)	1932	150	69.6	$12,713
16314	Cootamundra Sewer	Midway Along Lane 4 (76.2m, 150mm, 1932)	1932	150	76.2	$13,919
16315	Cootamundra Sewer	Midway Along Lane 4 - 2 (76.2m, 150mm, 1932)	1932	150	76.2	$13,919
16316	Cootamundra Sewer	Midway Along Lane 40 (69.6m, 150mm, 1932)	1932	150	69.6	$12,713
16305	Cootamundra Sewer	Midway Along Lane 33 (63.4m, 150mm, 1932)	1932	150	63.4	$11,581
16306	Cootamundra Sewer	Midway Along Lane 33 (73.6m, 150mm, 1932)	1932	150	73.6	$13,444
16307	Cootamundra Sewer	Midway Along Lane 34 (71.1m, 150mm, 1940)	1940	150	71.1	$12,987
16308	Cootamundra Sewer	Midway Along Lane 34 (71m, 150mm, 1940)	1940	150	71.0	$12,969
16309	Cootamundra Sewer	Midway Along Lane 35 (70.2m, 150mm, 1940)	1940	150	70.2	$12,823
16310	Cootamundra Sewer	Midway Along Lane 35 (70m, 150mm, 1940)	1940	150	70.0	$12,786
16299	Cootamundra Sewer	Midway Along Lane 29 (53.4m, 150mm, 1938)	1938	150	53.4	$9,754
16300	Cootamundra Sewer	Midway Along Lane 29 (60.1m, 150mm, 1938)	1938	150	60.1	$10,978
16301	Cootamundra Sewer	Midway Along Lane 31 (52.2m, 150mm, 1932)	1932	150	52.2	$9,535
16302	Cootamundra Sewer	Midway Along Lane 31 (80.5m, 150mm, 1932)	1932	150	80.5	$14,704
16303	Cootamundra Sewer	Midway Along Lane 32 (57.7m, 150mm, 1932)	1932	150	57.7	$10,539
16304	Cootamundra Sewer	Midway Along Lane 32 (59.1m, 150mm, 1932)	1932	150	59.1	$10,795
16293	Cootamundra Sewer	Midway Along Lane 24 (78.5m, 150mm, 1932)	1932	150	78.5	$14,339
16294	Cootamundra Sewer	Midway Along Lane 25 (63.9m, 150mm, 1932)	1932	150	63.9	$11,672

ams_num	town	Item_name	yr_built	diam	length	Renewal
16295	Cootamundra Sewer	Midway Along Lane 25 (73.9m, 150mm, 1932)	1932	150	73.9	$13,499
16296	Cootamundra Sewer	Midway Along Lane 26 (34.9m, 150mm, 1932)	1932	150	34.9	$6,375
16297	Cootamundra Sewer	Midway Along Lane 26 (73m, 150mm, 1932)	1932	150	73.0	$13,334
16298	Cootamundra Sewer	Midway Along Lane 27 (80.6m, 300mm, 1932)	1932	300	80.6	$17,555
16287	Cootamundra Sewer	Midway Along Lane 22 (36.4m, 150mm, 1940)	1940	150	36.4	$6,649
16288	Cootamundra Sewer	Midway Along Lane 22 (38.6m, 150mm, 1940)	1940	150	38.6	$7,051
16289	Cootamundra Sewer	Midway Along Lane 22 (73.5m, 150mm, 1940)	1940	150	73.5	$13,426
16290	Cootamundra Sewer	Midway Along Lane 23 (71.2m, 150mm, 1940)	1940	150	71.2	$13,005
16291	Cootamundra Sewer	Midway Along Lane 23 (79.3m, 150mm, 1940)	1940	150	79.3	$14,485
16292	Cootamundra Sewer	Midway Along Lane 24 (51.8m, 150mm, 1932)	1932	150	51.8	$9,462
16281	Cootamundra Sewer	Midway Along Lane 17 (79.7m, 150mm, 1932)	1932	150	79.7	$14,558
16282	Cootamundra Sewer	Midway Along Lane 17 (80.6m, 150mm, 1932)	1932	150	80.6	$14,722
16283	Cootamundra Sewer	Midway Along Lane 18 (73.9m, 150mm, 1932)	1932	150	73.9	$13,499
16284	Cootamundra Sewer	Midway Along Lane 18 (77.8m, 150mm, 1932)	1932	150	77.8	$14,211
16285	Cootamundra Sewer	Midway Along Lane 19 (78.3m, 230mm, 1940)	1940	230	78.3	$15,103
16286	Cootamundra Sewer	Midway Along Lane 21 (80.9m, 230mm, 1940)	1940	230	80.9	$15,605
16275	Cootamundra Sewer	Midway Along Lane 11 (47.2m, 150mm, 1932)	1932	150	47.2	$8,622
16276	Cootamundra Sewer	Midway Along Lane 12 (76.3m, 150mm, 1932)	1932	150	76.3	$13,937
16277	Cootamundra Sewer	Midway Along Lane 14 (52.1m, 150mm, 1932)	1932	150	52.1	$9,517
16278	Cootamundra Sewer	Midway Along Lane 14 (75.8m, 150mm, 1932)	1932	150	75.8	$13,846
16279	Cootamundra Sewer	Midway Along Lane 16 (66.6m, 300mm, 1932)	1932	300	66.6	$14,506
16280	Cootamundra Sewer	Midway Along Lane 16 (80.5m, 300mm, 1932)	1932	300	80.5	$17,534
16270	Cootamundra Sewer	Midway Along John St. (22m, 150mm, 1950)	1950	150	22.0	$4,019
16271	Cootamundra Sewer	Midway Along John St. (33m, 150mm, 1950)	1950	150	33.0	$6,028
16272	Cootamundra Sewer	Midway Along John St. (38.5m, 150mm, 1950)	1950	150	38.5	$7,032
16273	Cootamundra Sewer	Midway Along Lane 10 (76.1m, 150mm, 1932)	1932	150	76.1	$13,900
16274	Cootamundra Sewer	Midway Along Lane 10 (76.2m, 150mm, 1932)	1932	150	76.2	$13,919
16262	Cootamundra Sewer	Mcconaghy St. / Lane 19 (46.4m, 150mm, 1940)	1940	150	46.4	$8,475
16264	Cootamundra Sewer	Midway Along Betts St. (65.8m, 230mm, 1940)	1940	230	65.8	$12,692
16257	Cootamundra Sewer	Mackay St. / Lane 29 (33.1m, 150mm, 1938)	1938	150	33.1	$6,046
16259	Cootamundra Sewer	Madway Along Lane 11 (59.4m, 150mm, 1932)	1932	150	59.4	$10,850
16250	Cootamundra	Lloyd Conkey Ave. (36m, 450mm, 1932)	1932	450	36.0	$13,143

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
16252	Cootamundra Sewer	Mackay St. / Cooper St. (71.9m, 150mm, 1932)	1932	150	71.9	$13,133
16188	Cootamundra Sewer	Lawrence / John St. (68.6m, 150mm, 1950)	1950	150	68.6	$12,530
16189	Cootamundra Sewer	Lawrence / Richards St. (16.2m, 150mm, 1950)	1950	150	16.2	$2,959
16190	Cootamundra Sewer	Lawrence / Richards St. (55.5m, 150mm, 1950)	1950	150	55.5	$10,138
16191	Cootamundra Sewer	Lawrence / Richards St. (58.2m, 150mm, 1950)	1950	150	58.2	$10,631
16192	Cootamundra Sewer	Lawrence St./ Lane 62 (72.5m, 150mm, 1950)	1950	150	72.5	$13,243
16193	Cootamundra Sewer	Lawrence St./ Ward St. (57m, 150mm, 1950)	1950	150	57.0	$10,412
16182	Cootamundra Sewer	Lane 7 / Murray St. (80.5m, 150mm, 1932)	1932	150	80.5	$14,704
16183	Cootamundra Sewer	Lane 7 / Quinn St. (80.7m, 150mm, 1932)	1932	150	80.7	$14,741
16184	Cootamundra Sewer	Lane 8 (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
16185	Cootamundra Sewer	Lane 8 (58.5m, 150mm, 1945)	1945	150	58.5	$10,686
16186	Cootamundra Sewer	Lane 9 (49.4m, 150mm, 1945)	1945	150	49.4	$9,023
16187	Cootamundra Sewer	Lane 9 / Temora St. (51.8m, 150mm, 1945)	1945	150	51.8	$9,462
16176	Cootamundra Sewer	Lane 59 / Campbell St. (69.8m, 150mm, 1938)	1938	150	69.8	$12,750
16177	Cootamundra Sewer	Lane 59 / Lawrence St. (70m, 150mm, 1938)	1938	150	70.0	$12,786
16178	Cootamundra Sewer	Lane 60 / Campbell St. (57.8m, 150mm, 1938)	1938	150	57.8	$10,558
16179	Cootamundra Sewer	Lane 61 (54m, 150mm, 1950)	1950	150	54.0	$9,864
16180	Cootamundra Sewer	Lane 62 / Lawrence St. (92m, 150mm, 1950)	1950	150	92.0	$16,805
16170	Cootamundra Sewer	Lane 55 / Cowcumbala St. (55.9m, 150mm, 1938)	1938	150	55.9	$10,211
16171	Cootamundra Sewer	Lane 55 / Cowcumbala St. (76.3m, 150mm, 1938)	1938	150	76.3	$13,937
16172	Cootamundra Sewer	Lane 55 / Lawrence St. (79.2m, 150mm, 1938)	1938	150	79.2	$14,467
16173	Cootamundra Sewer	Lane 56 / Cowcumbala St. (73.2m, 150mm, 1938)	1938	150	73.2	$13,371
16174	Cootamundra Sewer	Lane 56 / Lawrence St. (81.6m, 150mm, 1938)	1938	150	81.6	$14,905
16175	Cootamundra Sewer	Lane 58 / Campbell St. (71.7m, 150mm, 1938)	1938	150	71.7	$13,097
16164	Cootamundra Sewer	Lane 52 / Francis St. (71.7m, 150mm, 1938)	1938	150	71.7	$13,097
16165	Cootamundra Sewer	Lane 53 / Cowcumbala St. (70m, 150mm, 1938)	1938	150	70.0	$12,786
16166	Cootamundra Sewer	Lane 53 / Francis St. (80.5m, 150mm, 1938)	1938	150	80.5	$14,704
16167	Cootamundra Sewer	Lane 54 / Cowcumbala St. (80.4m, 150mm, 1938)	1938	150	80.4	$14,686
16168	Cootamundra Sewer	Lane 54 / Francis St. (61m, 150mm, 1938)	1938	150	61.0	$11,142
16169	Cootamundra Sewer	Lane 55 / Cowcumbala St. (26m, 150mm, 1938)	1938	150	26.0	$4,749
16158	Cootamundra Sewer	Lane 49 / Francis St. (66.5m, 150mm, 1938)	1938	150	66.5	$12,147

ams_num	town	Item_name	yr_built	diam	length	Renewal
16159	Cootamundra Sewer	Lane 5 / Chamen St. (60.3m, 150mm, 1932)	1932	150	60.3	$11,014
16160	Cootamundra Sewer	Lane 5 / Murray St. (68.9m, 150mm, 1932)	1932	150	68.9	$12,585
16161	Cootamundra Sewer	Lane 50 / Francis St. (69.7m, 150mm, 1938)	1938	150	69.7	$12,731
16162	Cootamundra Sewer	Lane 51 / Francis St. (90.1m, 230mm, 1938)	1938	230	90.1	$17,379
16163	Cootamundra Sewer	Lane 52 / Cowcumbala St. (62.5m, 150mm, 1938)	1938	150	62.5	$11,416
16152	Cootamundra Sewer	Lane 4 / Murray St. (67.4m, 150mm, 1932)	1932	150	67.4	$12,311
16153	Cootamundra Sewer	Lane 43 / Hurley St. (57.9m, 150mm, 1938)	1938	150	57.9	$10,576
16154	Cootamundra Sewer	Lane 44 / Hurley St. (41.4m, 150mm, 1938)	1938	150	41.4	$7,562
16155	Cootamundra Sewer	Lane 44 / Mackay St. (57.9m, 150mm, 1938)	1938	150	57.9	$10,576
16156	Cootamundra Sewer	Lane 45 / Hurley St. (46m, 150mm, 1938)	1938	150	46.0	$8,402
16157	Cootamundra Sewer	Lane 48 / Francis St. (62.8m, 150mm, 1938)	1938	150	62.8	$11,471
16144	Cootamundra Sewer	Lane 34 / Gundagai Rd. (71m, 150mm, 1940)	1940	150	71.0	$12,969
16145	Cootamundra Sewer	Lane 35 / Gundagai Rd. (66.8m, 150mm, 1940)	1940	150	66.8	$12,202
16146	Cootamundra Sewer	Lane 36 / Gundagai Rd. (84.5m, 230mm, 1940)	1940	230	84.5	$16,299
16147	Cootamundra Sewer	Lane 36 / Hume St. (66.3m, 230mm, 1940)	1940	230	66.3	$12,789
16148	Cootamundra Sewer	Lane 36 / Lane 37 (18.5m, 230mm, 1940)	1940	230	18.5	$3,568
16151	Cootamundra Sewer	Lane 39 / Mackay St. (43.8m, 150mm, 1932)	1932	150	43.8	$8,001
16138	Cootamundra Sewer	Lane 29 / Mackay St. (39m, 150mm, 1938)	1938	150	39.0	$7,124
16139	Cootamundra Sewer	Lane 29 North (26.7m, 150mm, 1938)	1938	150	26.7	$4,877
16140	Cootamundra Sewer	Lane 31 / Mackay St. (30.3m, 150mm, 1932)	1932	150	30.3	$5,535
16141	Cootamundra Sewer	Lane 31 / Wallendoon St. (68.5m, 150mm, 1932)	1932	150	68.5	$12,512
16142	Cootamundra Sewer	Lane 32 / Mackay St. (44.5m, 150mm, 1932)	1932	150	44.5	$8,128
16143	Cootamundra Sewer	Lane 32 / Wallendoon St. (45m, 150mm, 1932)	1932	150	45.0	$8,220
16132	Cootamundra Sewer	Lane 23 / Hume St. (36.6m, 150mm, 1940)	1940	150	36.6	$6,685
16133	Cootamundra Sewer	Lane 24 / Wallendoon St. (32.2m, 150mm, 1932)	1932	150	32.2	$5,882
16134	Cootamundra Sewer	Lane 26 / Bourke St. (73.5m, 150mm, 1932)	1932	150	73.5	$13,426
16135	Cootamundra Sewer	Lane 27 / Bourke St. (83.8m, 300mm, 1932)	1932	300	83.8	$18,252
16137	Cootamundra Sewer	Lane 28 / Bourke St. (82.9m, 150mm, 1940)	1940	150	82.9	$15,143
16126	Cootamundra Sewer	Lane 19 / Wills St. (65.3m, 230mm, 1940)	1940	230	65.3	$12,596
16130	Cootamundra Sewer	Lane 21 / Hume St. (80.6m, 230mm, 1940)	1940	230	80.6	$15,547
16131	Cootamundra Sewer	Lane 21 / Wills St. (51.1m, 230mm, 1940)	1940	230	51.1	$9,857
16118	Cootamundra	Lane 15 / Cutler Ave. (81.5m, 230mm, 1932)	1932	230	81.5	$15,721

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
16120	Cootamundra Sewer	Lane 15 / Short St. (57m, 230mm, 1932)	1932	230	57.0	$10,995
16122	Cootamundra Sewer	Lane 15B (69m, 150mm, 1932)	1932	150	69.0	$12,604
16123	Cootamundra Sewer	Lane 16 / Adams St. (72m, 300mm, 1932)	1932	300	72.0	$15,682
16124	Cootamundra Sewer	Lane 18 / Bourke St. (62.3m, 150mm, 1932)	1932	150	62.3	$11,380
16111	Cootamundra Sewer	Lane 1 South2 (80.6m, 150mm, 1932)	1932	150	80.6	$14,722
16112	Cootamundra Sewer	Lane 10 / Crown St. (50.7m, 150mm, 1932)	1932	150	50.7	$9,261
16113	Cootamundra Sewer	Lane 11 / Crown St. (59.2m, 150mm, 1932)	1932	150	59.2	$10,813
16114	Cootamundra Sewer	Lane 12 / Crown St. (66.2m, 150mm, 1932)	1932	150	66.2	$12,092
16115	Cootamundra Sewer	Lane 13 / Crown St. (78.6m, 150mm, 1932)	1932	150	78.6	$14,357
16116	Cootamundra Sewer	Lane 14 / Crown St. (55.2m, 150mm, 1932)	1932	150	55.2	$10,083
16107	Cootamundra Sewer	Lane 1 Midway (80.6m, 150mm, 1932)	1932	150	80.6	$14,722
16110	Cootamundra Sewer	Lane 1 South (80.6m, 150mm, 1932)	1932	150	80.6	$14,722
16096	Cootamundra Sewer	John St. South (29m, 150mm, 1950)	1950	150	29.0	$5,297
16099	Cootamundra Sewer	Justin / Murray St. (28.5m, 150mm, 1945)	1945	150	28.5	$5,206
16090	Cootamundra Sewer	John / Lawrence St. (40.2m, 150mm, 1950)	1950	150	40.2	$7,343
16091	Cootamundra Sewer	John St. North (19.5m, 150mm, 1950)	1950	150	19.5	$3,562
16092	Cootamundra Sewer	John St. North2 (19.5m, 150mm, 1950)	1950	150	19.5	$3,562
16093	Cootamundra Sewer	John St. North (20.1m, 150mm, 1950)	1950	150	20.1	$3,671
16094	Cootamundra Sewer	John St. North (20m, 150mm, 1950)	1950	150	20.0	$3,653
16095	Cootamundra Sewer	John St. North (45.7m, 150mm, 1950)	1950	150	45.7	$8,348
16085	Cootamundra Sewer	In Front Of Cowong St. (64.1m, 150mm, 1940)	1940	150	64.1	$11,709
16079	Cootamundra Sewer	Hurley St. / Centen. Ave. (80.4m, 230mm, 1938)	1938	230	80.4	$15,508
16074	Cootamundra Sewer	Hurley / Ursula St. (55.9m, 230mm, 1938)	1938	230	55.9	$10,783
16075	Cootamundra Sewer	Hurley / Ursula St. (81.2m, 230mm, 1938)	1938	230	81.2	$15,663
16076	Cootamundra Sewer	Hurley Near Thomp. St. (30.9m, 230mm, 1938)	1938	230	30.9	$5,960
16066	Cootamundra Sewer	Hurley / Margaret St. (56.3m, 230mm, 1938)	1938	230	56.3	$10,860
16067	Cootamundra Sewer	Hurley / Margaret St. (80.3m, 230mm, 1938)	1938	230	80.3	$15,489
16068	Cootamundra Sewer	Hurley / Olney St. (30.2m, 230mm, 1938)	1938	230	30.2	$5,825
16069	Cootamundra Sewer	Hurley / Olney St. (80.3m, 230mm, 1938)	1938	230	80.3	$15,489
16070	Cootamundra Sewer	Hurley / Parker St. (55.9m, 230mm, 1938)	1938	230	55.9	$10,783
16071	Cootamundra Sewer	Hurley / Parker St. (80m, 230mm, 1938)	1938	230	80.0	$15,431

ams_num	town	Item_name	yr_built	diam	length	Renewal
16060	Cootamundra Sewer	Hovell St. / Adams St. (65.4m, 150mm, 1932)	1932	150	65.4	$11,946
16061	Cootamundra Sewer	Hovell St. / Temora St. (79.1m, 150mm, 1932)	1932	150	79.1	$14,448
16062	Cootamundra Sewer	Hovell St. North (43.3m, 150mm, 1932)	1932	150	43.3	$7,909
16063	Cootamundra Sewer	Hovell St. North (80.5m, 150mm, 1932)	1932	150	80.5	$14,704
16065	Cootamundra Sewer	Hurley / Margaret St. (28m, 150mm, 1938)	1938	150	28.0	$5,114
16055	Cootamundra Sewer	Hovell / Adams St. (122m, 150mm, 1932)	1932	150	122.0	$22,285
16056	Cootamundra Sewer	Hovell / Cowcumbala St. (71.7m, 150mm, 1938)	1938	150	71.7	$13,097
16057	Cootamundra Sewer	Hovell / Cowcumbala St. (74m, 150mm, 1938)	1938	150	74.0	$13,517
16058	Cootamundra Sewer	Hovell / Lawrence St. (73.2m, 150mm, 1938)	1938	150	73.2	$13,371
16059	Cootamundra Sewer	Hovell St / Morris St. (73.6m, 150mm, 1932)	1932	150	73.6	$13,444
16049	Cootamundra Sewer	Hay / Adams St. (40.9m, 150mm, 1932)	1932	150	40.9	$7,471
16050	Cootamundra Sewer	Hay / Odonnell St. (58.2m, 150mm, 1932)	1932	150	58.2	$10,631
16051	Cootamundra Sewer	Hay / Odonnell St. (78.7m, 150mm, 1932)	1932	150	78.7	$14,375
16038	Cootamundra Sewer	Francis St. / Sutton St. (81m, 230mm, 1938)	1938	230	81.0	$15,624
16040	Cootamundra Sewer	Gunda. Rd./ Victoria Pde (18m, 150mm, 1940)	1940	150	18.0	$3,288
16044	Cootamundra Sewer	Gundagai Rd. (39m, 150mm, 1940)	1940	150	39.0	$7,124
16045	Cootamundra Sewer	Gundagai Rd. (85.5m, 150mm, 1940)	1940	150	85.5	$15,617
16046	Cootamundra Sewer	Gundagai Rd./Florance St. (73.6m, 150mm, 1940)	1940	150	73.6	$13,444
16032	Cootamundra Sewer	Francis / Thompson St. (67.7m, 230mm, 1938)	1938	230	67.7	$13,059
16033	Cootamundra Sewer	Francis / Thompson St. (71m, 230mm, 1938)	1938	230	71.0	$13,695
16034	Cootamundra Sewer	Francis St. / Centenary Ave. (57.8m, 150mm, 1938)	1938	150	57.8	$10,558
16035	Cootamundra Sewer	Francis St. / Centenary Ave. (81.3m, 150mm, 1938)	1938	150	81.3	$14,850
16036	Cootamundra Sewer	Francis St. / Parker St. (45.2m, 150mm, 1950)	1950	150	45.2	$8,256
16037	Cootamundra Sewer	Francis St. / Parker St. (54m, 150mm, 1950)	1950	150	54.0	$9,864
16026	Cootamundra Sewer	East Off Lane 48 (40m, 150mm, 1938)	1938	150	40.0	$7,306
16027	Cootamundra Sewer	East Off Lane 49 (34.3m, 150mm, 1938)	1938	150	34.3	$6,265
16028	Cootamundra Sewer	East Off Lane 50 (26.5m, 150mm, 1938)	1938	150	26.5	$4,840
16029	Cootamundra Sewer	East Off Lane 57 (24m, 150mm, 1938)	1938	150	24.0	$4,384
16030	Cootamundra Sewer	East Off Short St. (49.9m, 150mm, 1932)	1932	150	49.9	$9,115
16020	Cootamundra Sewer	East Off Lane 31 (33.8m, 150mm, 1932)	1932	150	33.8	$6,174
16021	Cootamundra Sewer	East Off Lane 32 (22.9m, 150mm, 1932)	1932	150	22.9	$4,183
16022	Cootamundra	East Off Lane 32 (42.1m, 150mm, 1932)	1932	150	42.1	$7,690

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
16023	Cootamundra Sewer	East Off Lane 35 (22.9m, 150mm, 1940)	1940	150	22.9	$4,183
16024	Cootamundra Sewer	East Off Lane 40 (31.6m, 150mm, 1932)	1932	150	31.6	$5,772
16025	Cootamundra Sewer	East Off Lane 44 (37.6m, 150mm, 1938)	1938	150	37.6	$6,868
16014	Cootamundra Sewer	East Off Lane 21 (46.3m, 150mm, 1940)	1940	150	46.3	$8,457
16015	Cootamundra Sewer	East Off Lane 23 (32.3m, 150mm, 1940)	1940	150	32.3	$5,900
16016	Cootamundra Sewer	East Off Lane 24 (18m, 150mm, 1932)	1932	150	18.0	$3,288
16017	Cootamundra Sewer	East Off Lane 25 (33.9m, 150mm, 1932)	1932	150	33.9	$6,192
16018	Cootamundra Sewer	East Off Lane 26 (22.7m, 150mm, 1932)	1932	150	22.7	$4,146
16019	Cootamundra Sewer	East Off Lane 31 (17.2m, 150mm, 1932)	1932	150	17.2	$3,142
16011	Cootamundra Sewer	East Off Barnes St. (72.5m, 150mm, 1932)	1932	150	72.5	$13,243
16012	Cootamundra Sewer	East Off Hovell St. (51.8m, 150mm, 1932)	1932	150	51.8	$9,462
16013	Cootamundra Sewer	East Off Lane 17 (32.3m, 150mm, 1932)	1932	150	32.3	$5,900
16005	Cootamundra Sewer	East Of Florance St. (41m, 150mm, 1940)	1940	150	41.0	$7,489
16006	Cootamundra Sewer	East Of Florance St. (48.9m, 150mm, 1940)	1940	150	48.9	$8,932
16007	Cootamundra Sewer	East Of Florance St. (61.1m, 150mm, 1940)	1940	150	61.1	$11,161
15989	Cootamundra Sewer	Crown St. / Bourke St. (64m, 150mm, 1940)	1940	150	64.0	$11,690
15990	Cootamundra Sewer	Crown St. / Lane 15 (16m, 150mm, 1940)	1940	150	16.0	$2,923
15991	Cootamundra Sewer	Crown St. / Lane 15 (59.5m, 150mm, 1940)	1940	150	59.5	$10,868
15982	Cootamundra Sewer	Crown / Odonnell St. (49.2m, 230mm, 1932)	1932	230	49.2	$9,490
15983	Cootamundra Sewer	Crown / Odonnell St. (78m, 230mm, 1932)	1932	230	78.0	$15,045
15984	Cootamundra Sewer	Crown / Queen St. (52.5m, 230mm, 1932)	1932	230	52.5	$10,127
15985	Cootamundra Sewer	Crown / Queen St. (74.4m, 230mm, 1932)	1932	230	74.4	$14,351
15986	Cootamundra Sewer	Crown / Temora St. (71.5m, 230mm, 1932)	1932	230	71.5	$13,792
15988	Cootamundra Sewer	Crown St. / Adams St. (57.6m, 230mm, 1932)	1932	230	57.6	$11,110
15974	Cootamundra Sewer	Cowcum. St. / Centen. Ave. (58.2m, 150mm, 1938)	1938	150	58.2	$10,631
15977	Cootamundra Sewer	Cowcumbala / Hovell St. (80m, 150mm, 1938)	1938	150	80.0	$14,613
15978	Cootamundra Sewer	Cowcumbala / Parker St. (73.4m, 150mm, 1950)	1950	150	73.4	$13,407
15981	Cootamundra Sewer	Cowcumbala St. / Lane 56 (27m, 150mm, 1950)	1950	150	27.0	$4,932
15968	Cootamundra Sewer	Congou / Odonnell St. (53.5m, 150mm, 1932)	1932	150	53.5	$9,772
15969	Cootamundra Sewer	Congou / Odonnell St. (61.4m, 150mm, 1932)	1932	150	61.4	$11,215
15970	Cootamundra Sewer	Congou / Queen St. (53.5m, 150mm, 1932)	1932	150	53.5	$9,772

ams_num	town	Item_name	yr_built	diam	length	Renewal
15971	Cootamundra Sewer	Cooper / Adams St. (52.5m, 150mm, 1932)	1932	150	52.5	$9,590
15972	Cootamundra Sewer	Cooper / Parker St. (55.6m, 150mm, 1932)	1932	150	55.6	$10,156
15973	Cootamundra Sewer	Coota Shire Frontage (73.9m, 150mm, 1932)	1932	150	73.9	$13,499
15962	Cootamundra Sewer	Catholic School (54.9m, 150mm, 1932)	1932	150	54.9	$10,028
15963	Cootamundra Sewer	Catholic School (55.8m, 150mm, 1932)	1932	150	55.8	$10,192
15964	Cootamundra Sewer	Centen. Ave To Lane 61 (55.1m, 150mm, 1950)	1950	150	55.1	$10,065
15967	Cootamundra Sewer	Congou / Adams St. (73.8m, 150mm, 1932)	1932	150	73.8	$13,480
15956	Cootamundra Sewer	Cameron Square (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15957	Cootamundra Sewer	Campbell St. / Centen. Ave. (58.5m, 150mm, 1950)	1950	150	58.5	$10,686
15958	Cootamundra Sewer	Campbell St. / Centen. Ave. (80.5m, 150mm, 1950)	1950	150	80.5	$14,704
15960	Cootamundra Sewer	Caravan Park (61.4m, 150mm, 1932)	1932	150	61.4	$11,215
15954	Cootamundra Sewer	Bullecourt / Chamen St. (70.4m, 150mm, 1932)	1932	150	70.4	$12,859
15955	Cootamundra Sewer	Cameron Square (51.8m, 150mm, 1945)	1945	150	51.8	$9,462
15944	Cootamundra Sewer	Betts Street (75m, 450mm, 1932)	1932	450	75.0	$27,382
15945	Cootamundra Sewer	Bourke St, / Crown St. (34.1m, 150mm, 1940)	1940	150	34.1	$6,229
15946	Cootamundra Sewer	Bourke St. / Hovell St. (50.4m, 150mm, 1932)	1932	150	50.4	$9,206
15947	Cootamundra Sewer	Bourke St. / Hovell St. (80.6m, 150mm, 1932)	1932	150	80.6	$14,722
15948	Cootamundra Sewer	Bourke St. / Lane 28 (28.4m, 150mm, 1940)	1940	150	28.4	$5,188
15949	Cootamundra Sewer	Bourke St. / Poole St. (71.3m, 150mm, 1940)	1940	150	71.3	$13,024
15938	Cootamundra Sewer	Bet. Williams & Wall Ave. (39.6m, 150mm, 1945)	1945	150	39.6	$7,233
15939	Cootamundra Sewer	Bet. Williams & Wall Ave. (46.7m, 150mm, 1945)	1945	150	46.7	$8,530
15940	Cootamundra Sewer	Bet. Williams & Wall Ave. (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15941	Cootamundra Sewer	Bet. Williams & Wall Ave.2 (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15942	Cootamundra Sewer	Bet. Williams & Wall Ave. (56.5m, 150mm, 1945)	1945	150	56.5	$10,320
15943	Cootamundra Sewer	Bet. Wills St. & Lane 20 (66.6m, 150mm, 1940)	1940	150	66.6	$12,165
15936	Cootamundra Sewer	Bet. Williams & Wall Ave. (12.2m, 150mm, 1945)	1945	150	12.2	$2,228
15937	Cootamundra Sewer	Bet. Williams & Wall Ave. (37.2m, 150mm, 1945)	1945	150	37.2	$6,795
15926	Cootamundra Sewer	Bet. Ward & Byrne St. (40m, 150mm, 1950)	1950	150	40.0	$7,306
15920	Cootamundra Sewer	Bet. Ursula / Parker St. (43.5m, 150mm, 1950)	1950	150	43.5	$7,946
15921	Cootamundra Sewer	Bet. Ursula / Parker St. (46m, 150mm, 1950)	1950	150	46.0	$8,402
15922	Cootamundra Sewer	Bet. Ward & Byrne St. (10m, 150mm, 1950)	1950	150	10.0	$1,827
15923	Cootamundra	Bet. Ward & Byrne St. (15m, 150mm, 1950)	1950	150	15.0	$2,740

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
15924	Cootamundra Sewer	Bet. Ward & Byrne St. (20m, 150mm, 1950)	1950	150	20.0	$3,653
15925	Cootamundra Sewer	Bet. Ward & Byrne St. (22m, 150mm, 1950)	1950	150	22.0	$4,019
15914	Cootamundra Sewer	Bet. Thomp. St. & Olympic Way (31m, 150mm, 1950)	1950	150	31.0	$5,662
15915	Cootamundra Sewer	Bet. Thomp. St. & Olympic Way (43m, 150mm, 1950)	1950	150	43.0	$7,854
15916	Cootamundra Sewer	Bet. Ursula & Parker St. (23m, 150mm, 1950)	1950	150	23.0	$4,201
15917	Cootamundra Sewer	Bet. Ursula & Parker St.2 (23m, 150mm, 1950)	1950	150	23.0	$4,201
15918	Cootamundra Sewer	Bet. Ursula & Parker St. (66.8m, 150mm, 1950)	1950	150	66.8	$12,202
15919	Cootamundra Sewer	Bet. Ursula & Parker St. (68.6m, 150mm, 1950)	1950	150	68.6	$12,530
15908	Cootamundra Sewer	Bet. Temora & Sheather St. (74.5m, 150mm, 1932)	1932	150	74.5	$13,608
15909	Cootamundra Sewer	Bet. Temora St. & Cameron Sq. (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15910	Cootamundra Sewer	Bet. Temora St. & Cameron Sq.2 (54.9m, 150mm, 1945	1945	150	54.9	$10,028
15911	Cootamundra Sewer	Bet. Thomp. / Cooper St. (55.8m, 150mm, 1932)	1932	150	55.8	$10,192
15912	Cootamundra Sewer	Bet. Thomp. / Cooper St.2 (55.8m, 150mm, 1932)	1932	150	55.8	$10,192
15913	Cootamundra Sewer	Bet. Thomp. / Cooper St. (79m, 150mm, 1932)	1932	150	79.0	$14,430
15902	Cootamundra Sewer	Bet. Temora & Sheather St. (38m, 150mm, 1932)	1932	150	38.0	$6,941
15903	Cootamundra Sewer	Bet. Temora & Sheather St. (50.5m, 150mm, 1932)	1932	150	50.5	$9,224
15904	Cootamundra Sewer	Bet. Temora & Sheather St. (54.3m, 150mm, 1932)	1932	150	54.3	$9,918
15905	Cootamundra Sewer	Bet. Temora & Sheather St. (55.5m, 150mm, 1932)	1932	150	55.5	$10,138
15906	Cootamundra Sewer	Bet. Temora & Sheather St. (57.8m, 150mm, 1932)	1932	150	57.8	$10,558
15907	Cootamundra Sewer	Bet. Temora & Sheather St. (60.6m, 150mm, 1932)	1932	150	60.6	$11,069
15896	Cootamundra Sewer	Bet. Temora & Justin St. (45.4m, 150mm, 1932)	1932	150	45.4	$8,293
15897	Cootamundra Sewer	Bet. Temora & Justin St. (60.3m, 150mm, 1932)	1932	150	60.3	$11,014
15898	Cootamundra Sewer	Bet. Temora & Justin St. (74.7m, 150mm, 1932)	1932	150	74.7	$13,645
15899	Cootamundra Sewer	Bet. Temora & Justin St. (76.1m, 150mm, 1932)	1932	150	76.1	$13,900
15900	Cootamundra Sewer	Bet. Temora & Sheather St. (26.1m, 150mm, 1932)	1932	150	26.1	$4,767
15901	Cootamundra Sewer	Bet. Temora & Sheather St. (27.7m, 150mm, 1932)	1932	150	27.7	$5,060
15890	Cootamundra Sewer	Bet. Sutton / Thomp. St. (26m, 150mm, 1932)	1932	150	26.0	$4,749
15891	Cootamundra Sewer	Bet. Sutton / Thomp. St. (61.2m, 150mm, 1932)	1932	150	61.2	$11,179
15892	Cootamundra Sewer	Bet. Sutton / Thomp. St. (65.6m, 150mm, 1932)	1932	150	65.6	$11,982
15893	Cootamundra Sewer	Bet. Sutton / Thomp. St. (79.7m, 150mm, 1932)	1932	150	79.7	$14,558
15894	Cootamundra Sewer	Bet. Sutton St. & Lane 40 (80.9m, 400mm, 1932)	1932	400	80.9	$27,469

ams_num	town	Item_name	yr_built	diam	length	Renewal
15895	Cootamundra Sewer	Bet. Temora & Justin St. (26.8m, 150mm, 1932)	1932	150	26.8	$4,895
15888	Cootamundra Sewer	Bet. Sutton / Thomp. St. (16.5m, 150mm, 1932)	1932	150	16.5	$3,014
15889	Cootamundra Sewer	Bet. Sutton / Thomp. St. (23.7m, 150mm, 1932)	1932	150	23.7	$4,329
15878	Cootamundra Sewer	Bet. Railway & Oban St. (34.1m, 150mm, 1945)	1945	150	34.1	$6,229
15879	Cootamundra Sewer	Bet. Railway & Oban St. (51.8m, 150mm, 1945)	1945	150	51.8	$9,462
15880	Cootamundra Sewer	Bet. Railway & Oban St. (54m, 150mm, 1945)	1945	150	54.0	$9,864
15881	Cootamundra Sewer	Bet. Railway & Oban St. (55.8m, 150mm, 1945)	1945	150	55.8	$10,192
15882	Cootamundra Sewer	Bet. Richards & Parker St. (68.3m, 150mm, 1950)	1950	150	68.3	$12,476
15874	Cootamundra Sewer	Bet. Railway & Cameron Square (32.9m, 150mm, 1945)	1945	150	32.9	$6,010
15875	Cootamundra Sewer	Bet. Railway & Cameron Square (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15876	Cootamundra Sewer	Bet. Railway & Cameron Square2 (54.9m, 150mm, 1945	1945	150	54.9	$10,028
15877	Cootamundra Sewer	Bet. Railway & Oban St. (19m, 150mm, 1945)	1945	150	19.0	$3,471
15866	Cootamundra Sewer	Bet. Quinn & Parker St. (16.1m, 150mm, 1932)	1932	150	16.1	$2,941
15867	Cootamundra Sewer	Bet. Quinn & Parker St. (22m, 150mm, 1932)	1932	150	22.0	$4,019
15868	Cootamundra Sewer	Bet. Quinn & Parker St. (31m, 150mm, 1932)	1932	150	31.0	$5,662
15869	Cootamundra Sewer	Bet. Quinn & Parker St. (38.2m, 150mm, 1932)	1932	150	38.2	$6,978
15870	Cootamundra Sewer	Bet. Quinn & Parker St. (53.4m, 150mm, 1932)	1932	150	53.4	$9,754
15871	Cootamundra Sewer	Bet. Quinn & Parker St. (61.9m, 150mm, 1932)	1932	150	61.9	$11,307
15864	Cootamundra Sewer	Bet. Queen & Temora St. (52.9m, 150mm, 1932)	1932	150	52.9	$9,663
15865	Cootamundra Sewer	Bet. Queen & Temora St. (56.6m, 150mm, 1932)	1932	150	56.6	$10,339
15840	Cootamundra Sewer	Bet. Park. St.& Centen. Ave. (55.8m, 150mm, 1938)	1938	150	55.8	$10,192
15841	Cootamundra Sewer	Bet. Parker & Cooper St. (28.6m, 150mm, 1932)	1932	150	28.6	$5,224
15842	Cootamundra Sewer	Bet. Parker & Richard St. (37m, 150mm, 1938)	1938	150	37.0	$6,758
15843	Cootamundra Sewer	Bet. Parker & Richard St. (71.3m, 150mm, 1938)	1938	150	71.3	$13,024
15844	Cootamundra Sewer	Bet. Parker & Richard St. (72m, 150mm, 1938)	1938	150	72.0	$13,152
15845	Cootamundra Sewer	Bet. Parker & Richards St. (38.1m, 150mm, 1950)	1950	150	38.1	$6,959
15834	Cootamundra Sewer	Bet. Odonnell & Adams St. (45.3m, 150mm, 1932)	1932	150	45.3	$8,274
15828	Cootamundra Sewer	Bet. Odonn. & Temora St. (50.4m, 150mm, 1932)	1932	150	50.4	$9,206
15829	Cootamundra Sewer	Bet. Odonn. & Temora St. (55.8m, 150mm, 1932)	1932	150	55.8	$10,192
15830	Cootamundra Sewer	Bet. Odonn. & Temora St. (57.4m, 150mm, 1932)	1932	150	57.4	$10,485
15831	Cootamundra Sewer	Bet. Odonnell & Adams St. (15.9m, 150mm, 1932)	1932	150	15.9	$2,904
15832	Cootamundra	Bet. Odonnell & Adams St. (17.3m, 150mm,	1932	150	17.3	$3,160

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer	1932)				
15833	Cootamundra Sewer	Bet. Odonnell & Adams St. (39.6m, 150mm, 1932)	1932	150	39.6	$7,233
15825	Cootamundra Sewer	Bet. Oban & Temora St. (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15826	Cootamundra Sewer	Bet. Oban & Temora St.2 (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15827	Cootamundra Sewer	Bet. Oban & Temora St.3 (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15817	Cootamundra Sewer	Bet. Morris & Temora St. (21.2m, 150mm, 1932)	1932	150	21.2	$3,872
15818	Cootamundra Sewer	Bet. Morris & Temora St. (34.9m, 150mm, 1932)	1932	150	34.9	$6,375
15819	Cootamundra Sewer	Bet. Morris & Temora St. (74.5m, 150mm, 1932)	1932	150	74.5	$13,608
15820	Cootamundra Sewer	Bet. Morris & Temora St. (83m, 150mm, 1932)	1932	150	83.0	$15,161
15810	Cootamundra Sewer	Bet. Meagher / Ursula St. (61m, 150mm, 1950)	1950	150	61.0	$11,142
15811	Cootamundra Sewer	Bet. Merle Ave & Hay St. (19.6m, 230mm, 1932)	1932	230	19.6	$3,781
15804	Cootamundra Sewer	Bet. Mckenna & Wall Ave. (8.2m, 150mm, 1945)	1945	150	8.2	$1,498
15805	Cootamundra Sewer	Bet. Meagher / Ursula St. (20m, 150mm, 1950)	1950	150	20.0	$3,653
15806	Cootamundra Sewer	Bet. Meagher / Ursula St. (44m, 150mm, 1950)	1950	150	44.0	$8,037
15809	Cootamundra Sewer	Bet. Meagher / Ursula St. (54.6m, 150mm, 1950)	1950	150	54.6	$9,973
15802	Cootamundra Sewer	Bet. Mckenna & Wall Ave. (36.7m, 150mm, 1945)	1945	150	36.7	$6,704
15803	Cootamundra Sewer	Bet. Mckenna & Wall Ave. (54.9m, 150mm, 1945)	1945	150	54.9	$10,028
15780	Cootamundra Sewer	Bet. Lane 57 & Hovell St. (34m, 150mm, 1938)	1938	150	34.0	$6,210
15781	Cootamundra Sewer	Bet. Lane 6 & Parker St. (71.5m, 150mm, 1932)	1932	150	71.5	$13,060
15782	Cootamundra Sewer	Bet. Lawre. & Campbell St. (22.3m, 150mm, 1938)	1938	150	22.3	$4,073
15783	Cootamundra Sewer	Bet. Lawre. & Campbell St. (82.1m, 150mm, 1938)	1938	150	82.1	$14,996
15784	Cootamundra Sewer	Bet. Lawren. & Campb. St. (71.6m, 150mm, 1938)	1938	150	71.6	$13,078
15785	Cootamundra Sewer	Bet. Lawren. & Campb. St. (73.2m, 150mm, 1938)	1938	150	73.2	$13,371
15774	Cootamundra Sewer	Bet. Lane 54 & Lane 61 (20m, 150mm, 1938)	1938	150	20.0	$3,653
15775	Cootamundra Sewer	Bet. Lane 54 & Lane 61 (27m, 150mm, 1950)	1950	150	27.0	$4,932
15776	Cootamundra Sewer	Bet. Lane 54 & Lane 61 (46.7m, 150mm, 1938)	1938	150	46.7	$8,530
15777	Cootamundra Sewer	Bet. Lane 54 & Lane 61 (53.7m, 150mm, 1938)	1938	150	53.7	$9,809
15778	Cootamundra Sewer	Bet. Lane 54 & Lane 61 (67.7m, 150mm, 1950)	1950	150	67.7	$12,366
15779	Cootamundra Sewer	Bet. Lane 54 & Lane 61 (78m, 150mm, 1938)	1938	150	78.0	$14,247
15768	Cootamundra Sewer	Bet. Lane 36 & Victoria Pde (91.6m, 150mm, 1940)	1940	150	91.6	$16,732
15769	Cootamundra Sewer	Bet. Lane 36 And Cowong St. (40.7m, 150mm, 1940)	1940	150	40.7	$7,434
15770	Cootamundra Sewer	Bet. Lane 39 & Hovell St. (56.4m, 150mm, 1932)	1932	150	56.4	$10,302

ams_num	town	Item_name	yr_built	diam	length	Renewal
15771	Cootamundra Sewer	Bet. Lane 40 & Thomp. St. (56.4m, 400mm, 1932)	1932	400	56.4	$19,150
15772	Cootamundra Sewer	Bet. Lane 51 & Sutton St. (57m, 230mm, 1938)	1938	230	57.0	$10,995
15773	Cootamundra Sewer	Bet. Lane 52 & Hovell St. (25m, 150mm, 1938)	1938	150	25.0	$4,567
15762	Cootamundra Sewer	Bet. Lane 34 & Warren St. (31.4m, 150mm, 1940)	1940	150	31.4	$5,736
15763	Cootamundra Sewer	Bet. Lane 34 & Warren St. (36.4m, 150mm, 1940)	1940	150	36.4	$6,649
15764	Cootamundra Sewer	Bet. Lane 35 & Warren St. (31.1m, 150mm, 1940)	1940	150	31.1	$5,681
15766	Cootamundra Sewer	Bet. Lane 36 & Florance St. (18m, 150mm, 1940)	1940	150	18.0	$3,288
15767	Cootamundra Sewer	Bet. Lane 36 & Florance St. (56.9m, 150mm, 1940)	1940	150	56.9	$10,393
15756	Cootamundra Sewer	Bet. Lane 27 & Murray St. (55.9m, 150mm, 1932)	1932	150	55.9	$10,211
15758	Cootamundra Sewer	Bet. Lane 31 & Thomp. St. (20.3m, 150mm, 1932)	1932	150	20.3	$3,708
15759	Cootamundra Sewer	Bet. Lane 32 & Thomp. St. (20m, 150mm, 1932)	1932	150	20.0	$3,653
15760	Cootamundra Sewer	Bet. Lane 32 & Thomp. St. (32m, 150mm, 1932)	1932	150	32.0	$5,845
15761	Cootamundra Sewer	Bet. Lane 34 & Victoria Pde (67.1m, 150mm, 1940)	1940	150	67.1	$12,256
15750	Cootamundra Sewer	Bet. Lane 13 & Queen St. (78.5m, 150mm, 1932)	1932	150	78.5	$14,339
15751	Cootamundra Sewer	Bet. Lane 21 & Lane 19 (37.3m, 230mm, 1940)	1940	230	37.3	$7,195
15752	Cootamundra Sewer	Bet. Lane 21 And Cowong St. (46.3m, 150mm, 1940)	1940	150	46.3	$8,457
15753	Cootamundra Sewer	Bet. Lane 22 & Warren St. (22m, 150mm, 1940)	1940	150	22.0	$4,019
15754	Cootamundra Sewer	Bet. Lane 23 & Warren St. (35.1m, 150mm, 1940)	1940	150	35.1	$6,411
15755	Cootamundra Sewer	Bet. Lane 24 & Hovell St. (56.2m, 150mm, 1932)	1932	150	56.2	$10,265
15744	Cootamundra Sewer	Bet. Justin & Odonnell St. (17.7m, 150mm, 1932)	1932	150	17.7	$3,233
15745	Cootamundra Sewer	Bet. Justin & Odonnell St. (28.1m, 150mm, 1932)	1932	150	28.1	$5,133
15746	Cootamundra Sewer	Bet. Justin & Odonnell St. (74.1m, 150mm, 1932)	1932	150	74.1	$13,535
15747	Cootamundra Sewer	Bet. Justin & Odonnell St. (80.9m, 150mm, 1932)	1932	150	80.9	$14,777
15748	Cootamundra Sewer	Bet. Lane 13 & Queen St. (24.4m, 150mm, 1932)	1932	150	24.4	$4,457
15749	Cootamundra Sewer	Bet. Lane 13 & Queen St. (52.2m, 150mm, 1932)	1932	150	52.2	$9,535
15739	Cootamundra Sewer	Bet. John & Richard St. (13.7m, 150mm, 1950)	1950	150	13.7	$2,502
15740	Cootamundra Sewer	Bet. John & Richard St. (30.8m, 150mm, 1950)	1950	150	30.8	$5,626
15741	Cootamundra Sewer	Bet. John & Richards St. (10m, 150mm, 1950)	1950	150	10.0	$1,827
15742	Cootamundra Sewer	Bet. John & Richards St. (30m, 150mm, 1950)	1950	150	30.0	$5,480
15743	Cootamundra Sewer	Bet. John & Richards St. (40m, 150mm, 1950)	1950	150	40.0	$7,306
15726	Cootamundra Sewer	Bet. Hurley & Mackay St. (56m, 150mm, 1938)	1938	150	56.0	$10,229
15727	Cootamundra	Bet. Hurley & Mackay St. (66m, 150mm,	1938	150	66.0	$12,056

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer	1938)				
15728	Cootamundra Sewer	Bet. Hurley & Mackay St. (85.6m, 150mm, 1938)	1938	150	85.6	$15,636
15729	Cootamundra Sewer	Bet. Hurley & Mackay St.2 (85.6m, 150mm, 1938)	1938	150	85.6	$15,636
15720	Cootamundra Sewer	Bet. Hurley & Francis St. (68.3m, 150mm, 1938)	1938	150	68.3	$12,476
15721	Cootamundra Sewer	Bet. Hurley & Mackay St. (24.7m, 150mm, 1938)	1938	150	24.7	$4,512
15722	Cootamundra Sewer	Bet. Hurley & Mackay St. (30.9m, 150mm, 1938)	1938	150	30.9	$5,644
15723	Cootamundra Sewer	Bet. Hurley & Mackay St. (34m, 150mm, 1938)	1938	150	34.0	$6,210
15724	Cootamundra Sewer	Bet. Hurley & Mackay St. (35.2m, 150mm, 1938)	1938	150	35.2	$6,430
15725	Cootamundra Sewer	Bet. Hurley & Mackay St. (54.9m, 150mm, 1938)	1938	150	54.9	$10,028
15719	Cootamundra Sewer	Bet. Hurley & Francis St. (140.6m, 150mm, 1938)	1938	150	140.6	$25,682
15708	Cootamundra Sewer	Bet. Hovell & Sutton St. (27.7m, 150mm, 1932)	1932	150	27.7	$5,060
15709	Cootamundra Sewer	Bet. Hovell & Sutton St. (31m, 150mm, 1932)	1932	150	31.0	$5,662
15710	Cootamundra Sewer	Bet. Hovell & Sutton St. (53m, 150mm, 1932)	1932	150	53.0	$9,681
15711	Cootamundra Sewer	Bet. Hovell & Sutton St. (62m, 150mm, 1932)	1932	150	62.0	$11,325
15712	Cootamundra Sewer	Bet. Hovell & Sutton St.2 (62m, 150mm, 1932)	1932	150	62.0	$11,325
15698	Cootamundra Sewer	Bet. Hay & Murray St. (18.8m, 150mm, 1932)	1932	150	18.8	$3,434
15674	Cootamundra Sewer	Bet. Doidge & Betts St. (53.4m, 150mm, 1940)	1940	150	53.4	$9,754
15675	Cootamundra Sewer	Bet. Doidge & Betts St. (59.2m, 150mm, 1940)	1940	150	59.2	$10,813
15673	Cootamundra Sewer	Bet. Doidge & Betts St. (48.5m, 150mm, 1940)	1940	150	48.5	$8,859
15657	Cootamundra Sewer	Bet. Cowong & Florance St. (45m, 150mm, 1940)	1940	150	45.0	$8,220
15658	Cootamundra Sewer	Bet. Cowong & White St. (18.7m, 150mm, 1940)	1940	150	18.7	$3,416
15652	Cootamundra Sewer	Bet. Cowcum. & Lawre. St. (20m, 150mm, 1950)	1950	150	20.0	$3,653
15653	Cootamundra Sewer	Bet. Cowcum. & Lawre. St. (24m, 150mm, 1950)	1950	150	24.0	$4,384
15654	Cootamundra Sewer	Bet. Cowcum. & Lawre. St. (28m, 150mm, 1950)	1950	150	28.0	$5,114
15655	Cootamundra Sewer	Bet. Cowong & Florance St. (21.5m, 150mm, 1940)	1940	150	21.5	$3,927
15644	Cootamundra Sewer	Bet. Cowcu. & Francis St. (24.5m, 150mm, 1938)	1938	150	24.5	$4,475
15645	Cootamundra Sewer	Bet. Cowcu. & Francis St. (74m, 150mm, 1938)	1938	150	74.0	$13,517
15646	Cootamundra Sewer	Bet. Cowcu. & Lawren. St . (69.6m, 150mm, 1938)	1938	150	69.6	$12,713
15647	Cootamundra Sewer	Bet. Cowcu. & Lawren. St . (71.9m, 150mm, 1938)	1938	150	71.9	$13,133
15639	Cootamundra Sewer	Bet. Cooper St. & Lane 31 (56.2m, 150mm, 1932)	1932	150	56.2	$10,265
15635	Cootamundra Sewer	Bet. Centen. Ave & Parker St. (53.2m, 150mm, 1938)	1938	150	53.2	$9,718
15636	Cootamundra Sewer	Bet. Centen. Ave & Thomp. St. (70.1m, 230mm, 1938)	1938	230	70.1	$13,522

ams_num	town	Item_name	yr_built	diam	length	Renewal
15637	Cootamundra Sewer	Bet. Chamen & Parker St. (76.1m, 150mm, 1932)	1932	150	76.1	$13,900
15621	Cootamundra Sewer	Bet. Bradman / Rinkin St. (36m, 150mm, 1950)	1950	150	36.0	$6,576
15617	Cootamundra Sewer	Bet. Bradman & Rinkin St. (68.1m, 150mm, 1950)	1950	150	68.1	$12,439
15618	Cootamundra Sewer	Bet. Bradman & Rinkin St. (92.4m, 150mm, 1950)	1950	150	92.4	$16,878
15619	Cootamundra Sewer	Bet. Bradman & Rinkin St. (96.2m, 150mm, 1950)	1950	150	96.2	$17,572
15607	Cootamundra Sewer	Bet. Berth. St. & Lane 35 (46.1m, 150mm, 1940)	1940	150	46.1	$8,421
15608	Cootamundra Sewer	Bet. Berth. St. & Lane 36 (53.4m, 230mm, 1940)	1940	230	53.4	$10,300
15609	Cootamundra Sewer	Bet. Berth. St. & Showgr. (60m, 150mm, 1950)	1950	150	60.0	$10,960
15581	Cootamundra Sewer	Bet. Adams & Morris St. (60.3m, 150mm, 1932)	1932	150	60.3	$11,014
15582	Cootamundra Sewer	Bet. Adams & Morris St. (61.4m, 150mm, 1932)	1932	150	61.4	$11,215
15583	Cootamundra Sewer	Bet. Adams & Odonnell St. (58.4m, 230mm, 1932)	1932	230	58.4	$11,265
15576	Cootamundra Sewer	Bet. Adams & Morris St. (23.9m, 150mm, 1932)	1932	150	23.9	$4,366
15577	Cootamundra Sewer	Bet. Adams & Morris St. (28.7m, 150mm, 1932)	1932	150	28.7	$5,242
15578	Cootamundra Sewer	Bet. Adams & Morris St. (3.3m, 150mm, 1932)	1932	150	3.3	$603
15579	Cootamundra Sewer	Bet. Adams & Morris St. (52m, 150mm, 1932)	1932	150	52.0	$9,498
15580	Cootamundra Sewer	Bet. Adams & Morris St. (55.8m, 150mm, 1932)	1932	150	55.8	$10,192
15569	Cootamundra Sewer	Bet Hovell & Sutton St. (44.4m, 150mm, 1932)	1932	150	44.4	$8,110
15570	Cootamundra Sewer	Bet Hovell & Sutton St. (67.8m, 150mm, 1932)	1932	150	67.8	$12,384
15571	Cootamundra Sewer	Bet Hovell & Sutton St. (70.4m, 150mm, 1932)	1932	150	70.4	$12,859
15572	Cootamundra Sewer	Bet Hovell & Sutton St. (71.6m, 150mm, 1932)	1932	150	71.6	$13,078
15573	Cootamundra Sewer	Bet Morris & Temora St. (42.4m, 150mm, 1932)	1932	150	42.4	$7,745
15574	Cootamundra Sewer	Bet Morris & Temora St. (45.1m, 150mm, 1932)	1932	150	45.1	$8,238
15563	Cootamundra Sewer	Bet Bapaume St.& Railway (48.8m, 150mm, 1945)	1945	150	48.8	$8,914
15564	Cootamundra Sewer	Bet Bapaume St.& Railway (67.1m, 150mm, 1945)	1945	150	67.1	$12,256
15565	Cootamundra Sewer	Bet Hovell & Sutton St. (26.2m, 150mm, 1932)	1932	150	26.2	$4,786
15566	Cootamundra Sewer	Bet Hovell & Sutton St. (34.9m, 150mm, 1932)	1932	150	34.9	$6,375
15567	Cootamundra Sewer	Bet Hovell & Sutton St. (40.1m, 150mm, 1932)	1932	150	40.1	$7,325
15568	Cootamundra Sewer	Bet Hovell & Sutton St. (41.6m, 150mm, 1932)	1932	150	41.6	$7,599
15556	Cootamundra Sewer	Barnes St. South (73.6m, 150mm, 1932)	1932	150	73.6	$13,444
15557	Cootamundra Sewer	Baths Frontage (20m, 150mm, 1932)	1932	150	20.0	$3,653
15558	Cootamundra Sewer	Behind S&C Club (57.8m, 300mm, 1932)	1932	300	57.8	$12,589
15560	Cootamundra	Berthong St. / Pinkerton Rd. (29.6m, 150mm,	1950	150	29.6	$5,407

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer	1950)				
15561	Cootamundra Sewer	Berthong St. / Pinkerton Rd. (55.9m, 150mm, 1950)	1950	150	55.9	$10,211
15550	Cootamundra Sewer	Apex Park (63m, 450mm, 1932)	1932	450	63.0	$23,001
15551	Cootamundra Sewer	Barnes St. / Yass Rd. (63.6m, 150mm, 1932)	1932	150	63.6	$11,617
15552	Cootamundra Sewer	Barnes St. Midway (44.4m, 150mm, 1932)	1932	150	44.4	$8,110
15553	Cootamundra Sewer	Barnes St. Midway (52.7m, 150mm, 1932)	1932	150	52.7	$9,626
15554	Cootamundra Sewer	Barnes St. Midway (66.7m, 150mm, 1932)	1932	150	66.7	$12,183
15555	Cootamundra Sewer	Barnes St. North (60m, 150mm, 1932)	1932	150	60.0	$10,960
15549	Cootamundra Sewer	Apex Park (55.8m, 400mm, 1932)	1932	400	55.8	$18,946
15537	Cootamundra Sewer	Adams / Thopmpson St. (80.2m, 230mm, 1932)	1932	230	80.2	$15,470
15538	Cootamundra Sewer	Adams St / Congou St. (46.3m, 230mm, 1932)	1932	230	46.3	$8,931
15539	Cootamundra Sewer	Adams St / Congou St. (79.1m, 230mm, 1932)	1932	230	79.1	$15,258
15540	Cootamundra Sewer	Adams St / Crown St. (43.1m, 230mm, 1932)	1932	230	43.1	$8,314
15541	Cootamundra Sewer	Adams St / Merle Ave. (82.6m, 230mm, 1932)	1932	230	82.6	$15,933
15531	Cootamundra Sewer	Adams / Parker St. (26.7m, 230mm, 1932)	1932	230	26.7	$5,150
15532	Cootamundra Sewer	Adams / Parker St. (52.5m, 230mm, 1932)	1932	230	52.5	$10,127
15533	Cootamundra Sewer	Adams / Parker St. (72m, 230mm, 1932)	1932	230	72.0	$13,888
15534	Cootamundra Sewer	Adams / Sutton St. (53.6m, 230mm, 1932)	1932	230	53.6	$10,339
15535	Cootamundra Sewer	Adams / Sutton St. (71.3m, 230mm, 1932)	1932	230	71.3	$13,753
15536	Cootamundra Sewer	Adams / Thopmpson St. (67.4m, 230mm, 1932)	1932	230	67.4	$13,001
15525	Cootamundra Sewer	Adams / Cooper St. (80.2m, 230mm, 1932)	1932	230	80.2	$15,470
15526	Cootamundra Sewer	Adams / Hay St. (59.2m, 230mm, 1932)	1932	230	59.2	$11,419
15527	Cootamundra Sewer	Adams / Hay St. (70.9m, 230mm, 1932)	1932	230	70.9	$13,676
15528	Cootamundra Sewer	Adams / Hovell St. (84.5m, 150mm, 1932)	1932	150	84.5	$15,435
15529	Cootamundra Sewer	Adams / Murray St. (56.5m, 230mm, 1932)	1932	230	56.5	$10,898
15530	Cootamundra Sewer	Adams / Murray St. (71.6m, 230mm, 1932)	1932	230	71.6	$13,811
15520	Cootamundra Sewer	Across Wallendoon St. (44.5m, 150mm, 1932)	1932	150	44.5	$8,128
15521	Cootamundra Sewer	Across Wallendoon St. (57.5m, 150mm, 1932)	1932	150	57.5	$10,503
15522	Cootamundra Sewer	Across Wallendoon St. (64m, 150mm, 1932)	1932	150	64.0	$11,690
15523	Cootamundra Sewer	Across Wallendoon St. (68.9m, 300mm, 1932)	1932	300	68.9	$15,007
15524	Cootamundra Sewer	Adams / Cooper St. (41.2m, 230mm, 1932)	1932	230	41.2	$7,947
15515	Cootamundra Sewer	Across Rail Line (70.9m, 150mm, 1932)	1932	150	70.9	$12,951

ams_num	town	Item_name	yr_built	diam	length	Renewal
15516	Cootamundra Sewer	Across Thompson St. (45.4m, 400mm, 1932)	1932	400	45.4	$15,415
15517	Cootamundra Sewer	Across To Berthong St. (32.8m, 150mm, 1950)	1950	150	32.8	$5,991
15506	Cootamundra Sewer	Across Mackay St. (69.2m, 400mm, 1932)	1932	400	69.2	$23,496
15507	Cootamundra Sewer	Across Murray St. (29.4m, 150mm, 1932)	1932	150	29.4	$5,370
15510	Cootamundra Sewer	Across Muttama Creek (72.6m, 150mm, 1932)	1932	150	72.6	$13,261
15511	Cootamundra Sewer	Across Muttama Creek (80.5m, 150mm, 1932)	1932	150	80.5	$14,704
15500	Cootamundra Sewer	Across Hume St. (73.3m, 150mm, 1940)	1940	150	73.3	$13,389
15501	Cootamundra Sewer	Across Hurley St. (90m, 230mm, 1938)	1938	230	90.0	$17,360
15502	Cootamundra Sewer	Across Lawrence St. (73.6m, 150mm, 1938)	1938	150	73.6	$13,444
15504	Cootamundra Sewer	Across Mackay St (56m, 150mm, 1932)	1932	150	56.0	$10,229
15505	Cootamundra Sewer	Across Mackay St. (63.8m, 150mm, 1932)	1932	150	63.8	$11,654
15494	Cootamundra Sewer	Across Creek (78.7m, 400mm, 1932)	1932	400	78.7	$26,722
15496	Cootamundra Sewer	Across Gundagai Rd. (82.5m, 230mm, 1940)	1940	230	82.5	$15,913
15497	Cootamundra Sewer	Across Hovell St. (31.2m, 150mm, 1932)	1932	150	31.2	$5,699
15498	Cootamundra Sewer	Across Hovell St. (76.8m, 150mm, 1932)	1932	150	76.8	$14,028
15499	Cootamundra Sewer	Across Hume St. (34.9m, 150mm, 1940)	1940	150	34.9	$6,375
15491	Cootamundra Sewer	Across Cowcumbala St. (60.9m, 150mm, 1938)	1938	150	60.9	$11,124
15492	Cootamundra Sewer	Across Creek (56.6m, 300mm, 1932)	1932	300	56.6	$12,328
15493	Cootamundra Sewer	Across Creek (77.1m, 300mm, 1932)	1932	300	77.1	$16,793
16401	Cootamundra Sewer	North Of Cowcumbala St. (127m, 230mm, 1960)	1960	230	127.0	$24,497
16402	Cootamundra Sewer	North Of Cowcumbala St. (130m, 230mm, 1960)	1960	230	130.0	$25,076
16400	Cootamundra Sewer	North Of Cowcumbala St. (120m, 230mm, 1960)	1960	230	120.0	$23,147
16382	Cootamundra Sewer	Near Betts St. P.Station (108m, 230mm, 1960)	1960	230	108.0	$20,832
16127	Cootamundra Sewer	Lane 2 (18.4m, 150mm, 1960)	1960	150	18.4	$3,361
16128	Cootamundra Sewer	Lane 2 (91.5m, 150mm, 1960)	1960	150	91.5	$16,713
16129	Cootamundra Sewer	Lane 2 (96.7m, 150mm, 1960)	1960	150	96.7	$17,663
16109	Cootamundra Sewer	Lane 1 North (91.5m, 150mm, 1960)	1960	150	91.5	$16,713
16003	Cootamundra Sewer	East Of Barnes St. (17.7m, 150mm, 1960)	1960	150	17.7	$3,233
16004	Cootamundra Sewer	East Of Barnes St. (44.1m, 150mm, 1960)	1960	150	44.1	$8,055
15835	Cootamundra Sewer	Bet. Olney St. & S. Circle (21.3m, 230mm, 1960)	1960	230	21.3	$4,109
15837	Cootamundra Sewer	Bet. Olney St. & S. Circle (54.9m, 230mm, 1960)	1960	230	54.9	$10,590
15734	Cootamundra	Bet. Hurley St. & Southee Circle (43.3m,	1960	230	43.3	$8,352

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer	230mm, 19				
15735	Cootamundra Sewer	Bet. Hurley St. & Southee Circle (50.6m, 230mm, 19	1960	230	50.6	$9,760
15737	Cootamundra Sewer	Bet. Hurley St. & Southee Circle (60m, 230mm, 1960	1960	230	60.0	$11,573
15714	Cootamundra Sewer	Bet. Hurley & Elizab. St. (27.4m, 230mm, 1960)	1960	230	27.4	$5,285
15716	Cootamundra Sewer	Bet. Hurley & Elizab. St. (33.1m, 230mm, 1960)	1960	230	33.1	$6,385
15717	Cootamundra Sewer	Bet. Hurley & Elizab. St. (35.4m, 230mm, 1960)	1960	230	35.4	$6,828
15718	Cootamundra Sewer	Bet. Hurley & Elizab. St. (60.1m, 230mm, 1960)	1960	230	60.1	$11,593
16518	Cootamundra Sewer	West End Of Lawrence St. (21.2m, 150mm, 1960)	1960	150	21.2	$3,872
16519	Cootamundra Sewer	West End Of Lawrence St. (26m, 150mm, 1960)	1960	150	26.0	$4,749
16482	Cootamundra Sewer	Southee School (114m, 150mm, 1960)	1960	150	114.0	$20,823
16483	Cootamundra Sewer	Southee School (24.3m, 150mm, 1960)	1960	150	24.3	$4,439
15975	Cootamundra Sewer	Cowcumbala / Byrne St. (59.2m, 150mm, 1960)	1960	150	59.2	$10,813
15976	Cootamundra Sewer	Cowcumbala / Byrne St. (72.4m, 150mm, 1960)	1960	150	72.4	$13,225
15852	Cootamundra Sewer	Bet. Philip & Meagher St. (35.1m, 150mm, 1960)	1960	150	35.1	$6,411
15853	Cootamundra Sewer	Bet. Philip & Meagher St. (43.6m, 150mm, 1960)	1960	150	43.6	$7,964
15854	Cootamundra Sewer	Bet. Philip & Meagher St. (54.1m, 150mm, 1960)	1960	150	54.1	$9,882
15846	Cootamundra Sewer	Bet. Philip & Cowcum. St. (19.5m, 150mm, 1960)	1960	150	19.5	$3,562
15847	Cootamundra Sewer	Bet. Philip & Cowcum. St. (20m, 150mm, 1960)	1960	150	20.0	$3,653
15848	Cootamundra Sewer	Bet. Philip & Cowcum. St. (21.3m, 150mm, 1960)	1960	150	21.3	$3,891
15849	Cootamundra Sewer	Bet. Philip & Cowcum. St. (23m, 150mm, 1960)	1960	150	23.0	$4,201
15850	Cootamundra Sewer	Bet. Philip & Cowcum. St. (28m, 150mm, 1960)	1960	150	28.0	$5,114
15851	Cootamundra Sewer	Bet. Philip & Cowcum. St. (36.9m, 150mm, 1960)	1960	150	36.9	$6,740
15836	Cootamundra Sewer	Bet. Olney St. & S. Circle (37.6m, 150mm, 1960)	1960	150	37.6	$6,868
15838	Cootamundra Sewer	Bet. Olney St. & Southee Circle (49m, 150mm, 1960)	1960	150	49.0	$8,950
15839	Cootamundra Sewer	Bet. Olney St. & Southee Circle (51.8m, 150mm, 196	1960	150	51.8	$9,462
15807	Cootamundra Sewer	Bet. Meagher / Ursula St. (50.5m, 150mm, 1960)	1960	150	50.5	$9,224
15808	Cootamundra Sewer	Bet. Meagher / Ursula St. (50.6m, 150mm, 1960)	1960	150	50.6	$9,243
15732	Cootamundra Sewer	Bet. Hurley St. & Southee Circle2 (30m, 150mm, 196	1960	150	30.0	$5,480
15733	Cootamundra Sewer	Bet. Hurley St. & Southee Circle (37.4m, 150mm, 19	1960	150	37.4	$6,831
15736	Cootamundra Sewer	Bet. Hurley St. & Southee Circle (50m, 150mm, 1960	1960	150	50.0	$9,133
15730	Cootamundra Sewer	Bet. Hurley St. & Southee Circle (20m, 150mm, 1960	1960	150	20.0	$3,653
15731	Cootamundra Sewer	Bet. Hurley St. & Southee Circle (30m, 150mm, 1960	1960	150	30.0	$5,480

ams_num	town	Item_name	yr_built	diam	length	Renewal
15715	Cootamundra Sewer	Bet. Hurley & Elizab. St. (30m, 150mm, 1960)	1960	150	30.0	$5,480
15686	Cootamundra Sewer	Bet. Elizab. & French St. (30.5m, 150mm, 1960)	1960	150	30.5	$5,571
15687	Cootamundra Sewer	Bet. French & Philip St. (35.1m, 150mm, 1960)	1960	150	35.1	$6,411
15688	Cootamundra Sewer	Bet. French & Philip St. (43m, 150mm, 1960)	1960	150	43.0	$7,854
15680	Cootamundra Sewer	Bet. Donaldson & Rich. St. (14.6m, 150mm, 1960)	1960	150	14.6	$2,667
15681	Cootamundra Sewer	Bet. Donaldson & Rich. St. (40.5m, 150mm, 1960)	1960	150	40.5	$7,398
15682	Cootamundra Sewer	Bet. Elizab. & French St. (15m, 150mm, 1960)	1960	150	15.0	$2,740
15683	Cootamundra Sewer	Bet. Elizab. & French St.2 (15m, 150mm, 1960)	1960	150	15.0	$2,740
15684	Cootamundra Sewer	Bet. Elizab. & French St. (20.7m, 150mm, 1960)	1960	150	20.7	$3,781
15685	Cootamundra Sewer	Bet. Elizab. & French St. (27m, 150mm, 1960)	1960	150	27.0	$4,932
15676	Cootamundra Sewer	Bet. Donald. / Rich. St. (12.8m, 150mm, 1960)	1960	150	12.8	$2,338
15677	Cootamundra Sewer	Bet. Donald. / Rich. St. (21m, 150mm, 1960)	1960	150	21.0	$3,836
15678	Cootamundra Sewer	Bet. Donald. / Rich. St. (80.8m, 150mm, 1960)	1960	150	80.8	$14,759
15679	Cootamundra Sewer	Bet. Donald. / Rich. St. (88.7m, 150mm, 1960)	1960	150	88.7	$16,202
15650	Cootamundra Sewer	Bet. Cowcum & Lawre. St. (64.1m, 150mm, 1960)	1960	150	64.1	$11,709
15651	Cootamundra Sewer	Bet. Cowcum & Lawre. St. (77.4m, 150mm, 1960)	1960	150	77.4	$14,138
15649	Cootamundra Sewer	Bet. Cowcum & Lawre. St. (20.7m, 150mm, 1960)	1960	150	20.7	$3,781
15632	Cootamundra Sewer	Bet. Byrne / Poole St. (47.3m, 150mm, 1960)	1960	150	47.3	$8,640
15633	Cootamundra Sewer	Bet. Byrne / Poole St. (8.5m, 150mm, 1960)	1960	150	8.5	$1,553
15634	Cootamundra Sewer	Bet. Byrne / Poole St. (90.3m, 150mm, 1960)	1960	150	90.3	$16,494
15626	Cootamundra Sewer	Bet. Byrne & Donaldson St. (41.2m, 150mm, 1960)	1960	150	41.2	$7,526
15627	Cootamundra Sewer	Bet. Byrne & Donaldson St. (52m, 150mm, 1960)	1960	150	52.0	$9,498
15628	Cootamundra Sewer	Bet. Byrne & Donaldson St. (62m, 150mm, 1960)	1960	150	62.0	$11,325
15629	Cootamundra Sewer	Bet. Byrne / Poole St. (16.7m, 150mm, 1960)	1960	150	16.7	$3,050
15630	Cootamundra Sewer	Bet. Byrne / Poole St. (27.6m, 150mm, 1960)	1960	150	27.6	$5,041
15631	Cootamundra Sewer	Bet. Byrne / Poole St. (37.8m, 150mm, 1960)	1960	150	37.8	$6,905
15622	Cootamundra Sewer	Bet. Byrne & Donaldson St. (19m, 150mm, 1960)	1960	150	19.0	$3,471
15623	Cootamundra Sewer	Bet. Byrne & Donaldson St. (26.6m, 150mm, 1960)	1960	150	26.6	$4,859
15624	Cootamundra Sewer	Bet. Byrne & Donaldson St. (30m, 150mm, 1960)	1960	150	30.0	$5,480
15625	Cootamundra Sewer	Bet. Byrne & Donaldson St. (33.2m, 150mm, 1960)	1960	150	33.2	$6,064
15593	Cootamundra Sewer	Bet. Albert & French St. (26m, 150mm, 1960)	1960	150	26.0	$4,749
15594	Cootamundra	Bet. Albert & French St. (56m, 150mm, 1960)	1960	150	56.0	$10,229

ams_num	town	Item_name	yr_built	diam	length	Renewal
	Sewer					
15595	Cootamundra Sewer	Bet. Albert & French St. (62m, 150mm, 1960)	1960	150	62.0	$11,325
15587	Cootamundra Sewer	Bet. Albert & Elizab. St. (54.9m, 150mm, 1960)	1960	150	54.9	$10,028
15588	Cootamundra Sewer	Bet. Albert & French St. (15.2m, 150mm, 1960)	1960	150	15.2	$2,776
15589	Cootamundra Sewer	Bet. Albert & French St. (18.9m, 150mm, 1960)	1960	150	18.9	$3,452
15590	Cootamundra Sewer	Bet. Albert & French St. (19.8m, 150mm, 1960)	1960	150	19.8	$3,617
15591	Cootamundra Sewer	Bet. Albert & French St.2 (19.8m, 150mm, 1960)	1960	150	19.8	$3,617
15592	Cootamundra Sewer	Bet. Albert & French St. (20m, 150mm, 1960)	1960	150	20.0	$3,653
15585	Cootamundra Sewer	Bet. Albert & Elizab. St. (25m, 150mm, 1960)	1960	150	25.0	$4,567
15586	Cootamundra Sewer	Bet. Albert & Elizab. St. (29.5m, 150mm, 1960)	1960	150	29.5	$5,388
16883	Gundagai Sewer	Boy'S Club-11-12 (17m, 225mm, 1972)	1972	225	17.0	$3,279
17418	Gundagai Sewer	Royal Well-82-82A (59.9m, 150mm, 1960)	1960	150	59.9	$10,941
15996	Cootamundra Sewer	Cutler Ave. / Lane 15 (68m, 230mm, 1965)	1965	230	68.0	$13,117
15995	Cootamundra Sewer	Cutler / Northcott Ave. (73m, 230mm, 1965)	1965	230	73.0	$14,081
15670	Cootamundra Sewer	Bet. Cutler / Northcott Ave. (62.7m, 230mm, 1965)	1965	230	62.7	$12,094
15672	Cootamundra Sewer	Bet. Cutler / Northcott Ave. (79.5m, 230mm, 1965)	1965	230	79.5	$15,335
Total						**$10,004,864**

16.2 Mechanical Components

ams_num	town	Item_name	yr_built	type/material	Condition	Renewal
17833	Cootamundra Sewer	SPS 1 Betts St: Pump Well Mechanical Components	1992	Wet / Dry Pump Well	7	$195,000
17776	Gundagai Sewer	SPS Boys Club: Wet Pump Well - Valves		Valves	6	$7,800
17788	Gundagai Sewer	SPS McDonalds: Wet Pump Well - Valves	1990	Valves	6	$7,800
17779	Gundagai Sewer	SPS Boys Club: Coupled Motor / Centrifugal Pump 1		Pump	3	$5,850
17780	Gundagai Sewer	SPS Boys Club: Coupled Motor / Centrifugal Pump 2		Pump	3	$5,850
17791	Gundagai Sewer	SPS McDonalds: Coupled Motor / Centrifugal Pump 1	1990	Pump	3	$5,850
17792	Gundagai Sewer	SPS McDonalds: Coupled Motor / Centrifugal Pump 2	1990	Pump	3	$5,850
17813	Gundagai Sewer	SPS Feeder Primary School: Coupled Motor / Positive Displacement Pump 1		Pump	3	$3,250
17814	Gundagai Sewer	SPS Feeder Primary School: Coupled Motor / Positive Displacement Pump 2		Pump	3	$3,250
17856	Cootamundra Sewer	SPS 2 Strikers: Coupled Motor / Centrifugal Pump 1	1990	Pump	3	$5,850

ams_num	town	Item_name	yr_built	type/material	Condition	Renewal
17857	Cootamundra Sewer	SPS 2 Strikers: Coupled Motor / Centrifugal Pump 2	1990	Pump	3	$5,850
17865	Cootamundra Sewer	SPS 3 King Dr: Pump Well Dosing System	2006	Dosing System	4	$11,050
17870	Cootamundra Sewer	SPS 3 King Dr: Coupled Motor / Centrifugal Pump 1	2006	Pump	3	$8,450
17871	Cootamundra Sewer	SPS 3 King Dr: Coupled Motor / Centrifugal Pump 2	2006	Pump	3	$8,450
17883	Cootamundra Sewer	SPS 4 Airport: Coupled Motor / Centrifugal Pump 1	2007	Pump	3	$3,250
17884	Cootamundra Sewer	SPS 4 Airport: Coupled Motor / Centrifugal Pump 2	2007	Pump	3	$3,250
17817	Gundagai Sewer	SPS Royal: Pump Well Mechanical Components	1937	Wet / Dry Pump Well	4	$10,400
17826	Gundagai Sewer	SPS Royal: Pump Well Mechanical Components		Wet / Dry Pump Well	4	$23,400
Total						**$320,450**

16.3 Treatment Plant Renewals

ams_num	town	Item_name	yr_built	type/material	Condition	Renewal
17917	Cootamundra Sewer	Biological Treatment: Floating Mixing Assembly		Mixers	7	$48,100
17934	Cootamundra Sewer	Chemical Dosing: Chemical Dosing Pump		Pump	5	$14,300
17936	Cootamundra Sewer	Chemical Dosing: Chemical Storage Tank Mechanical		Tank	5	$45,500
17946	Cootamundra Sewer	Preliminary Treatment: Auger - Stainless Steel	2006	Inlet works	5	$78,000
17947	Cootamundra Sewer	Preliminary Treatment: Local Control Switchboard	2006	Inlet works	5	$16,250
17919	Cootamundra Sewer	Biological Treatment: Mechnical WAS		WAS	4	$15,600
17923	Cootamundra Sewer	Sludge Dewatering: Sludge Lagoons - Electrical		Lagoon	5	$15,600
Total						**$233,350**

17. Appendix B: Upgrade / New Capital Works Program

10 Year Capital Works Program	2016/17	2017/18	2018/19	2019/20
Gundagai Sewerage Treatment Plant	10,125,000	2,875,000		
TOTALS	**10,125,000**	**2,875,000**	**0**	**0**

18. Appendix C: 10 Year Financial Plan (2018 $,000)

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Income											
Interest	101	127	123	128	163	220	159	165	173	170	153
Administration	1	1	1	1	1	1	1	2	2	2	1
Developer Contributions	8	8	14	14	14	14	10	10	0	0	9
Sewer Connection Fees	2	2	2	2	2	2	2	2	2	2	2
User Charges	16	16	17	18	18	19	20	20	21	22	19
Sewer Access Charges	1,961	2,009	2,069	2,131	2,195	2,261	2,329	2,398	2,470	2,544	2,237
Sewer Usage Charges	653	665	685	706	727	749	771	794	818	843	741
Grant Funding - Gundagai STP	10,125	2,875	0	0	0	0	0	0	0	0	1,300
Total Income	**12,866**	**5,703**	**2,911**	**2,999**	**3,120**	**3,265**	**3,292**	**3,392**	**3,486**	**3,583**	**4,462**
Operations											
Administration	974	1,013	1,053	1,094	1,138	1,183	1,230	1,279	1,329	1,382	1,167
Internal Charges	31	32	34	36	39	41	43	44	45	47	39
Cleaning	19	20	20	21	21	21	22	22	23	23	21
Plant and equipment	5	5	5	5	5	5	5	5	6	6	5
Energy costs	145	153	160	168	177	182	191	201	211	221	181
Treatment Chemicals	16	16	17	17	17	18	18	19	19	19	18
Total Operations	**1,190**	**1,238**	**1,289**	**1,342**	**1,397**	**1,451**	**1,509**	**1,570**	**1,633**	**1,698**	**1,432**
Maintenance											
Mains maintenance	516	527	538	549	561	573	585	597	609	622	568
Building maintenance	7	7	7	7	7	8	8	8	8	8	8
Grounds maintenance	37	38	39	40	41	42	44	45	46	48	42
Pumping Stations Operations & Maintenance	40	41	42	43	44	44	45	46	47	48	44
Treatment Operations & Maintenance	206	210	214	219	223	228	233	238	243	248	226
Total Maintenance	**806**	**823**	**840**	**858**	**876**	**895**	**914**	**934**	**954**	**974**	**887**
Renewals											
Sewer Reticulation	638	848	600	875	628	904	657	672	905	703	743
Mechanical	0	0	0	0	0	420	0	0	0	0	42
Civil	0	9	0	10	0	10	0	0	0	0	3
Total Renewal	**638**	**857**	**600**	**885**	**628**	**1,334**	**657**	**672**	**905**	**703**	**788**
Upgrade / Expansion											
Sewerage Treatment Plant renewal	10,125	2,875	0	0	0	0	0	0	0	0	1,300
Total Upgrade / Expansion	**10,125**	**2,875**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,300**
Total Expenditure	**12,759**	**5,792**	**2,729**	**3,084**	**2,901**	**3,679**	**3,080**	**3,175**	**3,491**	**3,376**	**4,407**

Cootamundra-Gundagai Regional Council

Stormwater Asset Management Plan

Draft version 1.2 July 2018

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Document Control					
Rev No	**Date**	**Revision Details**	**Author**	**Verifier**	**Approver**
1	31 May 2018	Draft	M Brearley & J Hansen		
1.2	July 2018	Draft Version 1.2 – Minor amendments following workshop with staff and Councillors	M Brearley & J Hansen		

1. Executive Summary

Council's intention is to provide a stormwater network that is serviced and maintained to a level which reflects the community's expectations and operates in a manner that is both functional and cost effective. The urban stormwater network had a fair value of **$17.133 million** on the 30 June 2017.

This plan assists Council in the decision making process and is presented at a high level to provide key information that can used in the determination of levels of service and funding required. The following table identifies the asset categories in this plan, the ten (10) year average costs and any funding gap between the available renewal budget and predicted renewal requirements.

Table 1.1: Drainage Asset Portfolio Overview (2018 $,000)

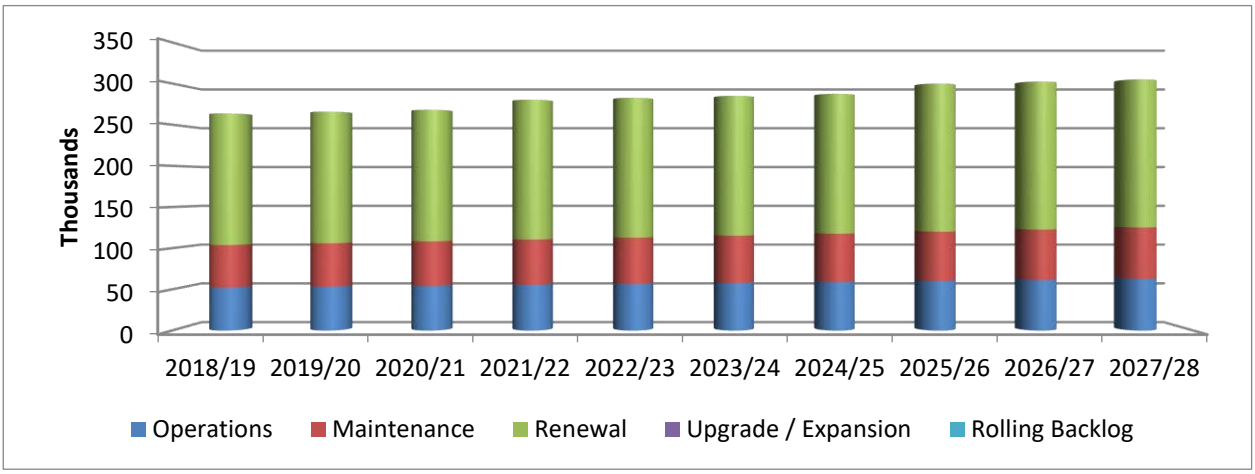
Asset	Fair Value	Operation & Maintenance	Renewal	Upgrade & New	Funding Gap	Backlog Year 1	Backlog Year 10
Culverts	151	0	-	-	0	0	0
GPTs	219	31	-	-	0	0	0
Headwalls	11	0	-	-	0	0	0
Pipes	12,936	26	170	-	0	0	0
Pits	3,061	0	-	-	2	0	24
Other	755	0	-	-	0	0	0
Total	**17,133**	**57**	**170**	**-**	**0**	**0**	**0**

1. *Operations & Maintenance, Renewal and Upgrade & New Figures are the 10-year annual average amounts indexed by 2.0% p.a.*
2. *Funding Gap is the gap between required renewal expenditure and the renewal budget, averaged out over 10 years.*

The following figure identifies the proposed expenditure over the next 10 years together with the backlog in any one year if one exists. The projected budget amounts are extracted from Council's 10 year Long Term Financial Plan.

Even though there are many known deficiencies in the stormwater network, no backlog is identified over the ten year life of the plan. This is due to limitations with the accuracy of the asset register, an in particular very limited information on the condition of stormwater assets. The plan recommends that new asset data be collected, including a condition assessment of the network.

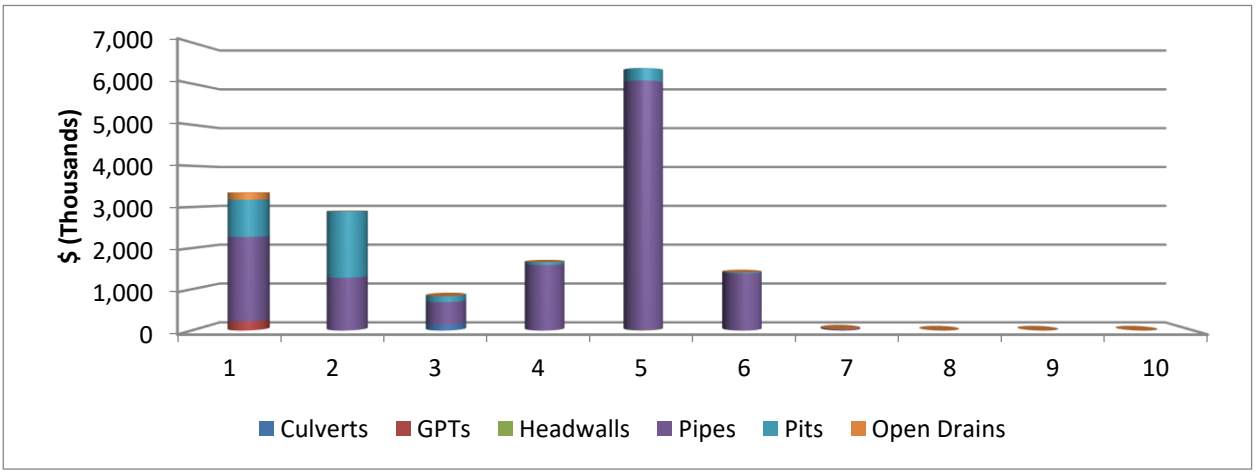
Figure 1.1: What will we spend over the next 10 years in current dollars (2018 $,000)?



The current condition of our assets is shown in the following graph based on the value of each asset in each of 10 conditions ranging from 1 to 10, with 1 being near new and 10 as a completely failed asset. The condition information is

based on remaining useful lives and does not reflect a comprehensive condition assessment. Many Council stormwater pipes are old and anecdotal advice from operational staff suggests that there is a cohort of pipelines in very poor condition. CCTV inspections will be undertaken to assess condition and to plan pipe cleaning activities. It is strongly recommended that Council seek to improve the stormwater asset register.

Figure 1.2: What condition are our assets in ($,000)?



A comprehensive report has been prepared that identifies service deficiencies in stormwater and recommends priorities for capital upgrades. The priority schedules are included as Appendix C.

The process of managing our stormwater assets is one of continually improving the knowledge Council has including maintaining up to date asset registers, condition ratings, and the cost of work on the asset and the rate at which assets deteriorate and reach their intervention level.

Concluding Remarks

The quality of data used to develop this Stormwater Asset Management Plan is not robust and hence the outcomes of the Plan are not reliable. The financial modelling indicates that there is no backlog, however feedback from staff and customers indicates that this is not the case. Council will be implementing a program of CCTV inspection of pipes to assess the condition of assets, and will be implementing a pipe maintenance and renewal program. Section 13 contains details of improvement actions.

2. Strategic Objectives

Council operates and maintains the urban stormwater network to achieve the following strategic objectives.

1. Protect private property from flooding from public roads, public reserve areas and neighbouring private property where inter-allotment drainage is installed.
2. Ensure safe and trafficable driving conditions in wet weather to a defined and cost effective level of service.
3. Reduce stormwater pollution through community education and the provision of appropriate water quality improving infrastructure
4. Ensure that these assets are managed to deliver the requirements of Council's Asset Management Policy and Strategic Asset Management Plan.

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

To assist in the delivery of the objectives in this plan, a number of key documents and 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
Asset Management Policy	How we manage assets
Asset Management System (Civica Authority)	Electronic system that contains the asset register, condition ratings and used to model future renewals
GIS	Geographical information system that produces maps of assets
Australian Rainfall and Runoff	Industry standard for stormwater infrastructure design.

The Cootamundra-Gundagai Regional Council CSP outcomes supported by the Stormwater AMP include:

- Objective 3.2c - Deliver and maintain infrastructure to meet the current and future needs of our community.
- Objective 3.2d - Develop and implement strategies to deliver safe and accessible local roads, bridges, footpaths and parking.

3. Services Provided & Classification

Council provides the Cootamundra-Gundagai Region with a stormwater network and treatment devices to manage stormwater runoff in the urban areas. The failure of pipes, pits or open channels can be categorised into either structural failure, capacity failure or a combination of both.

The criticality, in relation to structural failure, would be considered extreme if there was an immediate threat to life or property. Highly Critical situations may arise when there is a structural failure of a larger pipeline within a major roadway or adjacent to a building. Lower criticality may be attributed to a smaller pipeline that is located in an urban residential zone that can be easily isolated and repaired. Highly Critical Infrastructure is often located in built up areas, such as the CBD, with failure resulting in major disruption to the community.

Capacity issue can arise, whereby the pipeline or channel cannot perform to its designed capacity. This may be due to a number of issues, such as tree root intrusions, sediment or gross pollutant build up, structural failure or influence of other utility services or illegal connections protruding into the pipeline.

Traditionally a pipe network is classified into trunk drainage and non-trunk drainage, with trunk drainage having larger capacity to drain the network. A trunk drainage system is one that drains a large area and is critical to the overall drainage scheme of a catchment with any type of failure having a larger impact.

The use of detention basins in upstream catchments aids in the reduction of peak flows and can help in reducing the pressure on overloaded systems that may not have been designed to cater for the larger flows.

Council has broadly classified the stormwater network using a risk management approach. This approach is documented in the document “Priority Infrastructure Project: Stormwater Priority Assessment Report” DRAFT Version 1.1, April 2018 (Brearley & Hansen).

The stormwater assets had a fair value of $17.133 million on the 30 June 2017, and details of the major components are contained in Table 3.1 together with their renewal cost.

Table 3.1: What is provided

Asset Description	Total Quantity	Units	Total Replacement Cost ($)
Pipes	12,432.6	Metres	$12,936,475.46
Culverts	51	Metres	$150,589.08
Headwalls	11	units	$11,386.46
Pits	487	units	$3,061,227.90
Gross Pollutant Traps	5	units	$218,532.00
			$16,378,210.90

4. Levels of Service

One of the basic tenets of sound asset management practice is to provide the level of service the current and future community want and are prepared to pay for, in the most cost effective way (NZ NAMS 2007).

Stormwater assets have been categorised into criticality ratings to assist in the determination of Levels of Service (LOS) which are grouped into:

- **Community LOS** – The Community expects private property to be free of flooding. Community expectation also pertains to levels/widths of flow within gutters as well of pollution and the potential for stormwater harvesting.
- **Technical LOS** – Council has set design criteria for the provision of systems to cater for the minor/major storm events, which are in line with the guidelines set out in Australian Rainfall and Runoff. Council also has a maintenance regime, meaning issues are dealt with under the guidelines of this asset management plan.

Stormwater assets have been categorised to assist in the determination of Levels of Service (LOS). Table 4.1 outlines what the community desires for each asset Category and how Council will deliver it.

Table 4.1: What does the Community want?

The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Key Performance Measure	How Measured
Stormwater drainage network is maintained in **functioning condition**	Council maintains the stormwater drainage network in a suitable condition with blockages minimised	Number of reported incidents of ponding or flooding, during or immediately following a rainfall event, which can be attributed to a pipe or pit blockage are minimised. Customer service requests and maintenance logs.	Analysis of customer service requests and maintenance logs.
The stormwater drainage network is provided where required to provide for collection and disposal of stormwater and **minimise local flooding**	All new developments must contain an underground stormwater system which caters for minor storm events with the provision of safe overland flow paths for the major storm event and have a neutral or beneficial impact on downstream systems. All new developments minimise hardstand areas to limit nuisance water impacts.	All stormwater from the property is disposed of without causing nuisance to other properties by way of connection to Council's existing stormwater drainage system or other suitable arrangements such as easements. For 3 or more dwellings, all roof and surface water drainage shall be designed to provide for conveyance of these flows per AS3500 after considering the Australian Rainfall and Runoff Guidelines, to the appropriate road, public stormwater drainage system or watercourse where approved to do so. Permeable areas are at least 20% of the site.	Stormwater drainage systems installed in new developments are 100% compliant with Council's requirements
	Stormwater is controlled clear of private property improvements without causing environmental harm	Number of reported incidents of nuisance stormwater on private property following a rainfall event minimised.	Analysis of customer service requests and maintenance logs.

The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Key Performance Measure	How Measured
The stormwater drainage network has **adequate capacity** for the collection and disposal for stormwater	The stormwater drainage network meets hydraulic design standards.	Inspection and analysis of stormwater systems where level of service is not met.	Analysis of customer service requests and maintenance logs.
The impact of **mainstream flooding** on **existing developed areas** is reduced by flood mitigation works and measures.	Council is responsible for the investigation, design, construction and maintenance of flood mitigation works, using financial assistance from the Commonwealth and State Governments.	Council has applied for grant funding to prepare floodplain risk management plans.	Flood risk management measures perform as required on the rare occasions that they are needed.
New development on flood prone land is compatible with the flood hazard of the land. New development does not affect flood behaviour or cause an increase in flooding affectation of other developments or the natural environment	Flood protection measures are implemented during the planning and design phase of new development to ensure risk to the community is minimised	Flood prone land is shown on the LEP maps and development of these areas must meet be in accordance with the requirements of Council's Development Control Plan.	An assessment of the impact of flood and proposed flood protection measures is to be carried out and submitted with all applications to develop land mapped as flood prone.

5. Condition of Our Assets

Council maintains a register of stormwater asset data which includes limited information on the condition of stormwater assets. It is proposed that Council collect new asset data, including a condition assessment of the network.

Assets are rated on a 1 (Near New) to 10 (Completely Failed) scale. The condition information is based on remaining useful lives and does not reflect a comprehensive condition assessment. It is not considered reliable. Operational staff advise that many pipes are butt jointed and the joints have been infiltrated by tree roots.

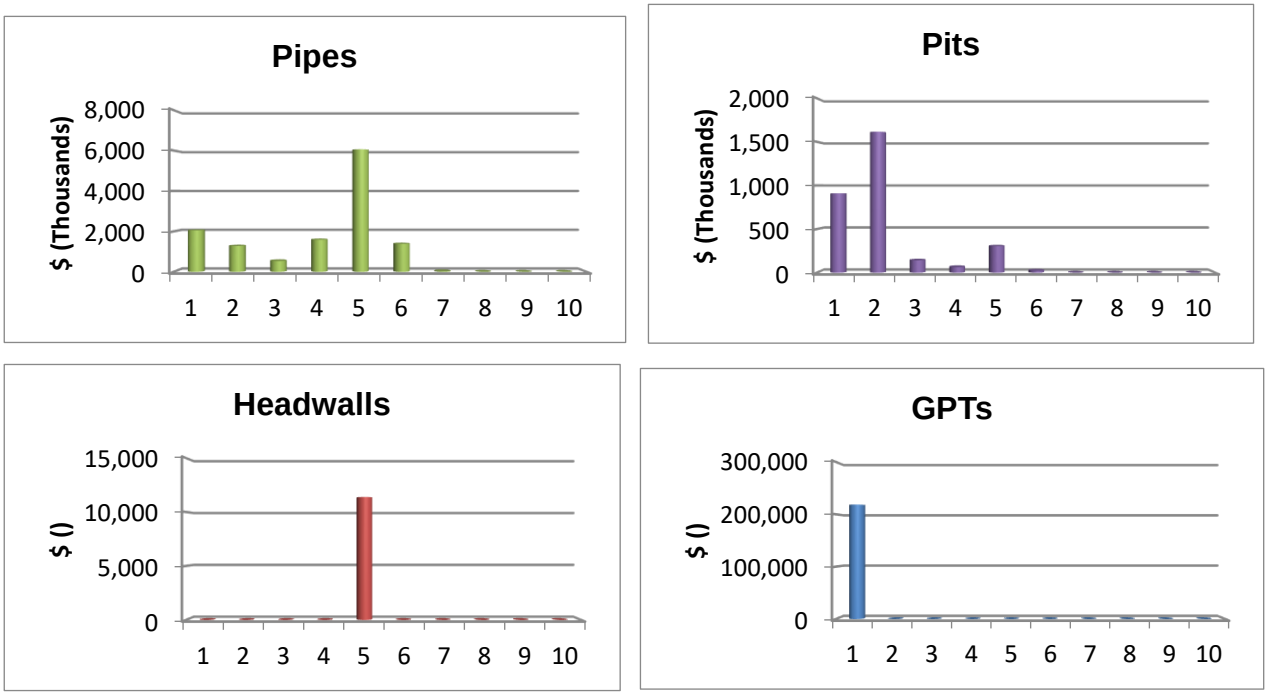
The intent of Council is not to undertake renewal on an asset until it reaches its 'Intervention Level', that is the condition at which the community has determined renewal is required based on the LOS analysis. Typically, assets will be renewed between condition 7 & 9 which ranges from fair/poor to very poor depending on their classification. The intervention level is also related to the criticality of the asset as per the information in table 5.1.

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

Component	Intervention Level	Useful Life (years
Pipes	7	100
Culverts	7	70
Headwalls	7	100
Pits	7	100
Gross Pollutant Traps	7	100

Each asset's condition is maintained in the Asset Register and the graphs below gives the condition profile based on the value of the top 4 valued assets in each condition.

Figure 5.2: What Conditions are our assets in ($0,000)?



6. Operations

Operational activities are those regular activities that are required to continuously provide the service including asset inspection, engagement of internal/external service providers and overheads.

Council will be conducting regular CCTV inspections and reporting of parts of the underground network. It is anticipated that whilst CCTV inspections will focus on older areas, and those identified as getting close to intervention level, a randomised sample of all pipelines across the network is suggested. Newer areas may not require inspection until the pipes are 30 years of age, unless specific problems are identified.

Developing better asset data, and robust condition ratings for buried storm water pipelines should not be an onerous task, if the project is planned well. It is suggested that the condition of gravity pipelines be determined using a CCTV style survey, consisting of cleaning the main and inspecting it using a camera device. It will not be necessary to inspect all pipelines. A sample only need be inspected, using a randomised survey. A sample size of 10-15% of the pipe network (by length) would deliver a reasonably low confidence interval. (i.e. high confidence). Naturally, it would essential to ensure that pipelines in both Cootamundra and Gundagai were inspected.

Following the planned inspection program, results could be grouped, based on construction material and estimated age, to establish the condition of pipelines with those characteristics across the entire network. This information could then be used to improve the data in the asset register, and plan maintenance, such as pipe cleaning, and renewal tasks, with confidence.

Table 6.1: When do we undertake Inspections?

Inspection	Frequency
CCTV	Annual 5% of network
Basins	Annual
Open drains/swales	Annual or after major rainfall events
GPT' s	Annual
Surface Pits	Infrequent – Older pit lids

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 require immediate repair to make it operational again. It may be either planned, where works are programmed in, cyclic in nature or reactive, in response to storm damage or vandalism.

Council carries out routine inspection and maintenance on the stormwater system.

Cleaning – Council cleans blocked stormwater pipes as a reactive maintenance activity. It is proposed to undertake a program of CCTV inspection, which will lead to a planned maintenance program of pipe cleaning and repairs.

Council routinely inspects and cleans its Gross Pollutant Traps, which are designed to collect rubbish and other pollutants that may end up in the stormwater system. The Gross Pollutant Traps help to prevent rubbish and other pollutants from entering our waterways. This work is generally carried out by contractor.

Council regularly cleans stormwater pits and grates to ensure they are free of debris and able to perform to capacity. This is generally done in high activity areas, such as the CBD or in known areas that have large leaf matter build-up from street trees

Council currently cleans open stormwater drains and channels in response to customer requests. It is proposed to undertake a more proactive inspection and drain cleaning program.

Repairs - There is an ongoing maintenance programme for the repair/replacement of stormwater inlet pit and junction pits. Priority is given to critical locations, such as in major roadways.

Inspections -It is planned to implement an ongoing programme of CCTV inspections of parts of the pipe network. The CCTV reports are used to develop rehabilitation/maintenance plans.

Customer Request Management System - Council has a customer service system, which allows residents to report issues and inspections/repairs to be prioritised and carried out.

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

Activity	Expected Timing	Notes
Cleaning of pipes	Annually	Proposed annual inspection and cleaning program
Cleaning of GPT	Annually	Annual inspection and cleaning program
Mowing of swales	Annually	Proposed annual inspection and mowing program
Cleaning of pits	Infrequent	Proposed annual inspection and cleaning program - older pit lids are very hard to lift

Adjusting Levels of Service

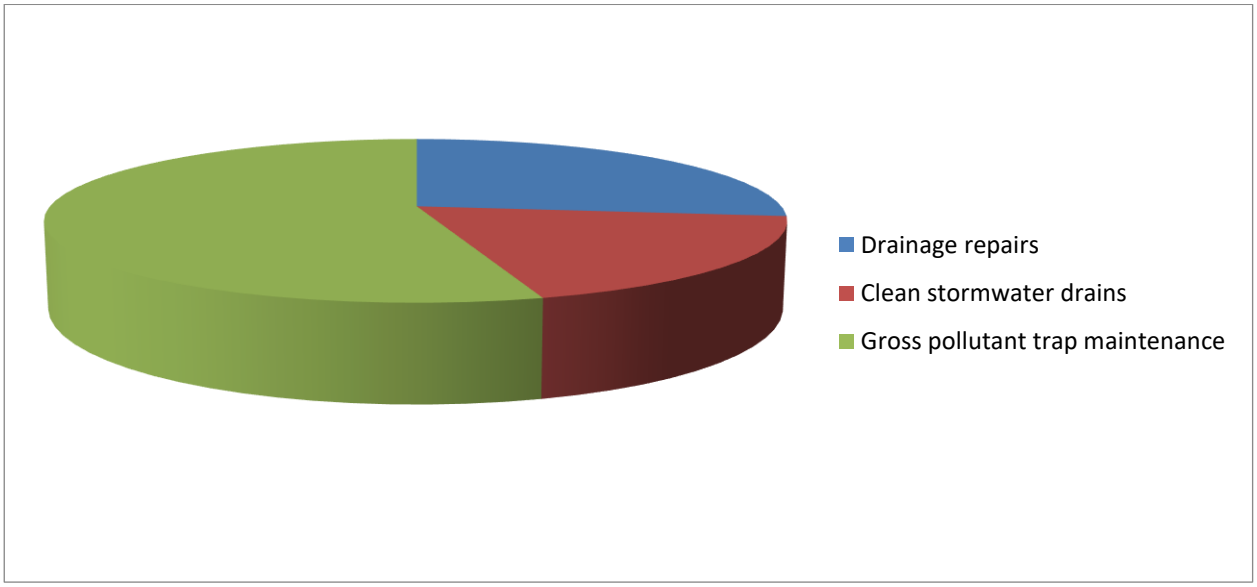
If there is a desire based on community feedback, the following changes to the current LOS can be further investigated and costed.

- Reduced mowing and maintenance of open swales and basins leading to potential loss of capacity and loss of amenity
- Reduced cleaning of Gross Pollutant Traps.
- Lower intervention levels, meaning that assets will become more degraded before repairs are carried out
- Reduced maintenance services, meaning that the response time for repairing reported issues is extended.
- The use of alternative pipe materials, which may lead to lower useful lives and increased maintenance costs.
- A reduction in the design ARI for the underground stormwater system in areas of lower criticality, meaning the system will be designed to cope with smaller storm events and more reliant on overland flow paths to convey stormwater flows
- Reduced street sweeping and cleaning activities, which may lead to increase pollution loads in the stormwater system.

Table 7.2: What are our Maintenance Costs?

Item	Budget ($,000)
Drainage repairs	15
Clean stormwater drains	11
Gross pollutant trap maintenance	31
Total	**57**

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.

Asset renewal for stormwater pipes is based on the conditions of the pipe network. The majority of the system is made up of concrete pipes, which have an expected lifespan of 100 years. Regular inspections of the system, using CCTV, allows for more accurate condition ratings to be established.

The criticality of the pipe is also important when assessing the need for rehabilitation and determines the intervention level for renewal / rehabilitation of a pipe. For example, a trunk drain line that services a major arterial road may have a higher criticality rating than a small pipeline within an urban street.

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 estimates. 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 B 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 (2018 $,000)?

Activity	Budget	Required	Gap	Backlog Year 1	Backlog Year 10
Culverts	0	0	0	0	0
GPTs	0	0	0	0	0
Headwalls	0	0	0	0	0
Pipes	170	45	0	0	0
Pits	0	2	2	0	24
Total	**170**	**47**	**0**	**0**	**24**

1. *Budget figures are based on the 10 year annual average amounts*

Even though there are many known deficiencies in the stormwater network, minimal backlog is identified over the ten year life of the plan This is erroneous. It is due to limitations in the accuracy of the asset register and limited information on the condition of stormwater assets. The plan recommends that new asset data be collected, including a condition assessment of the network. Meanwhile, it is proposed to address the known deficiencies in order of priority as capital upgrades – refer Section 9

The following graphs show the proposed expenditure on renewals over the next 10 years. Figure 8.1 indicates that, based on current projections, Council will spend $170,000 per annum on renewals.

Figure 8.1: What will we spend (2018 $,000) over the next 10 years on Renewal?

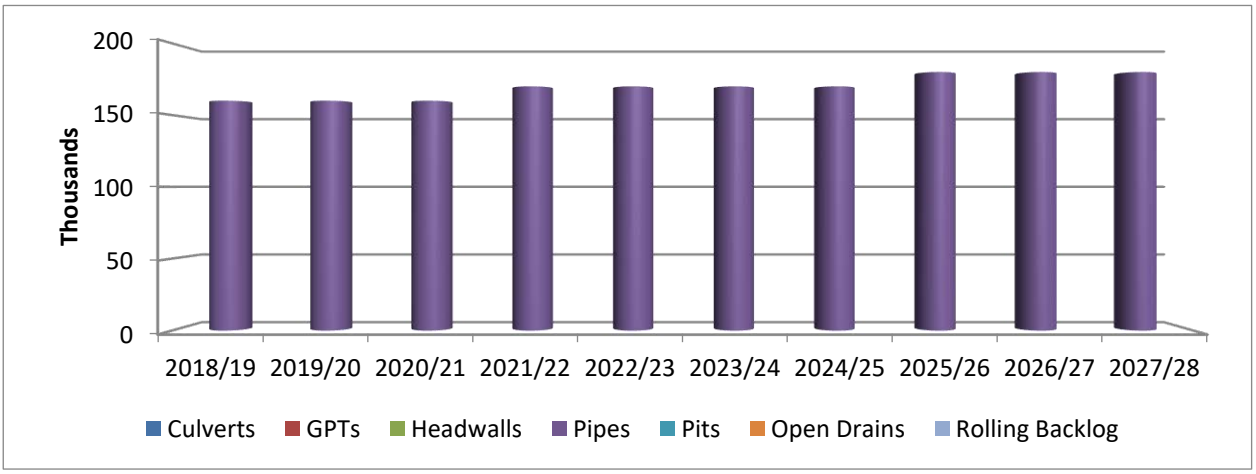
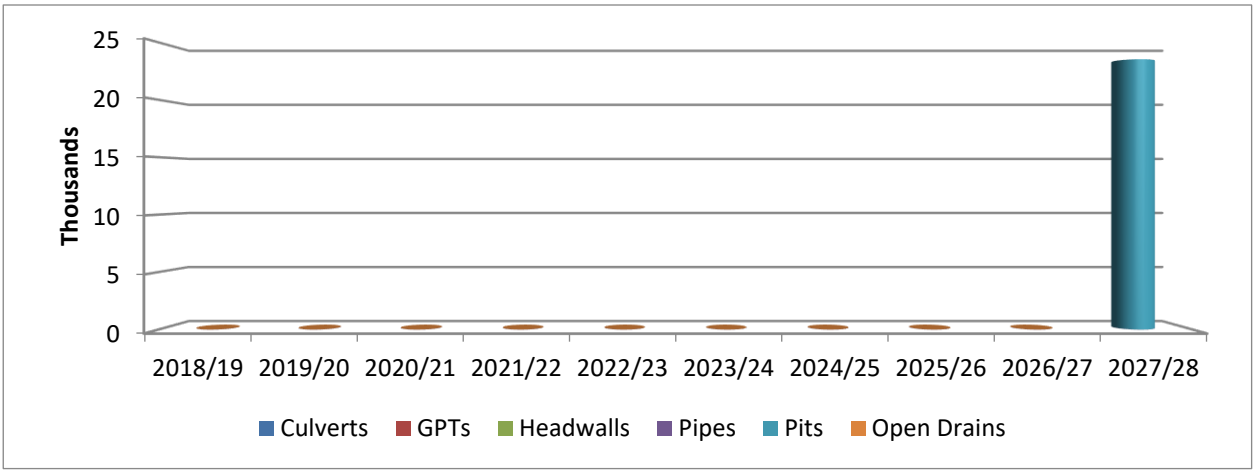


Figure 8.2 reflects the limited information in the asset register, and suggests that a number of pipes will reach end of life towards the end of the 10 year plan.

Figure 8.2: What are the projected rolling backlog splits ($,000)?



9. Capital Upgrades & New Assets

Upgrades enhance an existing asset to provide a higher level of service, for example lining an open drain or extending the stormwater drainage 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.

Council has a $1 Million "one off" grant to implement high priority stormwater improvements. Other sources of funding for new assets include Developer Contributions in the form of a Section 94 Contribution, a Voluntary Planning Agreement, or as part of a subdivision development.

Selection criteria

The criteria for selecting priorities for upgrading and expansion of existing assets are documented in the "Priority Infrastructure Project: Stormwater Priority Assessment Report" DRAFT Version 1.1", April 2018 (Brearley & Hansen). Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate. Verified proposals are ranked using a risk assessment process to develop priority schedules, and are scheduled in future works programmes in accordance with available funding.

This Stormwater Priority Assessment Report identifies possible stormwater management projects using a risk based approach, and proposes a priority list for the $1 Million expenditure. The report focusses on potential stormwater improvements for the urban drainage systems within the townships of Cootamundra and Gundagai (including South Gundagai). The report has been placed on public exhibition.

The full priority assessment schedule is reprinted as Appendix C. **DRAFT** Recommendations for expenditure of the $1 Million are reprinted below:

1. *That $100,000 be allocated to prepare a new flood study for Cootamundra and Stockinbingal, to support future grant applications under the NSW Government's Floodplain Management program for a Floodplain Risk Management Plan, and subsequent design and construction of flood mitigation works*
2. *That $100,000 be allocated towards a program of inspection and drain/creek cleaning in Cootamundra and Gundagai, with priority given to the following locations:*
    - *Muttama Creek, Cootamundra*
    - *South St and Isaac St South, Gundagai*
    - *Nashs Lane and Muttama Road, Cootamundra*
3. *That $150,000 be allocated towards projects that can be constructed without design plans, including:*
    - *Corner of Eagle and Luke St, South Gundagai - Construct kerb and gutter to divert run off down Luke St*
    - *Continue the construction of concrete "v" drain and grassed channel sides at various locations throughout Cootamundra.*
4. *That $150,000 be allocated towards survey, investigation and design of the following projects:*
    - *Tor St, Gundagai. East side road drainage between Nurse Murray St and Jack Moses Avenue, noting that this is the highest priority project for Gundagai*
    - *Open stormwater drain between Middle and South St, South Gundagai (Concrete "v" drain with selective improvements to channel sides and inlet/outlet to structures)*
    - *Southee Circle, Cootamundra. CCTV inspection of pipes. Analyse stormwater capacity and overland flow paths. Design improvements to minimise flooding risk.*

- *Sheehan Dr, Gundagai between Nurse Murray St and Jack Moses Avenue- design of roadside drainage including pipes, pits, kerb and gutter*
- *Drain on private property between Tor St & O'Hagan St, Gundagai - Design a piped drainage system and overland flow path through private properties*
- *Drain on private property at 48 Mount St South Gundagai - Design a piped drainage system and overland flow path through private property*

5. *That the remaining $500,000 be allocated towards construction of the projects listed in priority order in Recommendation 4, subject to design work and costing. The expected funding shortfall is to be considered in conjunction with competing priorities in future budgets.*
6. *That all unfunded stormwater projects be listed in the Stormwater Asset Management Plan and that the expected funding shortfall be considered in conjunction with competing priorities in future budgets*

10. Disposal Plan

Disposal is any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Generally, stormwater assets are retained, through rehabilitation or augmentation of the existing system. Known disposals in the past include old brick lined pipe systems and stormwater lines located within subdivisions, that due to changes in proposed lot layouts, have been relocated.

Other disposals may include the replacement of open swales with a pipe system, or the relocation of existing lines that are within private property that is being redeveloped, which have required the shifting of infrastructure.

The disposal of land, upon which assets are located may also be considered in the disposal plan. This may include the sale of land, due to a change in use, or the disposal of easements or lease agreements that are no longer required.

At this stage there are no known plans to dispose of any stormwater assets. Generally, pipes which are due for renewal will be relined/rehabilitated, meaning that the existing asset is restored to a satisfactory service level.

11. Financial Plan

As part of its funding strategy, Council has the option to supplement any or all of the current or new capital expansion or rectification proposals that come into consideration for construction with borrowings. This strategy is heavily influenced by the monitoring of Councils Debt Service Ratio.

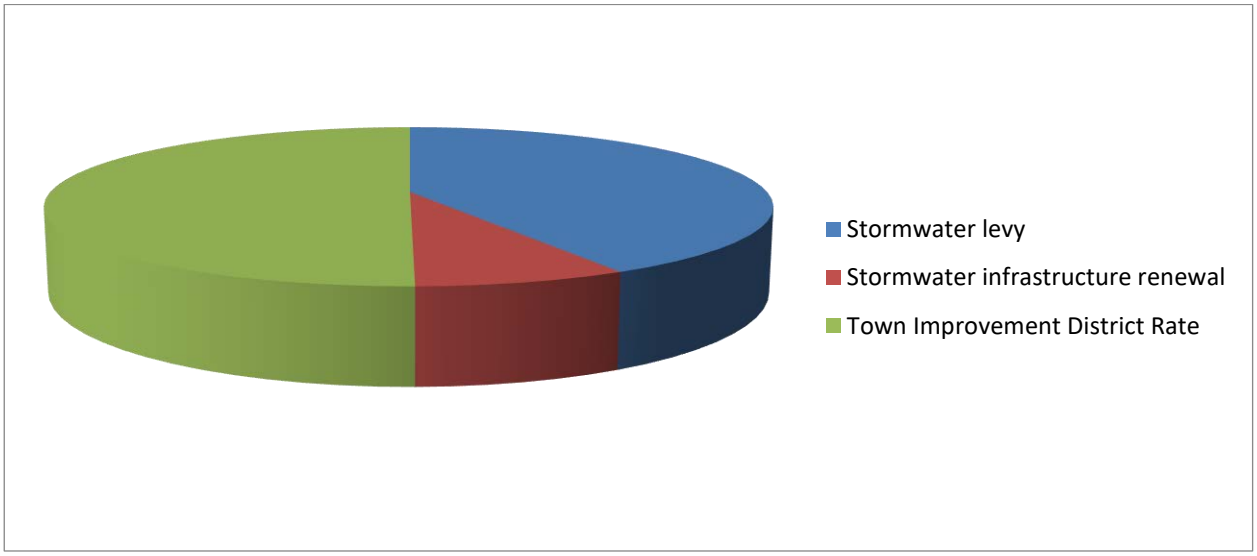
A summary of the funding requirements and expenditure over the next 10 years is included in Appendix D, with the projected budget amounts being based on 2018 dollars increased for growth by 0.9% per annum.

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?

Item	Budget ($,000)
Stormwater levy	- 110
Stormwater infrastructure renewal	- 21
Town Improvement District Rate	- 132
Total	**- 263**

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



12. Key Performance Measures

Development of Key Performance Measures based on condition will be developed in future versions of this plan by considering the levels of service that need to be provided in order to effectively manage stormwater issues.

13. Plan Improvements

In addition to the Asset Management Strategy improvements, the following items outline proposed improvements to the way in which stormwater assets are managed at Council. It is expected that this will be an ongoing process, because it is good asset management practice to continually review and improve.

Table 13.1: What are our planned improvements?

Plan Improvement	Timeframe
Updating the capital works program once the priority list for capital upgrades and the expenditure program for $1M is adopted by Council	2018
Collection of new asset data, including a condition assessment of the network.	2019
Update Stormwater AM Plan to reflect new asset data.	2019
Alignment of asset data with the Geographic Information System	2019
Implementation of an annual CCTV inspection program of pipes	2019
Implementation of proactive maintenance practices	2019
Development of Key Performance Measures	2020
Development of a risk management plan for existing assets	2021

Note the items listed above are part of a continual improvement process and should be reviewed on annually.

Note.

Asset data is the foundation of asset management. To be able to operate and maintain the assets, staff need to be able to locate and identify them. To accurately value the assets, sufficient data is needed to calculate replacement cost (e.g.: size and type) and remaining life (e.g.: age, expected life and condition). For many of the assets listed in Council's stormwater asset register, some of this information is missing. Condition for most of the assets is assumed, based on assumed age.

As a consequence, the outcomes of this Stormwater Asset Management Plan are not a reliable as could be desired. The financial modelling indicates that Council has no backlog, and no need to spend on asset renewal. The experience of staff tells us that this is not the case. Stormwater assets do need renewal.

Therefore the Plan Improvement Table above shows an update of this AM Plan, to better reflect reality, once new data becomes available.

14. 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.

Table 14.1 Critical Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Rating	Risk Treatment Plan
Pipe	Breakdown failure, joint displacement. Void develops near a break which eventually collapses from the surface Blockage caused by debris, tree roots	H	Replacement, repair, realignment Cleaning root cutting Excavation, repair, backfill
Pits	Blockage, Failure, Breach, Grate failure	H	Cleaning, Repair/Renewal
Gross Pollutant Traps	Failure, Breach, Breakdown, Vandalism	H	Repair, replacement renewal
Open channels	Siltation, flooding and erosion	H	Regular inspection, Vegetation maintenance, silt removal, assessment of priority for upgrading using a concrete invert or pipeline

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. For instance, to mitigate failure of a critical asset, it may be possible to increase inspection frequency and perform more planned maintenance. For the next version of the Stormwater Asset Management Plan, all stormwater assets will be assessed to determine the critical assets in the network.

15. Appendix A: Maintenance Program

Council's carries out regular maintenance of the stormwater assets to provide an acceptable level of service to its customers.

Regular pit lid/grate repairs are carried out as well as inspection and repair of GPT's. Regular maintenance is carried out on swales that require reshaping.

Council will be implementing a program of CCTV inspection and regular cleaning of stormwater pipes.

Council is implementing a regular programme of open drain inspection and maintenance.

16. Appendix B: Renewals

Renewal Programs will be included in future versions of this Asset Management Plan

17. Appendix C: Upgrade / New Capital Works Priorities

Ref	Town	Location	What can happen?	Possible cause	Risk rating	Preferred Action	Project Planning Requirements	Cost Range	Recommended Priority
G1	Gundagai	Tor St.East side road drainage between Nurse Murray St and Jack Moses Avenue	Run off from Tor St can enter private property and cause nuisance flooding	Inadequate roadside drainage	High	Design and construct roadside drainage including pipes, pits, kerb and gutter	Design required by consultant, then construction under contract	$150,000 to $500,000	1
G7	South Gundagai	Corner of Eagle and Luke St	Storm water run-off from road can enter private property and flood garage	Stormwater run-off flowing down Luke St	High	Construct kerb and gutter to divert run off down Luke St	Minor construction without design	$20,000 to $150,000	1
G9	South Gundagai	Open stormwater drain between Middle and South St	Erosion and flooding of private property	Open earth drain	High	Concrete "v" drain with selective improvements to channel sides and inlet/outlet to structures	Design required by consultant, then construction under contract	$150,000 to $500,000	1
G11	South Gundagai	Isaac St	Flooding of private property and out buildings	Pipe culvert under road too small and heavily vegetated stormwater drains cannot convey stormwater runoff	High	Inspection and cleaning of drain	Maintenance project	$0 to $20,000	1
C1	Cootamundra	Nash's Lane x Muttama Road	Flow of upstream water is obstructed	Vegetation Growth and Siltation	Medium	Vegetation maintenance and desilting	Maintenance project	$0 to $20,000	2

Ref	Town	Location	What can happen?	Possible cause	Risk rating	Preferred Action	Project Planning Requirements	Cost Range	Recommended Priority
C2	Cootamundra	Florance Street near Hume Street	Flow of upstream water is obstructed	Vegetation Growth and Siltation	Medium	Consider installing concrete "V" invert and reshape grassed channel	Minor construction without design	$20,000 to $150,000	2
C3	Cootamundra	Wills Street near White Street	Flow of upstream water is obstructed	Vegetation Growth and Siltation	Medium	Consider installing concrete "V" invert and reshape grassed channel	Minor construction without design	$20,000 to $150,000	2
C4	Cootamundra	Berthong Street	Flow of upstream water is obstructed	Siltation	Medium	Consider installing concrete "V" invert and reshape grassed channel	Minor construction without design	$20,000 to $150,000	2
C6	Cootamundra	Boundary Road x Matilda Ave	Erosion, pedestrian hazard	Siltation, erosion	Medium	Consider installing concrete "V" invert and reshape grassed channel	Minor construction without design	$20,000 to $150,000	2
C12	Cootamundra	Parker St Bridge	Structural Failure	Crack in bridge	Medium	Structural Assessment of Bridge to withstand flood events	Design required by consultant, then construction under contract	$0 to $20,000	2
C13	Cootamundra	Southee Circle	Significant overland flow due to poor piped drainage and no defined overland flow path	Inadequate pipe drainage and inlets	High	CCTV inspection of pipes. Analyse stormwater capacity and overland flow paths. Design and construct improvements.	Design required by consultant, then construction under contract	$150,000 to $500,000	2

Ref	Town	Location	What can happen?	Possible cause	Risk rating	Preferred Action	Project Planning Requirements	Cost Range	Recommended Priority
G3	Gundagai	Sheehan Dr	Roadside Drainage is inadequate. Overtopping can flow into private property	Inadequate roadside drainage	Medium	Design and construct roadside drainage including pipes, pits, kerb and gutter	Design required by consultant, then construction under contract	$20,000 to $150,000	2
G5	Gundagai	Drain on private property between Tor St & O'Hagan St	Storm Water flows cause flooding of private property	No formal drainage system	Medium	Design and construct piped drainage system and overland flow path through private properties	Design required by consultant, then construction under contract	$150,000 to $500,000	2
C7	Cootamundra	Harold Conkey Ave	Erosion, pedestrian hazard	Siltation, erosion	Medium	Consider installing concrete "V" invert and reshape grassed channel. Investigate off line detention basin in reserve	Minor construction without design	$20,000 to $150,000	3
C10	Cootamundra	Boundary Road near hospital	Roadside Drainage	Siltation, erosion	Medium	Consider installing concrete "V" invert and reshape grassed channel	Minor construction without design	$20,000 to $150,000	3
C15	Cootamundra	Railway Culvert	Blockage can obstruct flow	Blockage can obstruct flow	Medium	Inspection program to reduce risk of blockage	Maintenance project	$0 to $20,000	3
C16	Cootamundra	Pinkerton Rd	Small pipes under railway with limited capacity cause backup	Inadequate pipe capacity under railway with flat gradients	Medium	Review Pipe Capacity and investigate options for augmentation	Design required by consultant, then construction under contract	$150,000 to $500,000	3
C17	Cootamundra	Future Development area west of Rinkin Street	Increased flooding downstream	Impacts of urbanisation can increase runoff	High	Release area master planning	Future Release Area Master Planning	Subject to future Release Area Master Planning	3

Ref	Town	Location	What can happen?	Possible cause	Risk rating	Preferred Action	Project Planning Requirements	Cost Range	Recommended Priority
C18	Cootamundra	Future Development area south-west of Hurley Street	Increased flooding downstream	Impacts of urbanisation can increase runoff	High	Release area master planning	Future Release Area Master Planning	Subject to future Release Area Master Planning	3
G4	Gundagai	Hanley St	Open drain heavily vegetated, storm water cannot flow	Vegetation Growth and Siltation	Medium	Regular drain cleaning and inspection	Maintenance project	$0 to $20,000	3
G8	South Gundagai	Eagle St	Water not draining from road	Roadside vegetation prevent run off from road pavement	Medium	Maintenance of roadside vegetation	Maintenance project	$0 to $20,000	3
G10	South Gundagai	South St	Flooding of private property	Flooding when capacity of open drain exceeded. Open drains heavily blocked by vegetation	Medium	Inspection and cleaning of drain	Maintenance project	$0 to $20,000	3
C8	Cootamundra	West Jindalee Road	Overland flow from creek	Rural area with flat topography and minimal stormwater drainage infrastructure	Medium	Rural area. Low priority	Design required by consultant, then construction under contract	$20,000 to $150,000	4
C14	Cootamundra	Cowcumber St	Water over road	No piped drainage at intersections	Medium	Investigation of piped drainage improvements to reduce road hazard	Design required by consultant, then construction under contract	$150,000 to $500,000	4
G2	Gundagai	Lawson Drive	Overland flows from low-point in road that cannot be conveyed by pipe drainage system, may flow through private properties	Stormwater flows exceeding the capacity of pipe drainage system	Low	Regular inspections and pipe cleaning	Design required by consultant, then construction under contract	$150,000 to $500,000	4

Ref	Town	Location	What can happen?	Possible cause	Risk rating	Preferred Action	Project Planning Requirements	Cost Range	Recommended Priority
G6	Gundagai	Drain on private property downstream of hospital - Attwood Ave	Erosion of drains on rural property	Run off from hospital	Low	Inspection	Maintenance project	$0 to $20,000	5

18. Appendix D: 20 Year Financial Plan (2018 $,000)

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Income											
Stormwater levy	110	110	110	110	110	110	110	110	110	110	110
Stormwater infrastructure renewal	30	30	30	30	30	30	30	0	0	0	21
Town Improvement District Rate	65	110	125	135	135	150	150	150	150	150	132
Total Income	**205**	**250**	**265**	**275**	**275**	**290**	**290**	**260**	**260**	**260**	**263**
Operations											
Total Operations											
Maintenance											
Drainage repairs	14	14	15	15	15	16	16	16	17	17	15
Clean stormwater drains	10	10	10	10	10	11	11	11	11	12	11
Gross pollutant trap maintenance	28	29	30	30	31	31	32	33	33	34	31
Total Maintenance	**52**	**53**	**54**	**55**	**56**	**58**	**59**	**60**	**61**	**63**	**57**
Renewals											
Pipes	160	160	160	170	170	170	170	180	180	180	170
Total Renewal	**160**	**160**	**160**	**170**	**170**	**170**	**170**	**180**	**180**	**180**	**170**
Upgrade / Expansion											
Total Upgrade / Expansion											
Total Expenditure	**212**	**213**	**214**	**225**	**226**	**228**	**229**	**240**	**241**	**243**	**227**

Cootamundra-Gundagai Regional Council

Buildings Parks & Waste Asset Management Plan

Draft Version 1.2 July 2018

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Document Control					
Rev No	**Date**	**Revision Details**	**Author**	**Verifier**	**Approver**
0.1	17/10/2017	Updated Template	ML		
1.0	June 2018	Draft	J Hansen & M Brearley		
1.1	June 2018	Draft – Update of Figure 5.2	J Hansen & M Brearley		
1.2	July 2018	Draft – Reassessment of renewal expenditure, remodelling of financial data, amendments reflecting feedback on Draft V1.1	J Hansen & M Brearley		

1. Executive Summary

Council's intention is to provide a portfolio of buildings, parks and waste assets maintained to a level which reflects the community's expectations and operates in a manner that is both functional and cost effective. The portfolio was valued as at 30 June 2018 and consists of:

- **Administration buildings** in Cootamundra and Gundagai with replacement value of $9.722 million.
- **Airport buildings and facilities** in Cootamundra with a replacement value of $752,600
- **Four residences**, three in Cootamundra and at Snake Gully with a replacement value of $579,600.
- **Specialised buildings** including: The Old Gundagai Gaol, Neighbourhood Centres, Kindergarten, two museums, Tourist Centre, Arts Centre, Men's Shed, Library, After Hours Care Centre and a Baby Health Centre. Buildings Specialised have a replacement value of $14.918 million.
- **Caravan park** facilities in Cootamundra and Gundagai, with a replacement value of $2.190 million.
- **Cemeteries** assets in Gundagai, Coolac, Cootamundra and Tumblong, replacement value of $564,850.
- Assets at two **depots** in Cootamundra and one in Gundagai, replacement value $4.039 Million
- **Emergency Services** (Rural Fire Service and State Emergency Service) buildings and facilities at multiple locations, with replacement value of $2.530 million.
- **Other structures**, such as bus shelters, retaining walls, fences and paths not in parks, with a replacement value of $1.204 million
- **Park assets**, including playground equipment, footpaths, fencing, picnic shelters, irrigation, BBQ and monuments, with a replacement value of $5.528 million
- **Sporting Facilities**, such as showground assets, change rooms, club rooms, tennis courts, kiosks, toilet blocks at sports fields, cricket nets, netball courts, goal posts, field lighting, skate parks and scoreboards, with a replacement value of $14.540 million.
- **Aquatic Centres** in both Cootamundra and Gundagai, with a replacement value of $9.546 million.
- **Waste assets** such as landfills and transfer stations, with a replacement value of $1.593 million.

This plan assists Council in the decision-making process and is presented at a high level to provide key information that can used in the determination of levels of service and funding required. The following table identifies key asset categories in this plan, the ten-year total and average costs and funding gap if one exists.

Table 1.1: Buildings, Parks and Waste Asset Portfolio Overview (in 2018 $,000)

Asset	Fair Value	Operation & Maintenance	Renewal	Upgrade & New	Funding Gap	Backlog Year 1	Backlog Year 10
Caravan Park	2,190	27	28	0	15	9	153
Parks	5,529	840	97	238	0	0	0
Saleyards	3,896	222	30	0	20	0	202
Buildings - Specialised	14,918	677	118	35	218	0	2,177
Emergency Services	2,530	784	0	0	0	0	0
Other Structure	1,205	0	0	0	12	0	118
Depot	4,039	143	0	0	20	2	197
Sporting Facilities	14,540	365	69	18	136	0	1,360
Administration Buildings	9,723	16	0	0	325	227	3,250
Swimming Pool	9,546	649	47	10	80	0	804
Buildings - Non Specialised	580	0	0	0	18	5	175
Waste	1,594	2,339	0	140	25	38	249

Asset	Fair Value	Operation & Maintenance	Renewal	Upgrade & New	Funding Gap	Backlog Year 1	Backlog Year 10
Cemetery	565	0	0	0	3	0	32
Airport	753	38	0	0	0	0	0
Total	**71,607**	**6,101**	**389**	**441**	**872**	**281**	**8,717**

Notes:

1. *Budget Figures are the 10 year annual average amounts.*
2. *The backlog in Year 1 is improved by significant one-off expenditure on renewals in Year 1*

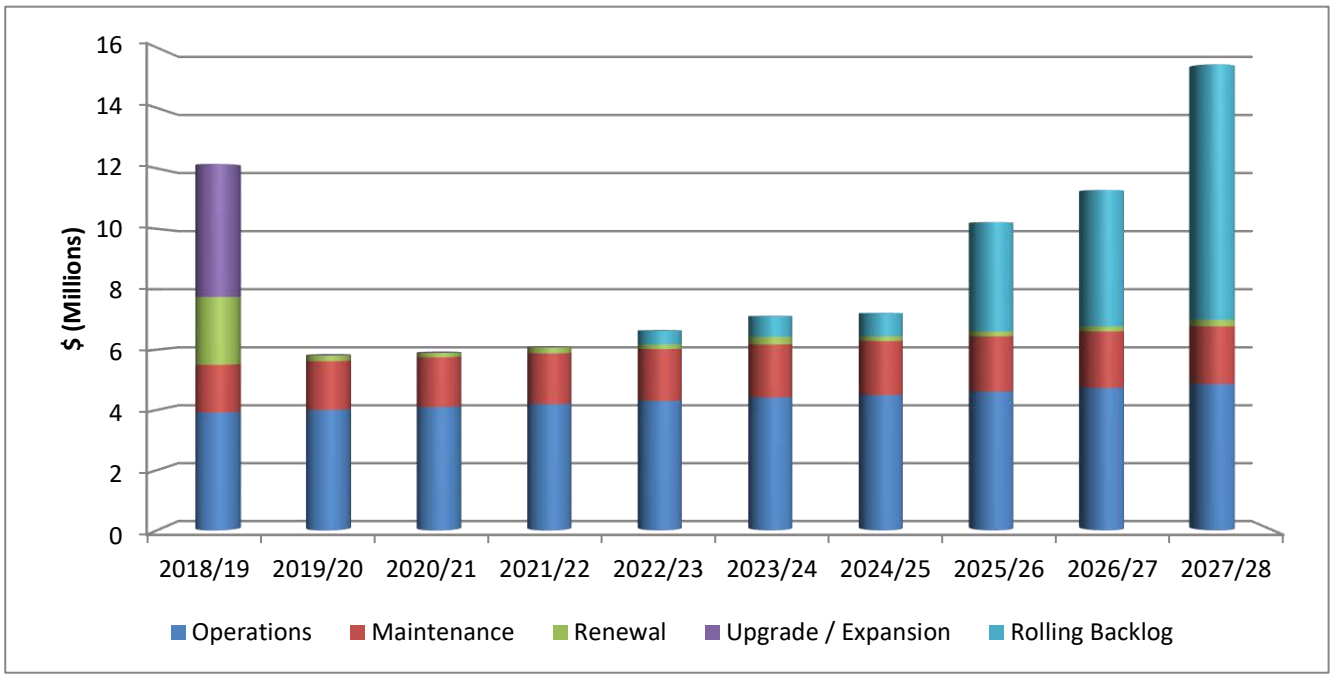
Table 1.1 reveals that Council's portfolio of buildings, parks and waste assets have a total replacement value $71.6 million.

It also reveals that over the next 10 years, Council will be spending $6.1 million per year on operations and maintenance. In comparison, Council will be spending $389,000 per year on average on asset renewal. As there will be a significant cohort of assets deteriorating to intervention level over the coming decade, there is a large backlog, predicted for year ten: $8.7 million.

This Buildings, Parks and Waste AM Plan shows how these asset classes have high maintenance and operations costs: buildings must be cleaned, fields mowed and garbage collected. As part of its maintenance expenditure, Council also renews failing asset components. There is a need to plan for timely renewal of assets. Additionally, Council is acquiring new assets utilising grant funding. These assets will also have renewal needs. **Council will be considering financial strategies to address the current backlog and renewals planning.**

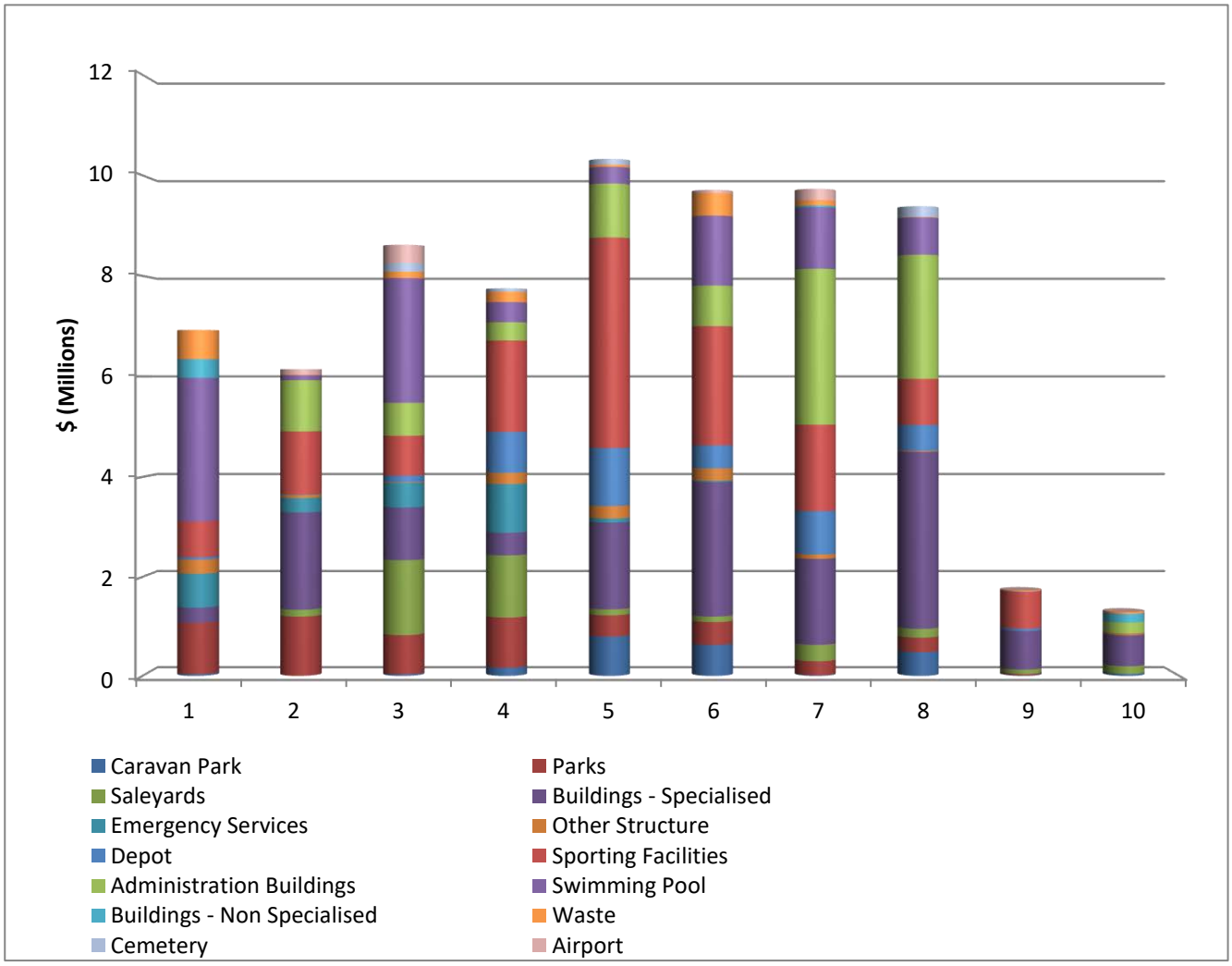
The following figure identifies the proposed expenditure over the next 10 years together with the backlog. The identified backlog in year 1 of the plan is minimal but would be $8.7 million after 10 years at current funding levels. The projected budget amounts are based on 2018.

Figure 1.1: What will we spend over the next 10 years (2018 $M)?



The current condition of our buildings is shown in the following graph based on the value of each component ranging from 1 to 10, with 1 being near new and 10 as a completely failed asset.

Figure 1.2: What condition are our assets in ($M)?



The process of managing our buildings, parks and waste 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 13 contains details of the plan to further improve the details contained in the next Plan.

2. Strategic Objectives

Council plans to operate and maintain its building, parks and waste asset network to achieve the following strategic objectives.

1. Ensure the asset is maintained at a safe and functional standard as set out in this Plan.
2. To encourage and support economic and social development in the Cootamundra-Gundagai Region
3. Ensure that assets are managed to deliver the requirements of Council's Asset Management Policy and Asset Management Plan.

To assist in the delivery of the objectives in this plan, a number of key documents and 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
Asset Management Policy	How we manage assets
Asset Management Strategy	Overall direction of asset management and portfolio summary
Civica Asset Management System (AM)	Electronic system that contains the asset register, condition ratings and used to model future renewals
GIS	Geographical information system that produces maps of assets

The Cootamundra-Gundagai Regional Council Community Strategic Plan 2018-28 (CSP) has been created in consultation with the community to provide a document that identifies the communities' priorities and aspirations for the next ten years. CSP Outcomes supported by this AM Plan include:

Objective 1.1 Our community is inclusive and connected

- Community is satisfied with the museums, arts and cultural centres available
- Community satisfaction with range of sports and recreational activities on offer
- Facilities are accessible to all

Objective 1.2 Public spaces provide for a diversity of activity and strengthen our social connections

- Improved visual amenity of streets and public spaces
- Town and village entrances are appealing
- Community satisfied with accessibility and maintenance of facilities
- Local libraries continue to be well-supported

Objective 1.3 Our community members are healthy and safe

- Community satisfaction with health activities, facilities and services on offer
- All recreational grounds are regularly used
- Community is satisfied with emergency responses

Objective 2.3 Tourism opportunities are actively promoted

- Visitors are satisfied with the level and quality of the facilities and amenities on offer.

3. Services Provided & Classification

3.1 Buildings

Council will be developing levels of service provided to each individual building, which will be based on the classification of that building. This will ensure that buildings with the highest utilisation, requiring the best presentation, increased response times and increased levels of renewal can be separated from those that essentially provide a storage function.

A simple ranking scheme of A, B and C is proposed; where A has the highest ranking. An extra class "O" is proposed for buildings that are the responsibility of Council, but where the usual maintenance tasks are performed by the community groups or tenants who use them, rather than Council.

Factors considered in assigning the ranking of individual buildings include: their occupancy and usage, community profile and the impact on the community if the building was non-functional. Common characteristics are outlined in Table 3.1

Table 3.1: What are some of the common characteristics of buildings in each class?

Classification	Characteristic
A	• Buildings that house the corporate and administrative functions of Council • Buildings that are used more than 30 hours per week by Council staff or the public • Buildings that require a high standard of presentation, access, safety and maintenance
B	• Buildings that house community and cultural activities • Buildings that are used regularly by Council staff or the public • Buildings that do not require the highest standards of presentation • Buildings that require access and facilities for the disabled
C	• Structures that are not fully enclosed • Buildings that are used for storage, workshops, and other operational uses • Buildings that are only accessed by Council staff for short periods
O	• Buildings that house community and cultural activities, with the community groups providing minor maintenance and cleaning. • Buildings that are leased, with the lessees determining the day-to-day requirements of the building. • Buildings that are not accessed by Council staff unless requested to do so.

3.2 Parks

Council provides the towns of Cootamundra and Gundagai, and surrounding villages with a network of parks, ranging from senior and junior sports grounds, regional attractions, passive parks, drainage reserves and linkages. These open spaces are serviced and maintained to ensure a constant level of service of parks infrastructure that reflects the community's expectations.

It is proposed that Council develop a parks hierarchy, to allow resources to be allocated to the assets offering the greatest benefit to the whole community. A simple parks hierarchy could consist of Regional, District and Local parks, with a Regional Park, a premium facility that attracts people from around the region, obtaining the most frequent maintenance and renewal.

3.3 Waste

Council's waste service includes:

- Collection services using in-house resources, with a 3 bin system.
- Transfer stations in Gundagai and Cootamundra for domestic. Both sites nearing end of life. Infrastructure improvements to both waste depots are planned for 2018-19.
- Waste is transported by contractor from the transfer stations to Bald Hill, where it is disposed under regional contract arrangements.
- Council operates a licenced landfill at Cootamundra for non-domestic purposes only. Building wastes and recyclables are processed.
- Four small rural transfer stations. All are locked, with locals having the key, and are serviced by contract with bulk bins.

Council will develop a **Waste Strategy**. The Waste Strategy will include effective demand forecasting, asset utilisation and management of customer demand (pricing, regulation, incentives etc). Fees and Charges will be reviewed.

Table 3.2: What is provided?

Table 3.2 below lists examples of the assets provided at each location. Note for some of the locations such as Council's larger parks, not all of the wide range of land improvements provided by Council are listed in Table 3.2. For Council's operational facilities, such as depots and waste facilities, the operational assets at each location are not listed. A discussion is provided following table 3.2 on Council's cemeteries.

Asset Location	Replacement Cost
Administration Buildings	
Council Chambers and Office, Carberry Park Gundagai	$3,732,150
Council Chambers and Office Cooper St Cootamundra	$482,000
Cootamundra Town Hall Wallendoon Street Cootamundra	$5,508,750
Administration Buildings Total	**$9,722,900**
Airport	
Airport – Cootamundra bushfire services	$30,250
Arthur Butler Terminal Cootamundra Airport	$722,350
Airport Total	**$752,600**
Buildings - Non-Specialised	
Dog on the Tuckerbox residence	$175,000
Two residences Cootamundra	$371,000
Caretakers cottage Cootamundra Showground	$33,600
Buildings - Non-Specialised Total	**$579,600**
Buildings - Specialised	
Cootamundra Baby Health Clinic	$92,000
Bradman's Cottage & Museum	$310,150
Tourist Centre Carberry Park	$569,800
CCACC Arts Centre and Men's Shed	$2,100,200
After Hours Care, Cootamundra Depot 2	$564,850
Cootamundra Pound, Turners Lane	$151,200
Five Mile (Dog on the Tuckerbox) Kiosk, showroom and pump shelter	$544,800
Base Radio Station, Goat Hill	$22,300
Gundagai Kindergarten	$564,050
Cootamundra Library	$2,316,550
Gundagai Men's Shed	$131,550
Signal Antenna Shed Mt Parnassus	$20,950
Toilets Murray Street	$90,550
Gundagai Museum	$1,123,750

Asset Location	Replacement Cost
Muttama Hall	$446,100
Gundagai Neighbourhood Centre	$1,448,500
Old Gundagai Gaol buildings	$1,826,400
Gundagai Sport and Recreation Club	$458,200
Stockinbingal Hall	$918,600
Stockinbingal Museum	$71,350
Wallendbeen Hall	$915,600
Toilets Wallendoon Street	$156,300
Yannawah Hall	$74,500
Buildings - Specialised Total	**$14,918,250**
Caravan Park	
Caravan Park - Cootamundra	$1,232,750
Caravan Park - Gundagai	$957,650
Caravan Park Total	**$2,190,400**
Cemetery	
Cemetery – Coolac (fencing)	$8,800
Cemetery - Cootamundra	$268,650
Cemetery – Tumblong (fencing)	$21,150
Gundagai Lawn Cemetery	$266,250
Cemetery Total	**$564,850**
Depot	
Cootamundra Depot	$1,148,200
Cootamundra Depot 2	$943,100
Depot - Gundagai	$1,947,850
Depot Total	**$4,039,150**
Emergency Services	
RFS Aviation Shed, Cootamundra Airport	$81,250
Cooneys Creek RFS Shed (private land)	$44,100
Rural Fire Brigade Bushfire Shed – Adjungbilly	$112,050
Rural Fire Brigade Bushfire Shed- Coolac	$93,100

Asset Location	Replacement Cost
Rural Fire Brigade Bushfire Shed - Cootamundra	$192,250
Rural Fire Brigade Bushfire Shed - Cullinga	$94,100
Rural Fire Brigade Bushfire Shed - Darbalara	$46,450
Rural Fire Brigade Bushfire Shed - Forsyths Lane	$58,250
Rural Fire Brigade Bushfire Shed - Frampton	$103,000
Rural Fire Brigade Bushfire Shed - Gobarralong	$61,650
Rural Fire Brigade Bushfire Shed – Mundarlo	$82,650
Rural Fire Brigade Bushfire Shed- Muttama	$94,950
Rural Fire Brigade Bushfire Shed- Nangus	$132,600
Rural Fire Brigade Bushfire Shed - North Gundagai	$218,900
Rural Fire Brigade Bushfire Shed - South Gundagai	$223,900
Rural Fire Brigade Bushfire Shed- Stockinbingal	$116,800
Rural Fire Brigade Bushfire Shed - Tumblong	$160,850
Rural Fire Brigade Bushfire Shed - Wallendbeen	$99,350
SES Building - Cootamundra Headquarters	$217,050
SES Building - Gundagai	$297,100
Emergency Services Total	**$2,530,350**
Other Structure	
Bimbadeen Tower, Cootamundra	$17,250
Bus Stop - Adjungbilly	$8,650
Bus Stop - Binowee Road	$9,900
Bus Stop - Campbell Street	$9,900
Bus Stop - Gundagai	$18,550
Bus Stop - John Street	$9,900
Bus Stop - Muttama	$10,250
Bus Stop - Olympic Highway	$9,900

Asset Location	Replacement Cost
Bus Stop - Pinkstone Avenue	$13,200
Bus Stop - South Gundagai	$21,000
Bus Stop - Temora Road	$19,800
Bus Stop - Wallendbeen	$19,800
Arts Centre Carpark CCACC	$68,350
Five Mile (Dog on the Tuckerbox), paved areas, garden beds and monument	$71,350
Kindergarten outdoor structures (shed, awnings, sandpit, cubby driveway and paths)	$226,850
Mellis Paddock footpath and fencing	$108,800
Old Gundagai Gaol stone fence and retaining wall	$270,100
Cootamundra Post Office Plaza, pathway and plaza	$54,350
Stockinbingal Hall fences and shade structure	$16,350
Taxi Rank - Cootamundra	$60,550
Great Rescue Monument, Gundagai	$150,000
Wallendbeen Hall fencing	$9,800
Other Structure Total	**$1,204,600**
Parks	
Albert Park toilets, park furniture memorials, monuments and BBQ	$701,000
Anzac Park toilets, monument and gates	$246,450
Apex Park toilets, dump point, lights, BBQ and picnic areas	$127,350
Bimbadeen Tower furniture	$129,400
Boat Ramp Nangus Road	$10,900
Bourke Street water refill station	$5,350
Bradman Oval playground equipment, artwork and signage	$57,850
Carberry Park toilets, footpath, monument and garden beds	$550,750
Clarke Oval, seating and fencing	$11,850
Conkey Park playground, shelter and lighting	$87,800
Dog Park Cootamundra	$29,300
Exercise Equipment LED lights	$21,300
Fisher Park amenities and rest room, roller shed, seating and lighting	$343,850
Friendship Park fencing, footpath and playground equipment	$53,750
Jubilee Botanical Park toilets, monuments, lighting and playgrounds	$1,337,350
King George Park Stockinbingal, toilets, playground and shelter.	$219,000
Kingston Park playground	$94,650
Lawn Cemetery irrigation	$25,900
Mackay Park Wallendbeen picnic shelter and lighting	$238,850
Mitchell Park toilets, storeroom, playground and fencing	$205,400
Nicholson Park toilets and playground	$130,550
Old Mill Park picnic shelter and footpath	$36,300
Palmer Park playground and fencing	$50,050
Recreation Ground Stockinbingal, lighting, fencing and irrigation	$169,450
Southee Circuit Park lighting	$20,000
Stockinbingal Railway Park shelter and pathway	$24,200
Stockinbingal Railway Park Toilets	$42,000
Stockinbingal Recreation Ground irrigation	$29,850
Stratton Park pathway	$6,100
Yarri Park public toilets, BBQ, picnic shelters and playground	$522,300
Parks Total	**$5,528,850**

Asset Location	Replacement Cost
Saleyards	
Saleyards - Cootamundra	$2,142,550
Saleyards - Gundagai	$1,753,650
Saleyards Total	**$3,896,200**
Sporting Facilities	
Albert Park kiosk, changerooms, cricket pitch and sightscreen	$257,350
Anzac Park changerooms, kiosk, sheds, lighting and electronic scoreboards	$1,133,350
Barry Grace Oval kiosk, toilet block, dressing shed, lighting and irrigation	$388,300
Bradman Oval toilets, lighting, pathway and irrigation	$329,450
Clarke Oval kiosk, clubhouse, timekeepers booth and irrigation	$854,800
Cootamundra Showgrounds pavilion and tack store	$368,100
Cootamundra Showgrounds – RDA, toilets, clubroom, shed, arena and fences	$297,350
Country Club Oval kiosk, irrigation, fences and lighting	$453,200
Fisher Park sheds, change rooms, scoreboard fences and irrigation	$724,200
Gundagai Golf Course irrigation	$203,900
Mitchell Park kiosk, change rooms, lighting and cricket pitch	$382,550
Nicholson Park kiosk, change rooms, fencing, lighting and netball courts	$792,550
Outdoor Fitness Circuit	$20,350
Stockinbingal Recreation Ground showground electrical meter	$25,150
Showgrounds (Cootamundra) indoor cricket centre, kiosk, amenities, sheds, pavilions, fencing and lighting	$2,462,400
Skate Park structure and fencing	$254,850
Sports Courts – Gundagai: netball courts, fencing and clubhouse	$570,300
Sports Stadium building, carpark and landscaping	$3,198,250
Stockinbingal Recreation Ground change rooms, kiosk and toilet block	$229,550
Tennis Club – Cootamundra courts, lighting and storage shed	$646,400
Tennis Courts – Coolac, clubhouse, lighting and fencing	$97,350
Tennis Courts – Cootamundra, clubhouse	$143,100
Tennis Courts – Stockinbingal, clubhouse, shed, fencing and lighting	$279,000
Tennis Courts – Wallendbeen, clubhouse, toilet block and fencing	$290,450
Yarri Park skatepark structure	$137,850
Sporting Facilities Total	**$14,540,100**
Swimming Pool	
Aquatic Centre - Cootamundra	$3,465,200
Aquatic Centre - Gundagai	$3,625,400
Cootamundra Aquatic Centre	$2,455,450
Swimming Pool Total	**$9,546,050**
Waste	
Cootamundra Transfer Station	$1,262,650
Landfill - Gundagai	$264,550
Stockinbingal Garbage Depot	$9,250
Transfer Station - Coolac	$10,950
Transfer Station - Muttama	$13,600
Transfer Station - Nangus	$11,850
Transfer Station - Tumblong	$10,800
Wallendbeen Landfill	$10,150
Waste Total	**$1,593,800**
Grand Total	**$71,607,700**

Council Cemeteries

Council operates the following cemeteries across the Shire:

The following cemeteries in the Old Gundagai Shire are controlled by Council

- South Gundagai Cemetery
- North Gundagai Cemetery
- Adjungbilly Cemetery
- Coolac Cemetery
- North Gundagai Lawn Cemetery and Columbarium Wall
- Mt Adrah Cemetery
- Muttama Cemetery
- Nangus Cemetery
- Tumblong Cemetery
- Wagragobilly (Darbalara) Cemetery

The following cemeteries are maintained and operated in the Old Cootamundra Shire:

- Cootamundra Cemetery
- Stockinbingal Cemetery
- Wallendbeen Cemetery

Some of the cemeteries listed above are located on private property. Only four of these cemeteries hold land improvements with a value in excess of the capitalisation threshold meaning that only the built-up assets at these locations are listed in Council's asset register and described in Table 3.2.

4. Levels of Service

One of the basic tenets of sound asset management practice is to provide the level of service the current and future community want and are prepared to pay for, in the most cost effective way (NZ NAMS 2007)

Levels of Service indicators for buildings, parks and waste assets have been based on the objectives set in the Community Strategic Plan. These objectives have been used to define Community Levels of Service – which relates to how the community receives the service in terms of safety, quality, quantity, reliability responsiveness, cost efficiency and legislative compliance. Technical Levels of Service detail how Council will deliver the service in terms of quantity, frequency and standard.

- Community LOS – relates to how the community receives the service in terms of safety, quality, quantity, reliability responsiveness, cost efficiency and legislative compliance; and
- Technical LOS – are the technical measures of performance developed to ensure the minimum community levels of service are met.

Table 4.1, on the following page, outlines what the community desires for each asset Category and how Council will deliver it.

There are no levels of service defined for waste assets in the Community Strategic Plan.

Table 4.1: What does the Community want?

The following objectives are from Council's Community Strategic Plan

1.1 Our community is inclusive and connected

1.2 Public open spaces provide for a diversity of activity and strengthen our social connections

1.3 Our community members are healthy and safe

2.3 Tourism opportunities are actively promoted

Objective	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Key Performance Measure	How Measured
Council **buildings** meet the needs of the community	Building facilities that are **clean and well maintained**.	Council buildings are cleaned and maintained at the level adopted by Council for the particular building classification.	High level of customer satisfaction with building cleanliness from analysis of customer service request data and customer surveys. Low numbers of complaints relating to building cleanliness and maintenance.	Customer service requests. Cleaning frequency, reactive service requests completed within Council's adopted timeframe and how often planned maintenance is completed to schedule.
	Building facilities that are **suitable for use**	Condition of the building is safe and in a condition that is acceptable to the community	Annual safety inspection and comprehensive condition inspection every 5 years	Safety inspection is completed on schedule and identifies no dangerous defects. On-site condition for revaluation every 5 years (not a desk-top indexation of previous condition).
	Buildings that are **accessible** to all members of the community	Council owned buildings are accessible for people with disabilities	Percentage of Council buildings that comply with the DDA	Compliance audit against DDA requirements

Objective	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Key Performance Measure	How Measured
	Buildings that **meet user needs** and program delivery needs	Council provides community halls in villages and urban areas. Council provides childcare facilities. Council's library is adequately equipped with facilities such as internet access, meeting rooms and suitable desk space for study. Buildings at the showground are fit for purpose.	High levels of occupancy and usage for halls and services such as childcare. High levels of satisfaction with library services. Low numbers of complaints regarding the capacity of Council's buildings to meet needs. Lighting meets Australian Standard and the buildings are fully compliant with BCA.	Occupancy rates for Council halls and usage rates for Council services (such as childcare). Outcomes of Council's customer satisfaction survey and trends in customer service requests. Assessment against relevant Australian standards and the BCA.
Council **sports buildings** encourage a healthy lifestyle.	Buildings at sporting facilities that are suitable for purpose	Council buildings at sporting facilities are maintained according to the Plan of Management for each type of facility. Where appropriate, they comply with the relevant sporting standards.	High level of customer satisfaction with the building from analysis of customer service request data and customer surveys. Low numbers of complaints. Full compliance with relevant sporting standards	Customer service requests. Assessment against relevant sporting body standards.
Council **business activity buildings** contribute to the prosperity of the community	Buildings at the airport, livestock markets and caravan parks enable the facility to operate effectively and return a profit to Council.	Council buildings are maintained at the level adopted by Council for the particular facility. The return to general revenue for each business activity complies with the agreed amount. Facilities meet the requirements of their licence.	Low numbers of customer service requests relating to the building at the facility. Council businesses meet or exceed budget net revenue expectations. No licence or security breaches.	Customer service requests. Annual audit of financial statements for the facility. Number of incidents.

Parks

Category	The Community Wants (Community LOS)	How we Deliver this (Technical LOS)	Key Performance Indicator	How Measured
Parks	Parks are attractive places for people. They are well manicured, clean, tidy, safe, irrigated, provide grassed areas and shady trees. They are well maintained. Councils parks hierarchy meets the community's need for recreation.	Council maintains passive park facilities within the adopted budgets for operations, maintenance, renewal and capital works. Council has adopted a parks hierarchy, which determines how frequently these tasks are carried out at a particular park and to what standard.	No parks with long grass and hard to use facilities. All parks are in convenient locations, appropriately sized with suitable facilities. Congestion and overuse of parks is minimal. Parks usage matches the parks hierarchy.	Council regularly inspects parks for risk, safety and response. Parks are inspected to ensure that park facilities and grass length are appropriate for use. Community feedback on passive parks: customer service requests and customer surveys.
Sporting areas	Sporting areas that are suitable for recreation and sporting usage. They are well manicured, clean, tidy, safe, irrigated, provide grassed areas and shady trees. They are well maintained. Council's sporting areas hierarchy meets the community's need for sporting areas.	Council maintains sporting areas within the adopted budgets for operations, maintenance, renewal and capital works. Council has adopted a sporting areas hierarchy, which determines how frequently these tasks are carried out at a particular location and to what standard.	Sporting areas playing surfaces and facilities (e.g.: grass length, linemarking etc) are appropriate for use. Sporting areas are appropriately located with sufficient size and facilities for all weather usage. Congestion and overuse of sporting areas is minimal. Booking waiting list is acceptable to user groups.	Council regularly inspects sporting areas for risk, safety and response. Sporting areas are inspected to ensure that facilities and grass length are appropriate for use. Community feedback on sporting areas: customer service requests and customer surveys. Bookings waiting list.
Playgrounds	Playgrounds that provide a safe and attractive play activity for children. Playgrounds are appropriately located for the community. A range of playground equipment is provided that suits a variety of age groups. Old equipment replaced when it is tired and/or older than 15 years. Playgrounds are well used and congestion is minimal.	Council maintains playgrounds within adopted budget for operations, maintenance, renewal and capital works. Council has adopted a parks hierarchy, which determines the level of playground embellishment at each location. All playground equipment is safe and inspected according to requirements. Council ensure all facilities meet standards.	No playgrounds with damaged playground equipment and/or deficient soft-fall. No playground equipment assets older than 15 years. Playgrounds are not overcrowded at peak times or empty at all times, based on user feedback.	Council regularly inspects playgrounds to ensure they are safe for use. Community feedback regarding the location of playground, size and play facilities, and usage.

5. Condition of Our Assets

Assets are rated on a 1 (Near New) to 10 (Completely Failed) scale consistent with the Maloney model and advanced asset management practices as outlined in the IPWEA International Infrastructure Management 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 6 & 8 which ranges from fair/poor to very poor depending on their classification. For the purpose of this asset management plan, modelling assumes that all assets will be renewed at condition grade 7.

The estimated useful life for each asset component and class is detailed below:

Table 5.2: What are the expected useful lives of our assets (years)?

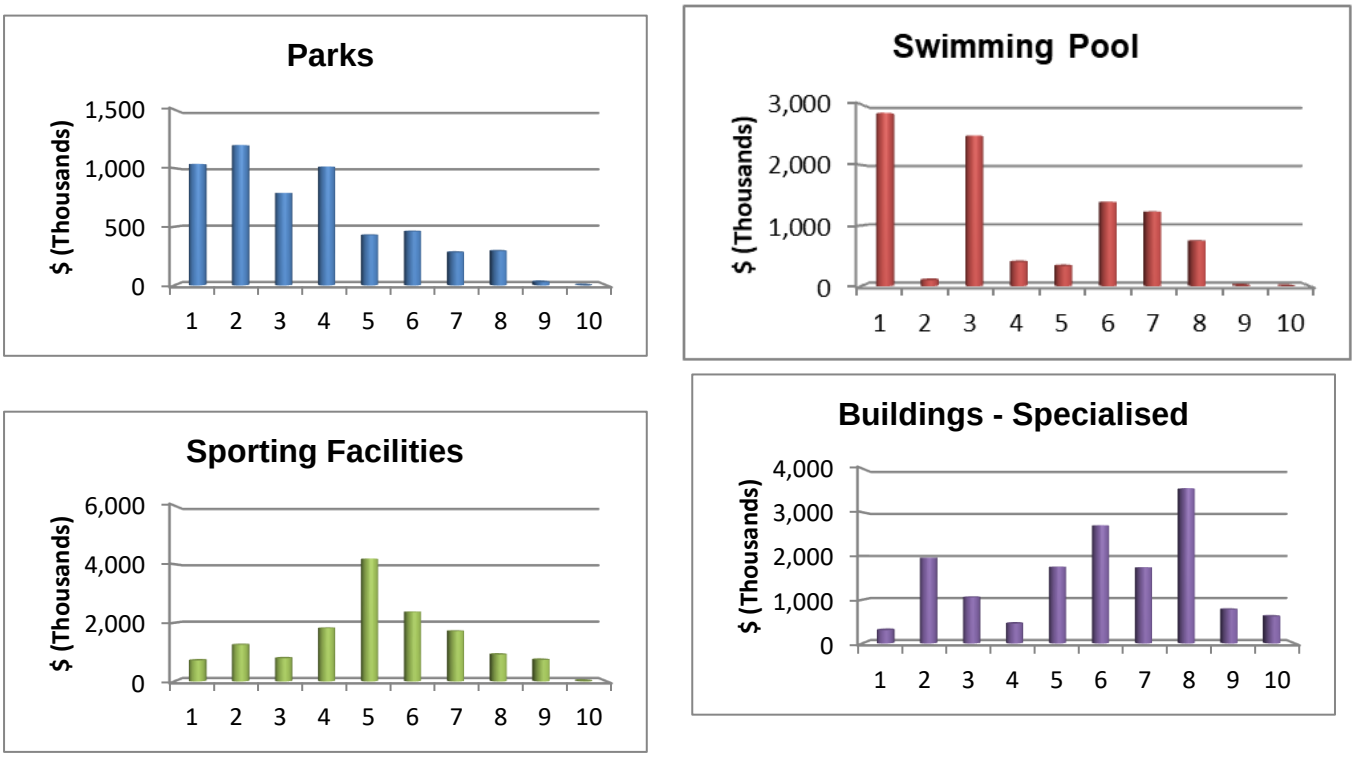
Item	Minimum Useful Life (years)	Maximum Useful Life (years)
Entire Asset	10 E.g.: netball hoops and BBQ	200 E.g.: Monuments
Filtration	20	20
Finishes	25	50
Fittings	15	50
Mechanical	20	25
Pumps	20	20
Roof cladding	15	80
Services	30	50
Structure	50	50
Substructure	30	200
Superstructure	15	200

Typical useful lives for miscellaneous assets:

- Aquatic centre diving board 20 years
- Cemetery columbarium wall 150 years
- Golf course irrigation 30 years
- Indoor heated pool 30 years
- Saleyards concrete hardstand area 40 years
- Shade sail over playground 15 years
- Swings in a playground 15 years
- Transfer station (waste) 30 years

Each asset's condition is maintained in the Asset Register and the graphs on the following page gives the condition profile based on the value of the top 4 valued assets in each condition.

Figure 5.2: What Conditions are our assets in ($0,000)?



6. Operations

Operational activities are those regular activities that are required to continuously provide the service including asset inspection, electricity costs, fuel and overheads.

To ensure that buildings and park embellishments remain viable and well maintained, it is essential that inspections are undertaken on a regular basis to assess the condition of each asset. In addition, it is important to update risk management plans and ensure that the asset portfolio is adequately insured.

Safety inspections for Council buildings are presently performed on an ad hoc basis, as required. It is acknowledged by staff that a more rigorous approach is needed, and Council is striving to implement an annual safety inspection program for all Council buildings. Safety inspections for parks, in particular playgrounds, are performed as required under applicable legislation.

Building, parks and waste assets have relatively high operational costs in order to provide a service to the community.

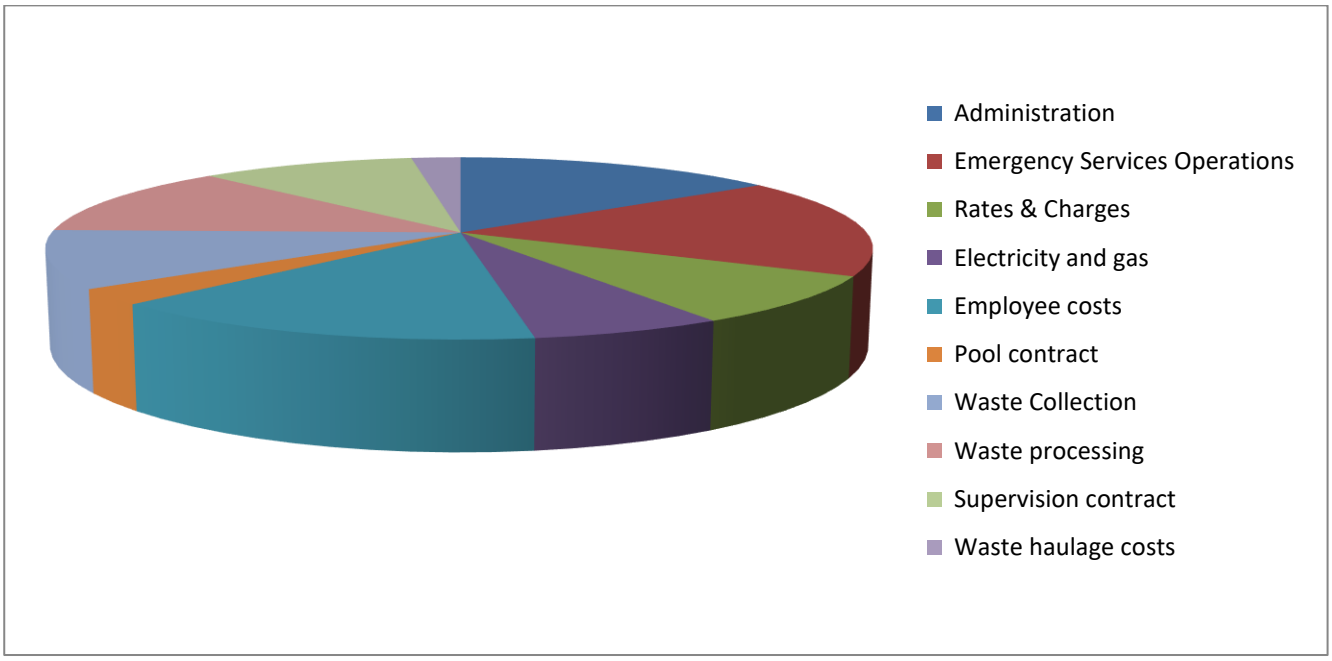
Discussion

Council's operational activities, relating to building, parks and waste assets, have become very reactive in recent years. The development of asset hierarchies (for instance: classification of buildings A, B, C and O and parks into Regional, District and Local) with associated levels of services set as appropriate, agreed with the community and signed off by Council, will give clarity to Council's customers and guidance to staff.

Table 6.1: What are our Operational Costs?

Item	10 year average (2018 $,000)
Administration	651
Emergency Services Operations	767
Rates & Charges	376
Electricity and gas	279
Employee costs	645
Pool contract	123
Waste Collection	446
Waste processing	539
Supervision contract	432
Waste haulage costs	99
Total	**4,358**

Figure 6.1: 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 useful life. It includes work on an asset where a portion may fail and need immediate repair to make it operational again. It may be either planned where works are programmed in or cyclic in nature or reactive in response to storm damage, vandalism etc.

7.1 Buildings

- All works requests relating to the operation of toilets, power, gas, lighting, operation of hot water systems, heating or cooling units, water intrusion into ceilings or building structural integrity are actioned as soon as practicable, depending on the criticality of the building.
- Works requests pertaining to damage to the mains pressure water supply, firefighting equipment, safety concerns or loss of integrity of the security of the building are actioned as soon as possible.
- Requests relating to the, floor surface failure, termites and vermin, are investigated within seven days and rectified as funds are available.

Preventative maintenance activities can be undertaken to protect of the fabric of a building, or to meet compliance and regulatory standards for continued occupation of a building.

Discussion

Most of Council's building maintenance is reactive, which is not ideal, and the budget is considered by staff to be inadequate. This situation is not sustainable in the long term.

It is proposed that all Council buildings be classified. A simple ranking scheme of A, B and C is proposed; where A has the highest ranking. An extra class "O" is proposed for buildings that are the responsibility of Council, but where the usual maintenance tasks are performed by the community groups or tenants who use them, rather than Council.

Hence in the future, the maintenance provided to each individual building will be based on the classification of that building to ensure that those with the highest utilisation, requiring the best presentation and increased response times be separated from those that essentially provide a storage function. This will lead to a better allocation of Council's building maintenance budget and clarity of purpose for staff.

7.2 Parks

The level of maintenance provided to a park asset depends on the importance of the park. Premium facilities receive more attention than small local parks. Frequency of mowing and garden maintenance depends on the season, with more activity September through to April, when the rate of growth is influenced by weather, precipitation and amount of sunlight.

It is understood that the community is generally satisfied with the level of maintenance provided to park assets in Cootamundra and Gundagai.

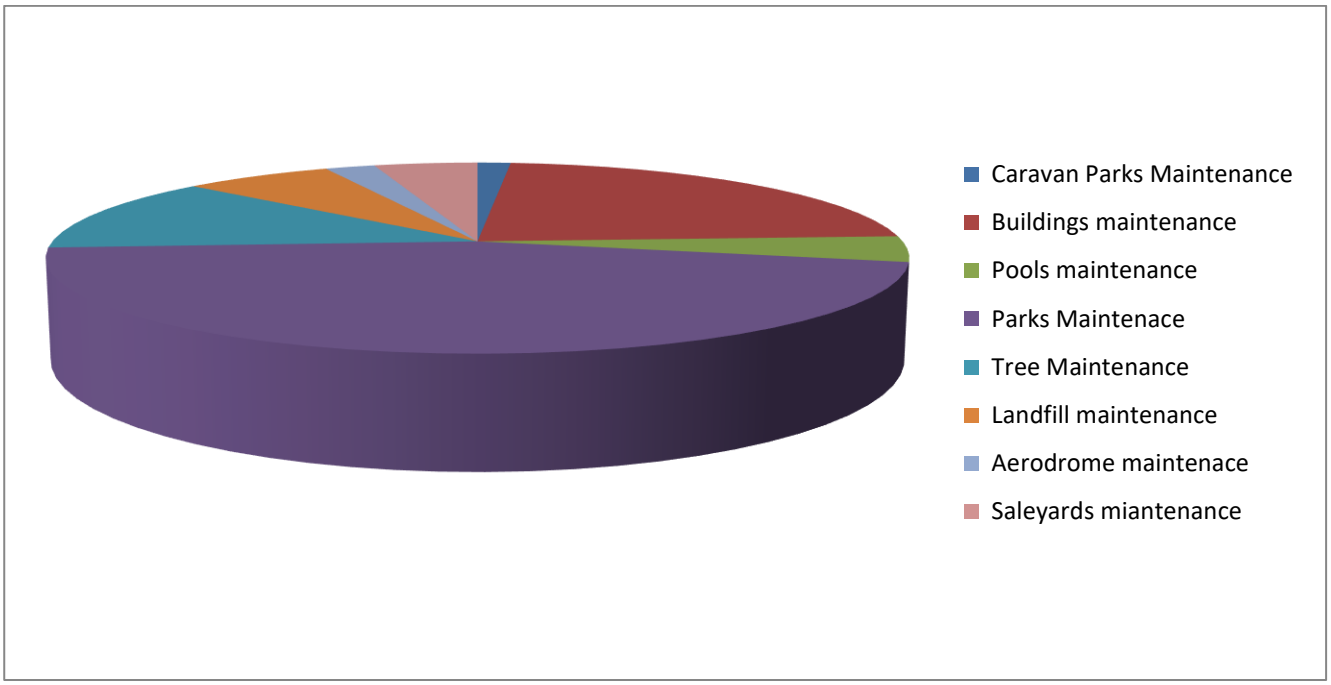
Council is yet to develop Plans of Management for all parks.

Development of a park hierarchy (for instance classifying parks into regional, district and local) with the levels of service defined for each of the classifications in the hierarchy will greatly assist Council in planning park maintenance tasks. Levels of Service could specify the landscaping levels of service, cleaning of open space areas, irrigation and mowing programs for each classification.

Table 7.1: What are our Maintenance Costs?

Item	10 year average (2018 $,000)
Caravan Parks Maintenance	26
Buildings maintenance	395
Pools maintenance	76
Parks maintenance	793
Tree maintenance	220
Landfill maintenance	116
Aerodrome maintenance	38
Saleyards maintenance	80
Total	**1,743**

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 Tables 5.1 and 5.2.

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. Details of planned renewal activities proposed in the current Delivery Program are contained in Appendix B for each asset category.

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.

Table 8.1: What are our Renewal Costs, Gap and Backlog (2018 $,000)?

Activity	Budget	Required	Gap	Backlog Year 1	Backlog Year 10
Caravan Park	28	43	15	9	153
Parks	97	72	-26	0	0
Saleyards	30	50	20	0	202
Buildings - Specialised	118	336	218	0	2,177
Emergency Services	0	0	0	0	0
Other Structure	0	12	12	0	118
Depot	0	20	20	2	197
Sporting Facilities	69	205	136	0	1,360
Administration Buildings	0	325	325	227	3,250
Swimming Pool	47	127	80	0	804
Buildings - Non-Specialised	0	18	18	5	175
Waste	0	25	25	38	249
Cemetery	0	3	3	0	32
Airport	0	0	0	0	0
Total	**389**	**1,235**	872	**281**	**8,717**

1. *Figures are based on the 10 year annual average amounts*

Council is investing significant funds on renewals in 2018 on selected parks, saleyards, buildings (specialised), sporting facilities swimming pool and waste assets. This is one-off expenditure and is reflected in a minimal backlog in Year 1. The backlog however increases over the life of the plan, as assets parks, building and waste deteriorate with age, and there is a need to continue investing in renewals.

An audit of playgrounds in Cootamundra has assisted Council to develop a renewal program for playgrounds. An audit is planned for Gundagai playgrounds. Scheduled renewal projects for 2018 include:

- Caravan park renewals
- Gundagai neighbourhood centre roof
- Buildings electrical renewals
- Tennis court resurfacing

The backlog after ten years reflects the lack of ongoing investment in renewals. The following graphs show the proposed expenditure on renewals over the next 10 years and the rolling backlog in any one year over that period. Two graphs are presented due to the high impact of the rolling backlog. Figure 8.1 shows that the backlog increases over the life of the plan. There is a need to invest additional funds in renewals if Council is to address this backlog.

Figure 8.1: What will we spend (2017 $,000) over the next 10 years on Renewal?

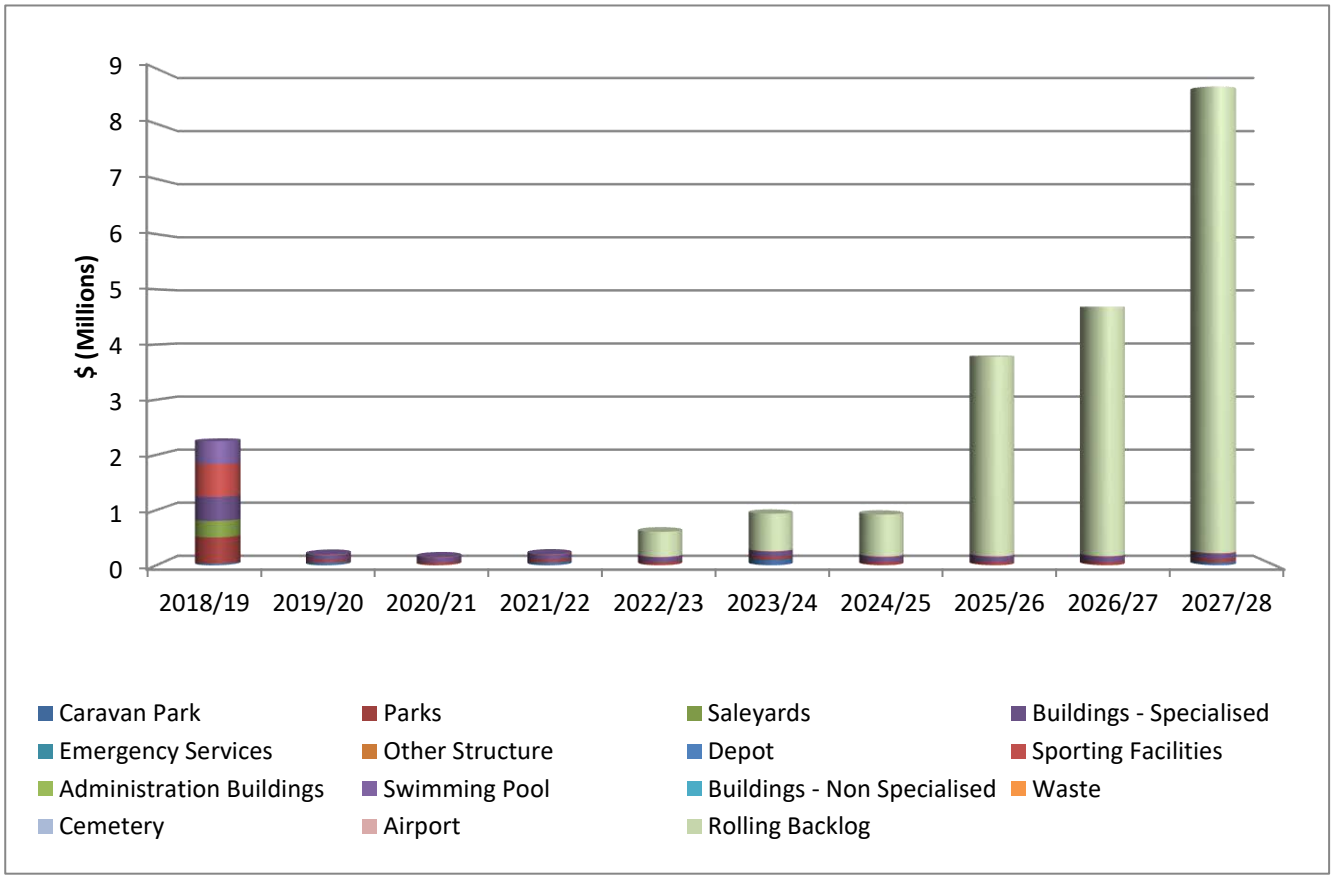
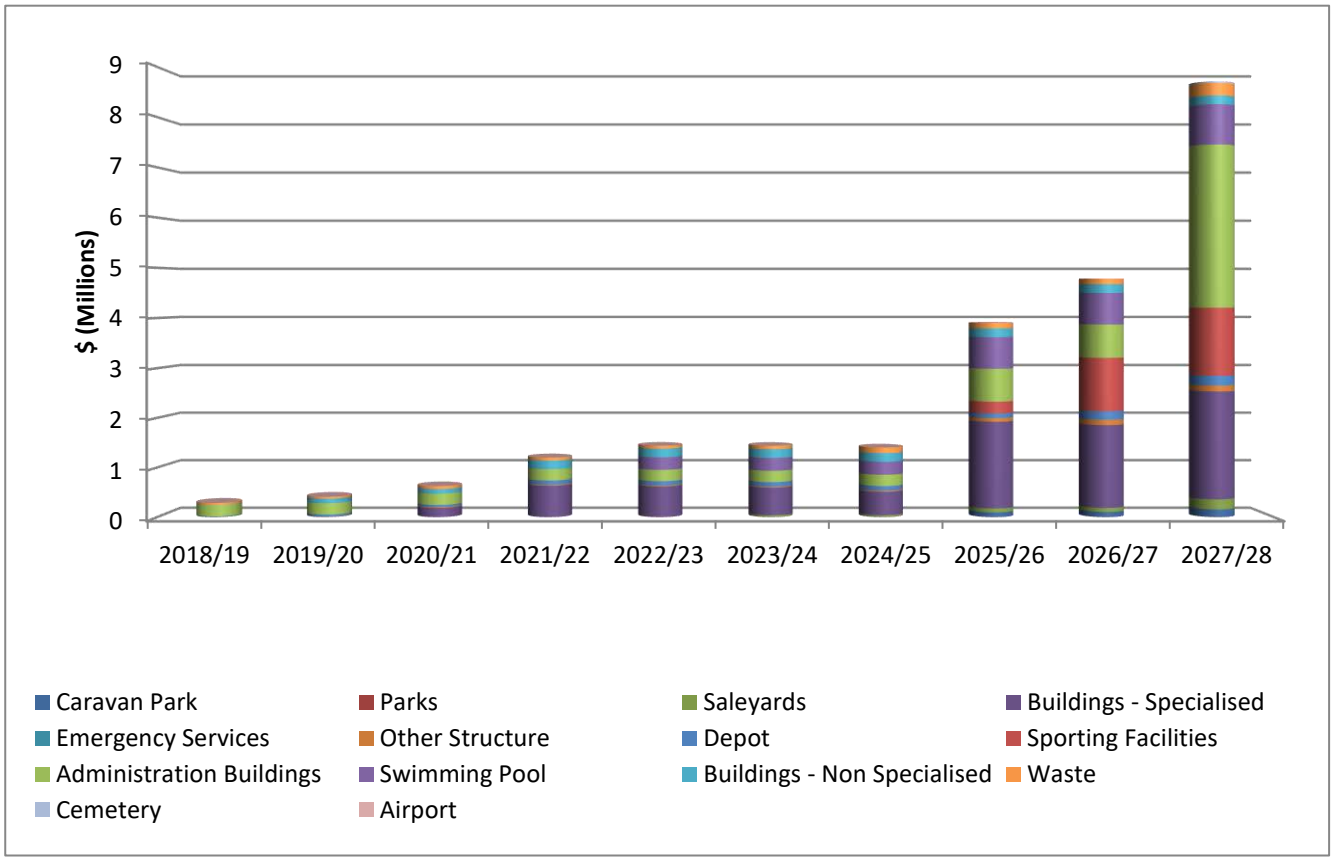


Figure 8.2 indicates that in any year the value of work exceeding the intervention levels set in this Asset Plan will reach $8.7 million at the end of 10 years. However, from Table 8.1, **when considering the renewals required over the next 10 years, an additional $872,000 per year would be required to ensure no backlog of works in 2027/28.**

Figure 8.2: What are the projected rolling backlog splits ($,000)?



Discussion:

This Buildings, Parks and Waste AM Plan reflects the high maintenance and operations costs associated with these asset classes. To provide an adequate level of service, buildings must be cleaned, fields mowed and garbage collected. This means Council's budget is expended keeping the assets operational. Whilst Council continually renews asset components that are reaching life expiry, additional investment in renewals is required to address the increasing backlog.

Given that the acquisition of many building, parks and waste assets can be externally funded, Council must also consider the life cycle costs associated with the new assets. Council will consider funding strategies to meet the life cycle costs associated with new assets.

9. Capital Upgrades & New Assets

Upgrades enhance an existing asset to provide a higher level of service, for example widening an existing road seal. 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 stormwater drainage 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.

Both capital types may be funded at least in part through Developer Contributions in the form of a Section 94 Contribution, a Voluntary Planning Agreement, or as part of a subdivision development

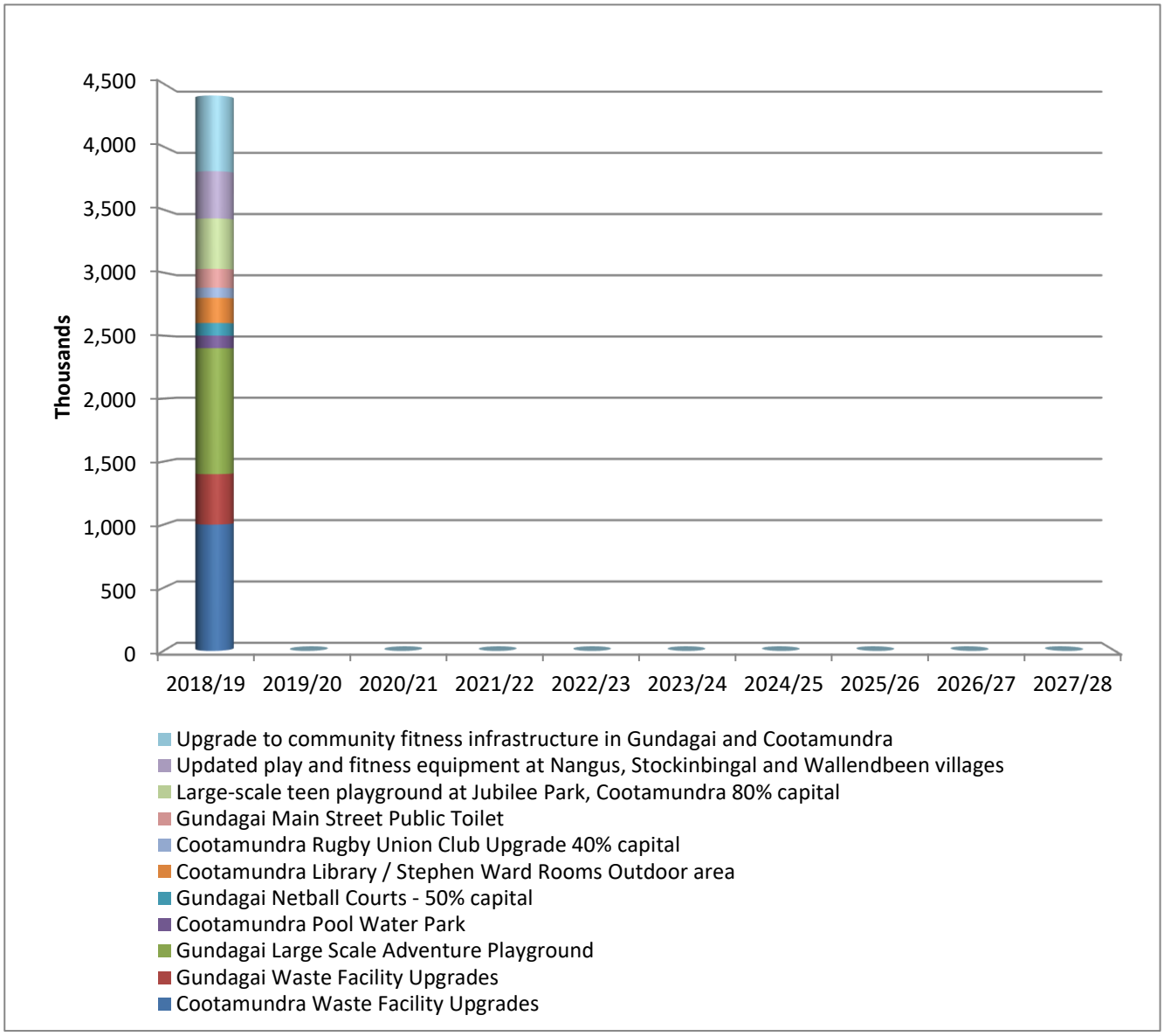
New assets and upgrade/expansion of existing assets are identified from various sources such as councillor or community requests, proposals identified by strategic plans or partnerships with other organisations. Candidate proposals are inspected to verify need and to develop a preliminary renewal estimate.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

Table 9.1: What are the upgraded / new assets proposed in 2018/19?

Asset Type	Description	Planned Expenditure $
Waste	Cootamundra Waste Facility Upgrades	1,000,000
Waste	Gundagai Waste Facility Upgrades	400,000
Parks	Gundagai Large Scale Adventure Playground	1,000,000
Swimming Pools	Cootamundra Pool Water Park	100,000
Sporting Facilities	Gundagai Netball Courts - 50% capital	100,000
Building-Specialised	Cootamundra Library / Stephen Ward Rooms Outdoor area	200,000
Sporting Facilities	Cootamundra Rugby Union Club Upgrade 40% capital	80,000
Buildings - Specialised	Gundagai Main Street Public Toilet	150,000
Parks	Large-scale teen playground at Jubilee Park, Cootamundra 80% capital	400,000
Parks	Updated play and fitness equipment at Nangus, Stockinbingal and Wallendbeen villages	375,000
Parks	Upgrade to community fitness infrastructure in Gundagai and Cootamundra	600,000
	Total	**$4,405,000**

Council has been fortunate to obtain grant funding to acquire new assets in 2018/19. These assets will also have renewal needs, and Council will be considering financial strategies to address the life cycle costs associated with new and upgraded assets.

Figure 9.1: What will we spend over the next 4 years on Upgraded or New Assets ($,000)?



The amounts in Figure 9.1 above have been drawn directly from the four year adopted budgets for buildings. There is no capital works budget for all buildings that extends past four years.

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 9 (poor condition), where the community don't require the asset (as they have raised concerns or complaints about the asset condition) may be considered to be a redundant asset or not utilised and therefore decommissioned and disposed unless it is considered critical infrastructure.

There are several ageing buildings throughout the Shire that are in a poor condition and require extensive expenditure if they are to provide an adequate level of service into the future. Council monitors building usage and renewal needs. Council is planning to review its portfolio of Council buildings and rationalise buildings usage.

Council is open to considering the disposal of surplus assets. There may be opportunity to dispose of unwanted and unused open space and use the proceeds of the sale to renew assets at well used parks.

Table 10.1: What assets are we planning to dispose of?

Asset	Reason	Year	Cost
None planned			

11. Financial Plan

As part of its funding strategy, Council has the option to supplement any or all of the current or new Building proposals that come into consideration for construction with borrowings. This strategy is heavily influenced by the monitoring of Councils Debt Service Ratio which is the capacity of Council to repay principal and interest.

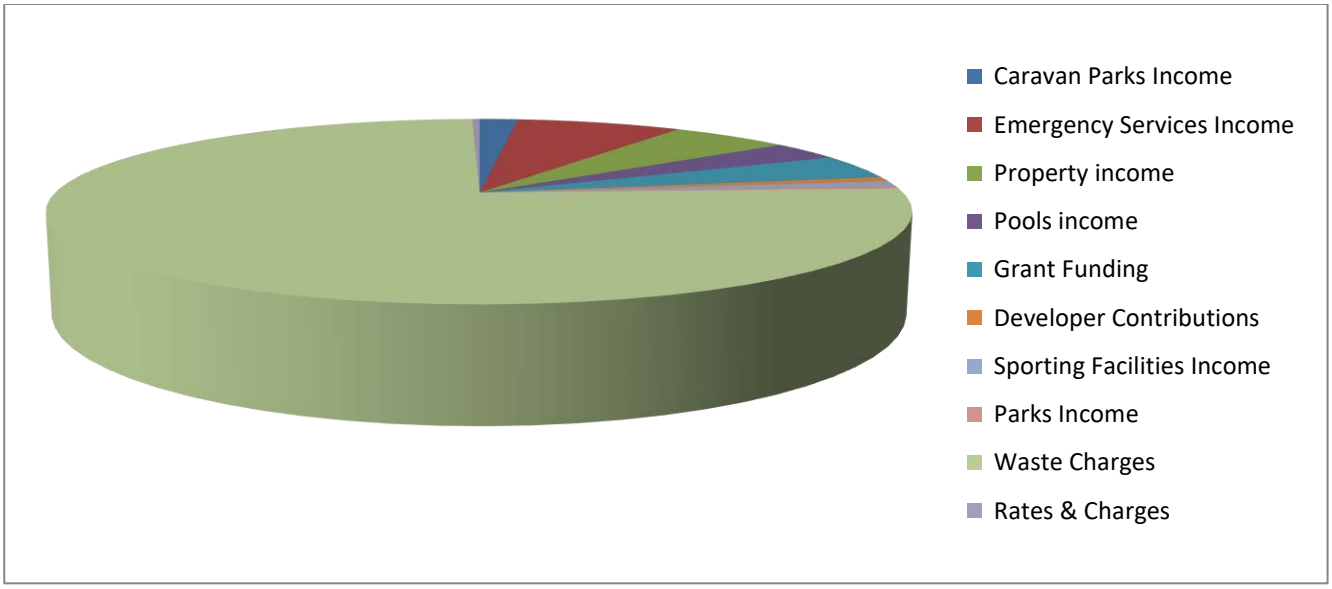
A summary of the funding requirements over the next 10 years is included in Appendix D, with the projected budget amounts being based on 2018 dollars.

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?

Item	10 year average budget (2018$)
Caravan Parks Income	66
Emergency Services Income	286
Property income	207
Pools income	122
Grant Funding	161
Developer Contributions	30
Sporting Facilities Income	31
Parks Income	20
Waste Charges	2,871
Rates & Charges	13
Total	**3,806**

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



12. Key Performance Measures

Key performance measures will be developed after Council has developed classification systems for buildings and parks hierarchy.

13. Plan Improvements

In addition to the Asset Management Strategy improvements, the following improvements in the way buildings, parks and waste assets are managed and planned are suggested:

Table 13.1: Plan improvements

Task	Description	Expected Completion
1. **Develop and implement a classification system for buildings**.	This will allow the level of service provided to each individual building to be varied, ensuring that those buildings with the highest utilisation, requiring the best presentation, increased response times and increased levels of renewal are treated differently to those that essentially provide a storage function. A simple ranking scheme of A, B and C would suffice; where A has the highest ranking. An extra class "O" could be proposed for buildings that are the responsibility of Council, but where the usual maintenance tasks are performed by the community groups or tenants who use them, rather than Council.	2018
2. **Develop and implement a park hierarchy and complete Plans of Management for parks in Gundagai**.	A parks hierarchy will enable the classification of parks from most important to least important. Classifications such as Regional. District and Local would be an option. This will ensure that premium park facilities which host regional events and attract people from a wide area, can receive more attention from Council than small drainage reserves and local pocket parks. It is suggested that Council consult with the community regarding the classification of parks as this is an issue likely to gather wide interest in the community. Council will be completing plans of management for parks in Gundagai.	2019
3. **Develop Levels of Service and Key Performance Measure**	Based on the Buildings Classification System and Parks Hierarchy. Levels of service are the fundamental building blocks of AM. To improve AM, it is very important to understand what levels of service your community wants and their willingness to pay. This first cut AM Plan contains generic levels of service however both building and park assets need be split into classifications, which should be used to develop CGRC specific Levels of Service and Key Performance Measures. In the development of key performance measures, consider a range of factors including: the operational cost of maintaining assets to the standard agreed with the community, customer complaints, vandalism and the input of third party organisations that use the facilities (sporting clubs, community groups etc).	2019

Task	Description	Expected Completion
4. Plan financial strategies for the renewal of buildings, parks and waste assets	Renewal of existing assets prevents the assets from failing service levels. Modelling for this plan shows that a significant cohort of building, parks and waste assets will deteriorate to intervention level in the coming decade. It is suggested that Council plan for renewals by developing a schedule of proposed capital renewal projects and associated costs for the next 3-5 years, based on condition information and staff judgement of future requirements. Furthermore, it is suggested that Council implement a policy that considers life cycle costs when accepting grant funding for new infrastructure. The financial strategies to plan for renewal needs may include a proposal for a Special Rate Variation.	2019
5. Consider future demand and plan for the rationalisation of assets.	Council has a wide portfolio of parks buildings and waste assets. • For Waste Assets, Council will engage a specialist consultant to develop a **Waste Strategy**. The Waste Strategy should include effective demand forecasting, asset utilisation and management of customer demand (pricing, regulation, incentives etc). Full cost recovery is an option for the waste asset portfolio, so Council should take advantage of this opportunity to plan for the management of this asset class. • For **Buildings and Parks** assets, Council should complete a thorough review: What is the demand for these assets? What is the best way of meeting this demand? It is possible that there are assets that are surplus to requirements, that could be disposed of, resulting in additional funding for the renewal of facilities in greater demand.	2019
6. Determine the critical assets	Rank the most critical assets in Council's building, parks and waste portfolio and list in Section 14. This will enable Council to target maintenance and renewal and prevent critical asset failure.	2019

14. 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.

One of the steps in the reduction of risks is the determination of **Critical Assets.** What makes an asset critical is the ***severity of the impact on the business*** if use of the asset were lost. 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.

The factors in Table 14.1 and 14.2 will be used to determine the most critical assets, with those scoring more than 40 being deemed as critical assets.

Tables 14.3 and 14.4 include the actions required to be undertaken by the Council to mitigate critical risks for buildings and park assets.

Critical assets, critical risks and treatment plans have not been developed at this time for waste assets.

Table 14.1 Critical Assets Assessment Criteria – Buildings

Factor	High Score (9)	Medium Score (6)	Low Score (3)
Number of staff housed	>100	30 – 99	10 - 30
Number of alternative buildings / facilities available	0	1 – 2	>2
Functionality of alternative	<50%	51% - 75%	> 75%
Business Contingency Plan prepared	No	Yes, but basic	Yes. Comprehensive
Frequency of use	Daily	> weekly	< weekly
Emergency management use	Yes		
Hazardous materials stored on site	Yes		
Criticality of the service to the community	Yes	Important but not essential	Nice to have
Value of Building	> $10 M	> $3 M < $10 M	< $3 M

Table 14.2 Critical Assets Assessment Criteria – Parks

Factor	High Score (9)	Medium Score (6)	Low Score (3)
Park Classification	Regional	District	Local
Number of playgrounds	>1	1	0
Number of amenity buildings	>1	1	0
Adjacent to waterway	Yes		
Usage – criticality to the community	Sporting facility	Passive recreation	Civic garden
Frequency of use	Daily	>daily	<weekly
Swimming Pool Facilities	Sporting facility	Passive recreation	

Table 14.3 Building Assets Critical Risks and Treatment Plans

Potential Risk	Risk Rating	Risk Treatment Plan
Destruction by fire	Medium	Regular inspection of all buildings to ascertain adequacy for fire detection systems. Check adequacy of insurance, install fire alarms and develop continuity plans as required.
Structural damage	High	Inspect, monitor and report
Failure to meet Disability Discrimination Act (DDA) requirements and other codes	High	Assess assets and optimise funding
Obsolescence	Medium	Adopted strategic planning to ensure replacement plans and timings are appropriate.
Damage by vandals	Medium	Regular inspection of all buildings to ascertain adequacy for security systems. Check adequacy of insurance.
No alternative building arrangements	High	Develop a robust Business Continuity Plan and update it regularly to ensure relevance. Have formal arrangements in place with owners of alternative buildings.

Table 14.4 Parks Assets Critical Risks and Treatment Plans

Asset at Risk	What can Happen	Risk Rating	Risk Treatment Plan
Playgrounds	Structural failure caused by the age and condition of equipment	Medium	Maintain playgrounds to Australian standards through regular inspections and maintenance
Playgrounds	Vandalism and/ or misuse of equipment making playground unsafe for usage	Medium	Regular inspections and responses from customer request system
Playgrounds	Softfall or matting not meeting the minimum requirements under the Australian Standard, potentially causing injury	Low	Regular inspections and responses from customer request system
Playgrounds	Discarded syringes left in the vicinity of playgrounds causing potential injury to users	High	Regular inspections and responses from customer request system
Irrigation	Failure to maintain surfaces: turf	High	Inspections and annual servicing of irrigation equipment
Ovals, sporting and parks lighting	Poles/ tower failure	Medium	Conduct a detailed audit and annual inspections. Install Vandal proof fittings
Amenities	Failure of service: plumbing or sewer	Medium	Maintain procedures, regular visual inspection and customer service request responses
Paths and footpaths	Structural failure caused by the age and condition of paths causing injuries to pedestrians	Low	Maintain procedures, regular visual inspection and customer service request responses

15. Appendix A: Maintenance Program

Maintenance Programs will be included in future versions of this Asset Management Plan

16. Appendix B: Renewals

Renewal Programs will be included in future versions of this Asset Management Plan

17. Appendix C: Upgrade / New Capital Works Program

Work Description	bud_yr1	bud_yr2	bud_yr3	bud_yr4
Cootamundra Waste Facility Upgrades	1,000,000			
Gundagai Waste Facility Upgrades	400,000			
Gundagai Large Scale Adventure Playground	1,000,000			
Cootamundra Pool Water Park	100,000			
Gundagai Netball Courts - 50% capital	100,000			
Cootamundra Library / Stephen Ward Rooms Outdoor area	200,000			
Cootamundra Rugby Union Club Upgrade 40% capital	80,000			
Gundagai Main Street Public Toilet	150,000			
Large-scale teen playground at Jubilee Park, Cootamundra 80% capital	400,000			
Updated play and fitness equipment at Nangus, Stockinbingal and Wallendbeen villages	375,000			
Upgrade to community fitness infrastructure in Gundagai and Cootamundra	600,000			
	4,405,000	**0**	**0**	**0**

18. Appendix D: 10 Year Financial Plan (2017 $,000)

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Income											
Caravan Parks Income	55	58	60	62	65	67	70	73	76	79	66
Emergency Services Income	267	271	275	279	283	288	292	296	301	305	286
Property income	181	186	191	197	203	209	215	222	229	236	207
Pools income	102	106	110	115	119	124	129	134	139	145	122
Grant Funding	1,546	26	19	13	4	0	0	0	0	0	161
Developer Contributions	50	50	50	50	50	50	0	0	0	0	30
Sporting Facilities Income	26	27	28	29	30	31	33	34	35	37	31
Parks Income	16	17	18	18	19	20	21	22	22	23	20
Waste Charges	2,391	2,487	2,586	2,690	2,797	2,909	3,025	3,146	3,272	3,403	2,871
Rates & Charges	11	11	11	12	12	13	13	14	15	15	13
Total Income	**4,645**	**3,238**	**3,349**	**3,464**	**3,583**	**3,711**	**3,798**	**3,941**	**4,089**	**4,243**	**3,806**
Operations											
Administration	569	586	602	620	640	660	679	699	719	740	651
Emergency Services Operations	687	700	718	736	755	774	794	815	836	858	767
Rates & Charges	351	351	355	359	361	375	385	396	407	418	376
Electricity and gas	225	236	248	260	273	281	295	310	325	342	279
Employee costs	589	604	619	628	647	666	644	664	684	704	645
Pool contract	112	114	117	119	122	124	127	130	132	135	123
Waste Collection	406	414	423	432	441	450	459	469	479	489	446
Waste processing	490	500	511	521	532	543	555	566	578	591	539
Supervision contract	393	401	410	418	427	436	445	455	464	474	432
Waste haulage costs	90	92	94	96	98	100	102	104	106	108	99
Total Operations	**3,911**	**3,998**	**4,095**	**4,189**	**4,295**	**4,411**	**4,487**	**4,607**	**4,731**	**4,858**	**4,358**
Maintenance											
Caravan Parks Maintenance	23	24	24	25	25	26	26	27	27	28	26
Buildings maintenance	359	366	374	382	390	398	406	415	424	433	395
Pools maintenance	69	70	72	73	75	76	78	80	81	83	76
Parks Maintenance	721	736	752	768	784	800	817	834	852	869	793
Tree Maintenance	200	204	208	213	217	222	227	231	236	241	220
Landfill maintenance	105	107	109	112	114	117	119	121	124	127	116
Aerodrome maintenance	35	36	36	37	38	39	40	40	41	42	38
Saleyards maintenance	73	74	76	77	79	81	82	84	86	88	80
Total Maintenance	**1,585**	**1,618**	**1,652**	**1,687**	**1,722**	**1,758**	**1,795**	**1,833**	**1,871**	**1,911**	**1,743**
Renewals											
Caravan Park	30	50	0	50	0	100	0	0	0	50	28
Buildings - Specialised	435	77	78	80	82	83	85	87	89	90	118
Swimming Pool	415	5	5	5	6	6	6	6	6	6	47

Item	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	Average
Parks	473	51	52	53	54	55	57	58	59	60	97
Sporting Facilities	597	9	9	10	10	10	10	10	11	11	69
Saleyards	300	0	0	0	0	0	0	0	0	0	30
Total Renewal	**2,250**	**192**	**145**	**198**	**151**	**254**	**158**	**161**	**164**	**218**	**389**
Upgrade / Expansion											
Cootamundra Waste Facility Upgrades	1,000	0	0	0	0	0	0	0	0	0	100
Gundagai Waste Facility Upgrades	400	0	0	0	0	0	0	0	0	0	40
Gundagai Large Scale Adventure Playground	1,000	0	0	0	0	0	0	0	0	0	100
Cootamundra Pool Water Park	100	0	0	0	0	0	0	0	0	0	10
Gundagai Netball Courts - 50% capital	100	0	0	0	0	0	0	0	0	0	10
Cootamundra Library / Stephen Ward Rooms Outdoor area	200	0	0	0	0	0	0	0	0	0	20
Cootamundra Rugby Union Club Upgrade 40% capital	80	0	0	0	0	0	0	0	0	0	8
Gundagai Main Street Public Toilet	150	0	0	0	0	0	0	0	0	0	15
Large-scale teen playground at Jubilee Park, Cootamundra 80% capital	400	0	0	0	0	0	0	0	0	0	40
Updated play and fitness equipment at Nangus, Stockinbingal and Wallendbeen villages	375	0	0	0	0	0	0	0	0	0	38
Upgrade to community fitness infrastructure in Gundagai and Cootamundra	600	0	0	0	0	0	0	0	0	0	60
Total Upgrade / Expansion	**4,405**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**441**
Total Expenditure	**12,150**	**5,808**	**5,892**	**6,074**	**6,169**	**6,423**	**6,440**	**6,601**	**6,766**	**6,986**	**6,931**