



2017/18

SEWER
ASSET MANAGEMENT PLAN

© Copyright 2014 – All rights reserved.

The Institute of Public Plants Engineering Australasia.

www.ipwea.org/namsplus

TABLE OF CONTENTS

1.	EXECUTIVE SUMMARY.....	1
	What is the purpose of the plan?.....	1
	What does the plan cover?.....	1
	What does it cost?.....	1
	What is the budget?.....	1
	What is Wagga Wagga City Council doing?.....	1
	What are the consequences?	1
	What is the next step?.....	1
	Glossary.....	3
2.	INTRODUCTION.....	10
	2.1 Background.....	10
	2.2 Goal of Asset Management	11
	2.3 Plan Framework	11
	2.4 Community Consultation	13
3.	LEVELS OF SERVICE.....	13
	3.1 Customer Research and Expectations	13
	3.2 Community Levels of Service	13
	3.3 Technical Levels of Service.....	14
4.	FUTURE DEMAND.....	17
	4.1 Demand Drivers	17
	4.2 Demand Management Plan	17
5.	LIFECYCLE MANAGEMENT PLAN	17
	5.1 Background Data.....	17
	5.2 Infrastructure Risk Management Plan.....	21
	5.3 Maintenance Plan	21
	5.4 Renewal/Replacement Plan.....	23
	5.5 Creation/Acquisition/Upgrade Plan	27
	5.6 Disposal Plan.....	27
	5.7 Service Consequences and Risks	27
6.	FINANCIAL SUMMARY	28
	6.1 Financial Statements and Projections	28
	6.2 Forecast Reliability and Confidence	29
7.	PLAN IMPROVEMENT AND MONITORING	30
	7.1 Status of Asset Management Practices	30
	7.2 Improvement Plan.....	31
	7.3 Monitoring and Review Procedures	31
	7.4 Performance Measures	31
9.	APPENDICES.....	33
	Appendix A Abbreviations.....	33

1. EXECUTIVE SUMMARY

What is the purpose of the plan?

This Asset Management Plan sets out the level of service Wagga Wagga City Council provides the community in relation to sewer assets. It uses financial information and technical asset data compared with the service levels to identify funding levels associated with managing the assets.

What does the plan cover?

The following assets are included in this plan.

Asset category	Dimension	Replacement Value
Sewer pipes	666,911.25m	\$209,498,979
Sewer pump stations	43	\$30,683,822
Sewer Treatment Plants	7	\$95,602,522
TOTAL		\$335,785,324

What does it cost?

The total cost to maintain the network and renew and upgrade assets identified in the plan is estimated to be \$134,179,904 over the next 10 years. This includes the following:

- \$21,340,000 to maintain sewer pipes and gravity mains,
- \$13,208,241 to maintain and operate pump stations,
- \$7,825,299 to maintain sewer treatment plants managed by Council,
- \$13,702,758 to renew identified earthenware pipes,
- \$8,320,419 to renew pump stations,
- \$1,974,458 to renew sewer treatment plants,
- \$60,030,591 to operate, maintain and renew sewer treatment plants managed under contract, and
- \$7,778,138 to construct new pump stations.

NB the estimated required budget to renew identified earthenware pipes is based on the 2017 NSW Reference Rates.

What is the budget?

The following table shows how much funding is available in the Long Term Financial Plan as at June 2017 compared to the estimated cost of managing the assets to meet the service levels of this plan.

Activity	Funding Level
maintain sewer pipes and gravity mains to clear blockages	100%
maintain and operate pump stations	100%
maintain sewer treatment plants managed by Council	100%
renew identified earthenware pipes	100%
renew pump stations	100%
renew sewer treatment plants	58%
operate, maintain and renew sewer treatment plants managed under contract	100%
construct new pump stations	87%

What is Wagga Wagga City Council doing?

Council will continue to:

- maintain, renew and upgrade sewer assets to meet service levels set by annual budgets,
- deliver the current level of maintenance across the sewer infrastructure network, and
- prioritise the renewal of existing sewer assets based on type and choke data and the budgets in the Long Term Financial Plan.

What are the consequences?

Given the Long Term Financial Plan June 2017 there are capital activities unable to be undertaken within the next 10 years. They are to build a new pump station in the northern growth area and renew identified assets at the Tarcutta treatment plant to the estimated value of \$82,053.

What is the next step?

The next important step is to develop solutions for the renewal and maintenance funding shortfalls for sewer assets.

Questions you may have

What is an Asset Management Plan?

Asset management planning is a comprehensive process to ensure delivery of services from infrastructure is provided in a financially sustainable manner.

An asset management plan details information about sewer assets including actions required to provide an agreed level of service, in the most cost effective manner. The plan defines the services to be provided, how the services are provided and what funds are required to provide the services.

What is this plan about?

This asset management plan covers the sewer infrastructure assets which support the community. These assets include pipes, pits, pump stations and treatment plants.

Glossary

Annual service cost (ASC)

- 1) Reporting actual cost
The annual (accrual) cost of providing a service including operations, maintenance, depreciation, finance/opportunity and disposal costs less revenue.
- 2) For investment analysis and budgeting
An estimate of the cost that would be tendered, per annum, if tenders were called for the supply of a service to a performance specification for a fixed term. The Annual Service Cost includes operations, maintenance, depreciation, finance/ opportunity and disposal costs, less revenue.

Asset

A resource controlled by an entity as a result of past events and from which future economic benefits are expected to flow to the entity. Infrastructure assets are a sub-class of property, plant and equipment which are non-current assets with a life greater than 12 months and enable services to be provided.

Asset category

Sub-group of assets within a class hierarchy for financial reporting and management purposes.

Asset class

A group of assets having a similar nature or function in the operations of an entity, and which, for purposes of disclosure, is shown as a single item without supplementary disclosure.

Asset condition assessment

The process of continuous or periodic inspection, assessment, measurement and interpretation of the resultant data to indicate the condition of a specific asset so as to determine the need for some preventative or remedial action.

Asset hierarchy

A framework for segmenting an asset base into appropriate classifications. The asset hierarchy can be based on asset function or asset type or a combination of the two.

Asset management (AM)

The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost effective manner.

Asset renewal funding ratio

The ratio of the net present value of asset renewal funding accommodated over a 10 year period in a long term financial plan relative to the net present value of projected capital renewal expenditures identified in an asset management plan for the same period [AIFMG Financial Sustainability Indicator No 8].

Average annual asset consumption (AAAC)*

The amount of an organisation's asset base consumed during a reporting period (generally a year). This may be calculated by dividing the depreciable amount by the useful life (or total future economic benefits/service potential) and totalled for each and every asset OR by dividing the carrying amount (depreciated replacement cost) by the remaining useful life (or remaining future economic benefits/service potential) and totalled for each and every asset in an asset category or class.

Borrowings

A borrowing or loan is a contractual obligation of the borrowing entity to deliver cash or another financial asset to the lending entity over a specified period of time or at a specified point in time, to cover both the initial capital provided and the cost of the interest incurred for providing this capital. A borrowing or loan provides the means for the borrowing entity to finance outlays (typically physical assets) when it has insufficient funds of its own to do so, and for the lending entity to make a financial return, normally in the form of interest revenue, on the funding provided.

Capital expenditure

Relatively large (material) expenditure, which has benefits, expected to last for more than 12 months. Capital expenditure includes renewal, expansion and upgrade. Where capital projects involve a combination of renewal, expansion and/or upgrade expenditures, the total project cost needs to be allocated accordingly.

Capital expenditure - expansion

Expenditure that extends the capacity of an existing asset to provide benefits, at the same standard as is currently enjoyed by existing beneficiaries, to a new group of users. It is discretionary expenditure, which increases future

operations and maintenance costs, because it increases the organisation's asset base, but may be associated with additional revenue from the new user group, eg. extending a drainage or road network, the provision of an oval or park in a new suburb for new residents.

Capital expenditure - new

Expenditure which creates a new asset providing a new service/output that did not exist beforehand. As it increases service potential it may impact revenue and will increase future operations and maintenance expenditure.

Capital expenditure - renewal

Expenditure on an existing asset or on replacing an existing asset, which returns the service capability of the asset up to that which it had originally. It is periodically required expenditure, relatively large (material) in value compared with the value of the components or sub-components of the asset being renewed. As it reinstates existing service potential, it generally has no impact on revenue, but may reduce future operations and maintenance expenditure if completed at the optimum time, eg. resurfacing or resheeting a material part of a road network, replacing a material section of a drainage network with pipes of the same capacity, resurfacing an oval.

Capital expenditure - upgrade

Expenditure, which enhances an existing asset to provide a higher level of service or expenditure that will increase the life of the asset beyond that which it had originally. Upgrade expenditure is discretionary and often does not result in additional revenue unless direct user charges apply. It will increase operations and maintenance expenditure in the future because of the increase in the organisation's asset base, eg. widening the sealed area of an existing road, replacing drainage pipes with pipes of a greater capacity, enlarging a grandstand at a sporting facility.

Capital funding

Funding to pay for capital expenditure.

Capital grants

Monies received generally tied to the specific projects for which they are granted, which are often upgrade and/or expansion or new investment proposals.

Capital investment expenditure

See capital expenditure definition.

Capitalisation threshold

The value of expenditure on non-current assets above which the expenditure is recognised as capital expenditure and below which the expenditure is charged as an expense in the year of acquisition.

Carrying amount

The amount at which an asset is recognised after deducting any accumulated depreciation / amortisation and accumulated impairment losses thereon.

Class of assets

See asset class definition.

Component

Specific parts of an asset having independent physical or functional identity and having specific attributes such as different life expectancy, maintenance regimes, risk or criticality.

Core asset management

Asset management which relies primarily on the use of an asset register, maintenance management systems, job resource management, inventory control, condition assessment, simple risk assessment and defined levels of service, in order to establish alternative treatment options and long-term cashflow predictions. Priorities are usually established on the basis of financial return gained by carrying out the work (rather than detailed risk analysis and optimised decision-making).

Cost of an asset

The amount of cash or cash equivalents paid or the fair value of the consideration given to acquire an asset at the time of its acquisition or construction, including any costs necessary to place the asset into service. This includes one-off design and project management costs.

Critical assets

Assets for which the financial, business or service level consequences of failure are sufficiently severe to justify proactive inspection and rehabilitation. Critical assets have a lower threshold for action than noncritical assets.

Current replacement cost (CRC)

The cost the entity would incur to acquire the asset on the reporting date. The cost is measured by reference to the lowest cost at which the gross future economic benefits could be obtained in the normal course of business or the minimum it would cost, to replace the existing asset with a technologically modern equivalent new asset (not a second hand one) with the same economic benefits (gross service potential) allowing for any differences in the quantity and quality of output and in operating costs.

Deferred maintenance

The shortfall in rehabilitation work undertaken relative to that required to maintain the service potential of an asset.

Depreciable amount

The cost of an asset, or other amount substituted for its cost, less its residual value.

Depreciated replacement cost (DRC)

The current replacement cost (CRC) of an asset less, where applicable, accumulated depreciation calculated on the basis of such cost to reflect the already consumed or expired future economic benefits of the asset.

Depreciation / amortisation

The systematic allocation of the depreciable amount (service potential) of an asset over its useful life.

Economic life

See useful life definition.

Expenditure

The spending of money on goods and services. Expenditure includes recurrent and capital outlays.

Expenses

Decreases in economic benefits during the accounting period in the form of outflows or depletions of assets or increases in liabilities that result in decreases in equity, other than those relating to distributions to equity participants.

Fair value

The amount for which an asset could be exchanged, or a liability settled, between knowledgeable, willing parties, in an arms length transaction.

Financing gap

A financing gap exists whenever an entity has insufficient capacity to finance asset renewal and other expenditure necessary to be able to appropriately maintain the range and level of services its existing asset stock was originally designed and intended to deliver. The service capability of the existing asset stock should be determined assuming no additional operating revenue, productivity improvements, or net financial liabilities above levels currently planned or projected. A current financing gap means service levels have already or are currently falling. A projected financing gap if not addressed will result in a future diminution of existing service levels.

Heritage asset

An asset with historic, artistic, scientific, technological, geographical or environmental qualities that is held and maintained principally for its contribution to knowledge and culture and this purpose is central to the objectives of the entity holding it.

Impairment Loss

The amount by which the carrying amount of an asset exceeds its recoverable amount.

Infrastructure assets

Physical assets that contribute to meeting the needs of organisations or the need for access to major economic and social facilities and services, eg. roads, drainage, footpaths and cycleways. These are typically large, interconnected networks or portfolios of composite assets. The components of these assets may be separately maintained, renewed or replaced individually so that the required level and standard of service from the network of assets is continuously sustained. Generally the components and hence the assets have long lives. They are fixed in place and are often have no separate market value.

Investment property

Property held to earn rentals or for capital appreciation or both, rather than for:

- (a) use in the production or supply of goods or services or for administrative purposes; or
- (b) sale in the ordinary course of business.

Key performance indicator

A qualitative or quantitative measure of a service or activity used to compare actual performance against a standard or other target. Performance indicators commonly relate to statutory limits, safety, responsiveness, cost, comfort, asset performance, reliability, efficiency, environmental protection and customer satisfaction.

Level of service

The defined service quality for a particular service/activity against which service performance may be measured. Service levels usually relate to quality, quantity, reliability, responsiveness, environmental impact, acceptability and cost.

Life Cycle Cost *

1. **Total LCC** The total cost of an asset throughout its life including planning, design, construction, acquisition, operation, maintenance, rehabilitation and disposal costs.
2. **Average LCC** The life cycle cost (LCC) is average cost to provide the service over the longest asset life cycle. It comprises average operations, maintenance expenditure plus asset consumption expense, represented by depreciation expense projected over 10 years. The Life Cycle Cost does not indicate the funds required to provide the service in a particular year.

Life Cycle Expenditure

The Life Cycle Expenditure (LCE) is the average operations, maintenance and capital renewal expenditure accommodated in the long term financial plan over 10 years. Life Cycle Expenditure may be compared to average Life Cycle Cost to give an initial indicator of affordability of projected service levels when considered with asset age profiles.

Loans / borrowings

See borrowings.

Maintenance

All actions necessary for retaining an asset as near as practicable to an appropriate service condition, including regular ongoing day-to-day work necessary to keep assets operating, eg road patching but excluding rehabilitation or renewal. It is operating expenditure required to ensure that the asset reaches its expected useful life.

- **Planned maintenance**
Repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown criteria/experience, prioritising scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.
- **Reactive maintenance**
Unplanned repair work that is carried out in response to service requests and management/ supervisory directions.
- **Specific maintenance**
Maintenance work to repair components or replace sub-components that needs to be identified as a specific maintenance item in the maintenance budget.
- **Unplanned maintenance**
Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.

Maintenance expenditure *

Recurrent expenditure, which is periodically or regularly required as part of the anticipated schedule of works required to ensure that the asset achieves its useful life and provides the required level of service. It is expenditure, which was anticipated in determining the asset's useful life.

Materiality

The notion of materiality guides the margin of error acceptable, the degree of precision required and the extent of the disclosure required when preparing general purpose financial reports. Information is material if its omission, misstatement or non-disclosure has the potential, individually or collectively, to influence the economic decisions of users taken on the basis of the financial report or affect the discharge of accountability by the management or governing body of the entity.

Modern equivalent asset

Assets that replicate what is in existence with the most cost-effective asset performing the same level of service. It is the most cost efficient, currently available asset which will provide the same stream of services as the existing asset is

capable of producing. It allows for technology changes and, improvements and efficiencies in production and installation techniques.

Net present value (NPV)

The value to the organisation of the cash flows associated with an asset, liability, activity or event calculated using a discount rate to reflect the time value of money. It is the net amount of discounted total cash inflows after deducting the value of the discounted total cash outflows arising from eg the continued use and subsequent disposal of the asset after deducting the value of the discounted total cash outflows.

Non-revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are not expected to generate any savings or revenue to the Council, eg. parks and playgrounds, footpaths, roads and bridges, libraries, etc.

Operations

Regular activities to provide services such as public health, safety and amenity, eg street sweeping, grass mowing and street lighting.

Operating expenditure

Recurrent expenditure, which is continuously required to provide a service. In common use the term typically includes, eg power, fuel, staff, plant equipment, on-costs and overheads but excludes maintenance and depreciation. Maintenance and depreciation is on the other hand included in operating expenses.

Operating expense

The gross outflow of economic benefits, being cash and non cash items, during the period arising in the course of ordinary activities of an entity when those outflows result in decreases in equity, other than decreases relating to distributions to equity participants.

Operating expenses

Recurrent expenses continuously required to provide a service, including power, fuel, staff, plant equipment, maintenance, depreciation, on-costs and overheads.

Operations, maintenance and renewal financing ratio

Ratio of estimated budget to projected expenditure for operations, maintenance and renewal of assets over a defined time (eg 5, 10 and 15 years).

Operations, maintenance and renewal gap

Difference between budgeted expenditures in a long term financial plan (or estimated future budgets in absence of a long term financial plan) and projected expenditures for operations, maintenance and renewal of assets to achieve/maintain specified service levels, totalled over a defined time (e.g. 5, 10 and 15 years).

Pavement management system (PMS)

A systematic process for measuring and predicting the condition of road pavements and wearing surfaces over time and recommending corrective actions.

PMS Score

A measure of condition of a road segment determined from a Pavement Management System.

Rate of annual asset consumption *

The ratio of annual asset consumption relative to the depreciable amount of the assets. It measures the amount of the consumable parts of assets that are consumed in a period (depreciation) expressed as a percentage of the depreciable amount.

Rate of annual asset renewal *

The ratio of asset renewal and replacement expenditure relative to depreciable amount for a period. It measures whether assets are being replaced at the rate they are wearing out with capital renewal expenditure expressed as a percentage of depreciable amount (capital renewal expenditure/DA).

Rate of annual asset upgrade/new *

A measure of the rate at which assets are being upgraded and expanded per annum with capital upgrade/new expenditure expressed as a percentage of depreciable amount (capital upgrade/expansion expenditure/DA).

Recoverable amount

The higher of an asset's fair value, less costs to sell and its value in use.

Recurrent expenditure

Relatively small (immaterial) expenditure or that which has benefits expected to last less than 12 months. Recurrent expenditure includes operations and maintenance expenditure.

Recurrent funding

Funding to pay for recurrent expenditure.

Rehabilitation

See capital renewal expenditure definition above.

Remaining useful life

The time remaining until an asset ceases to provide the required service level or economic usefulness. Age plus remaining useful life is useful life.

Renewal

See capital renewal expenditure definition above.

Residual value

The estimated amount that an entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life.

Revenue generating investments

Investments for the provision of goods and services to sustain or improve services to the community that are expected to generate some savings or revenue to offset operating costs, eg public halls and theatres, childcare centres, sporting and recreation facilities, tourist information centres, etc.

Risk management

The application of a formal process to the range of possible values relating to key factors associated with a risk in order to determine the resultant ranges of outcomes and their probability of occurrence.

Section or segment

A self-contained part or piece of an infrastructure asset.

Service potential

The total future service capacity of an asset. It is normally determined by reference to the operating capacity and economic life of an asset. A measure of service potential is used in the not-for-profit sector/public sector to value assets, particularly those not producing a cash flow.

Service potential remaining

A measure of the future economic benefits remaining in assets. It may be expressed in dollar values (Fair Value) or as a percentage of total anticipated future economic benefits. It is also a measure of the percentage of the asset's potential to provide services that is still available for use in providing services (Depreciated Replacement Cost/Depreciable Amount).

Specific Maintenance

Replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacement of air conditioning equipment, etc. This work generally falls below the capital/ maintenance threshold and needs to be identified in a specific maintenance budget allocation.

Strategic Longer-Term Plan

A plan covering the term of office of councillors (4 years minimum) reflecting the needs of the community for the foreseeable future. It brings together the detailed requirements in the Council's longer-term plans such as the asset management plan and the long-term financial plan. The plan is prepared in consultation with the community and details where the Council is at that point in time, where it wants to go, how it is going to get there, mechanisms for monitoring the achievement of the outcomes and how the plan will be resourced.

Sub-component

Smaller individual parts that make up a component part.

Useful life

Either:

- (a) the period over which an asset is expected to be available for use by an entity, or
- (b) the number of production or similar units expected to be obtained from the asset by the entity.

It is estimated or expected time between placing the asset into service and removing it from service, or the estimated period of time over which the future economic benefits embodied in a depreciable asset, are expected to be consumed by the Council.

Value in Use

The present value of future cash flows expected to be derived from an asset or cash generating unit. It is deemed to be depreciated replacement cost (DRC) for those assets whose future economic benefits are not primarily dependent on the asset's ability to generate net cash inflows, where the entity would, if deprived of the asset, replace its remaining future economic benefits.

Source: IPWEA, 2009, Glossary

Additional and modified glossary items shown *

2. INTRODUCTION

Community Strategic Plan

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

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

In the Community Strategic Plan the community came up with a number of priorities which are really important. These have been categorised into 5 strategic directions for the city. Asset management fits into the environment strategic direction and relates to the objectives of:

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

This Asset Management Plan relates to the outcomes of:

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

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

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

Fit for the Future

A Fit for the Future council is one that is:

- sustainable,
- efficient,
- effectively manages infrastructure and delivers services for communities, and
- has the scale and capacity to engage effectively across community, industry and government.

IPART in October 2015 deemed Wagga Wagga City Council ‘fit for the future’ as a stand-alone council, based on the actions and strategies identified in Council’s improvement proposal submitted to IPART in June 2015. The action plan outlines how Council is committed to a number of key improvement strategies to meet five of the benchmarks and trend towards the remaining two benchmarks by 2019/20. The improvement proposal can be accessed online at www.wagga.nsw.gov.au/fitforthefuture.

The key improvement strategies have included targeted efficiency (service) reviews of \$800,000 annually and increased revenue targets of \$300,000. Council will direct these funds towards the renewal of infrastructure and maintenance of assets, which will assist in reducing the infrastructure backlog.

A key consideration in the Council’s decision-making as part of this improvement plan is the ongoing commitment to improving our financial position and sustainability. This includes maintaining and improving the working funds result as well as achieving a balanced or preferably a surplus budget each financial year.

2.1 Background

This asset management plan is to demonstrate the responsive management of assets and to communicate funding needed to provide the required levels of service over a 10 year planning period.

The asset management plan follows the format for asset management plan recommended in Section 4.2.6 of the International Infrastructure Management Manual¹.

The infrastructure assets covered by this asset management plan are shown in Table 1.

Table 1: Assets covered by this Plan

Asset category	Amount	Current Replacement Value
Sewer pipes	666,911.25m	\$209,498,979
Sewer pump stations	43	\$30,683,822
Sewer Treatment Plants	7	\$95,602,522
TOTAL		\$335,785,324

Source: Wagga Wagga City Council General Purpose Financial Statements for the year end 30 June 2016 and Wagga Wagga City Council asset data

2.2 Goal of Asset Management

The organisation exists to provide services to the community. Some of these services are provided by infrastructure assets. We have acquired infrastructure assets by 'purchase', by contract, construction by our staff and by dedication of assets constructed by developers and others to meet increased levels of service.

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

- providing a defined level of service and monitoring performance,
- managing the impact of growth through demand management and infrastructure investment,
- taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- identifying, assessing and appropriately controlling risks, and
- having a long-term financial plan which identifies required, affordable expenditure and how it will be financed.²

2.3 Plan Framework

Key elements of the plan are:

- levels of service – specifies the services and levels of service to be provided by the organisation,
- future demand – how this will impact on future service delivery and how this is to be met,
- life cycle management – how Council will manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- asset management practices,
- monitoring – how the plan will be monitored to ensure it is meeting organisation's objectives,
- asset management improvement plan.

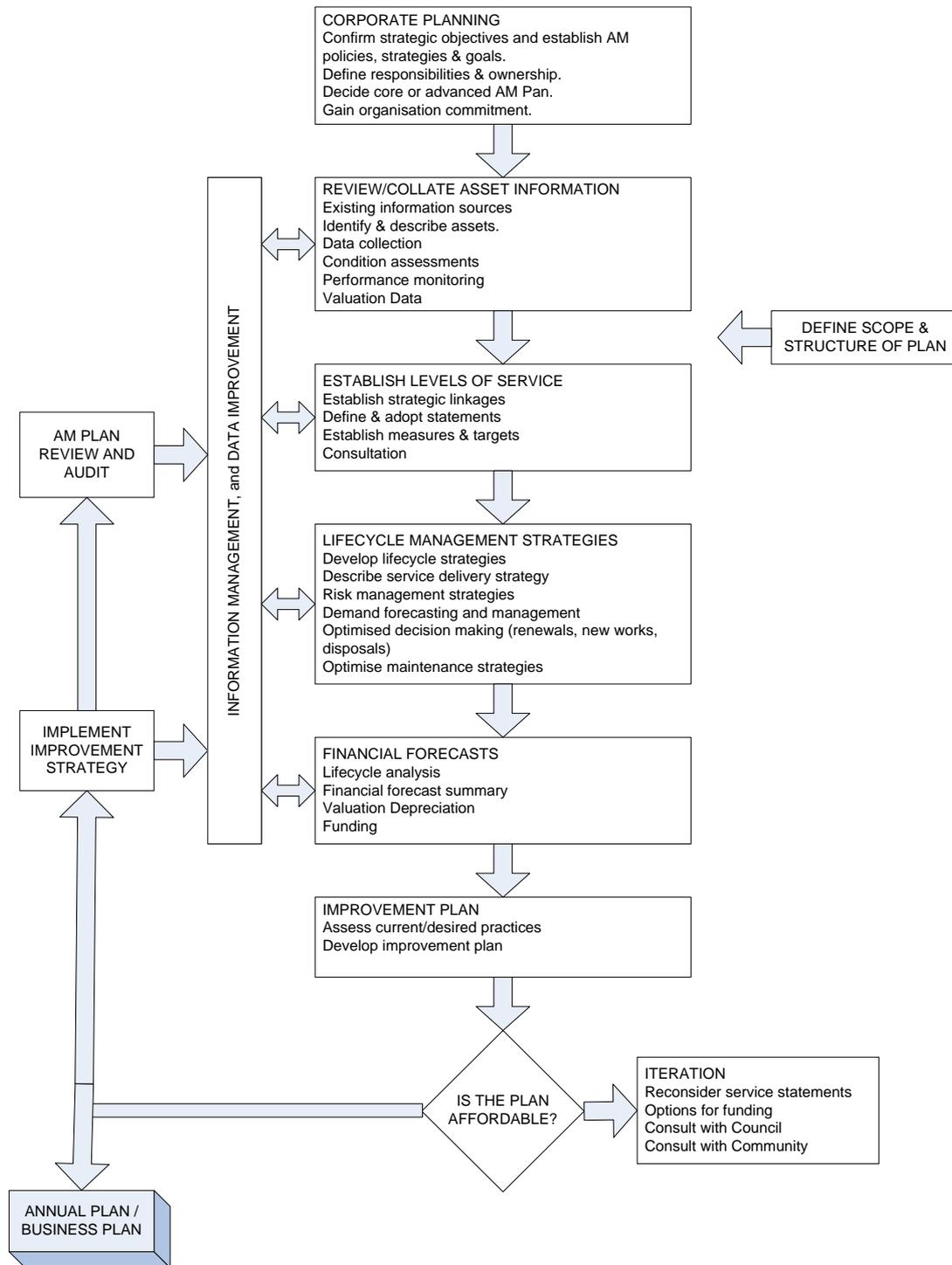
A road map for preparing an asset management plan is shown below in Figure 1.

¹ IPWEA, 2011, Sec 4.2.6, *Example of an Asset Management Plan Structure*, pp 4 | 24 – 27.

² Based on IPWEA, 2011, IIMM, Sec 1.2 p 1 | 7.

Road Map for preparing an Asset Management Plan

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



2.4 Community Consultation

During the community consultation for the Community Strategic Plan in 2016 there was a very small number of people who raised the need for more sewer services in the rural villages.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Wagga Wagga City Council has conducted local government satisfaction surveys since 2006. This telephone survey samples residents on the levels of satisfaction with Council services and the importance of these services. Points worth noting for sewer assets are:

2015	long term planning for Wagga was rated as a high priority
2012	the community were satisfied with sewer services
2006	the community were satisfied with sewer services

Source http://www.wagga.nsw.gov.au/__data/assets/pdf_file/0010/38944/Report-Wagga-Wagga-Community-15-11-23.pdf

3.2 Community Levels of Service

Service levels are defined service levels in two terms, community levels of service and technical levels of service.

The community levels of service measure how the community receives the service and whether the organisation is providing community value.

The community levels of service measures used in the asset management plan are:

Quality	How good is the service?
Capacity/Utilisation	Is the service over or under used?

Condition is rated as described below.

Condition Grading	Description of Condition
1	Excellent: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Average: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

The current community service levels are detailed in Table 2. The table includes the service objectives, the performance measure process and the current performance of the total network.

Table 2: Community Level of Service

Service Attribute	Service Objective	Performance Measure Process	Current Performance of Total Network
COMMUNITY OUTCOMES			
Maintain infrastructure assets			
COMMUNITY LEVELS OF SERVICE – Pipes			
Condition	Pipes in high priority areas made from earthenware and asbestos cement are renewed as required	Internal review of type data 2017	27% (179km) of the network is earthenware and asbestos cement
COMMUNITY LEVELS OF SERVICE – Pump Stations – structural elements			
Condition – pump stations structure	Structural elements of the pump stations in condition 4 and 5 are remediated as planned	Internal review 2017	Condition 1 = 13% Condition 2 = 85% Condition 3 = 0% Condition 4 = 2% Condition 5 = 0%
Capacity	Structural elements of pump stations have the capacity to store and pump required volumes of sewage	Internal review 2017	Condition 1 = 74% Condition 2 = 0% Condition 3 = 0% Condition 4 = 10% Condition 5 = 8% Unknown = 8%
COMMUNITY LEVELS OF SERVICE – Pump Stations – pumps			
Condition	Replace pumps not made by the preferred supplier when they reach the end of their useful life	Internal review 2017	19 pumps have been identified for renewal
COMMUNITY LEVELS OF SERVICE – Treatment Plants			
Condition	Refurbish treatment plant elements in condition 4 and 5	Internal review 2017	100% treatment plants are condition 3 or above

3.3 Technical Levels of Service

Technical Levels of Service – Supporting the community service levels are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the organisation undertakes to best achieve the desired community outcomes and demonstrate effective organisational performance.

Technical service measures are linked to annual budgets covering:

- maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (eg cleaning pipes and serving pumps),
- renewal – the activities that return the service capability of an asset up to that which it had originally (eg frequency and cost of road resurfacing and pavement reconstruction, pipeline replacement and pump station component replacement), and
- upgrade – the activities to provide a higher level of service (eg replacing a pipeline with a larger size) or a new service that did not exist previously (eg a new treatment plant).

Table 3 shows the technical levels of service targets, the methodology we will use to measure our performance, the current performance and funding levels of these targets based on the Long Term Financial Plan June 2017 compared to the estimated required budget. The estimated required renewal budgets are based on the unit rates from the NSW Reference Rate Manual 2017.

Table 3: Technical Levels of Service

Service Attribute	Service Objective	Activity Measure Process	Current Performance *	Estimated Required Budget**	Current Budget as per the Long Term Financial Plan***	Current Funding Ratio (Current Budget/Required Budget)
Maintain sewer pipes	Maintain sewer pipes and gravity mains to clear blockages	Jetting and root cutting, clearing blockages, small segment repairs, odour control – target is 500m per week	Estimated 500m per week	\$21,340,000 over 10 years	\$21,340,000 over 10 years	100%
Maintain and operate pump stations	Maintain pump stations to manage odour. Service pumps to meet expected useful life. Operate pump stations	Clean pump stations daily. Pumps pulled and checked 3 monthly and serviced every 6 months	Pump stations cleaned every 2 days. Pumps are pulled and serviced as scheduled.	\$13,208,241 over 10 years	\$13,208,241 over 10 years	
Operate and maintain sewer treatment plants at Forrest Hill, Collingullie, Tarcutta, Uranquinty (and maintenance managed outside sewer contract at Koorungal and Narrung)	Maintain the sewer treatment plants to ensure sewage is treated efficiently at Forrest Hill, Collingullie, Tarcutta, Uranquinty and conduct maintenance managed outside sewer contract at Koorungal and Narrung Street treatment plants	Weed spraying, mowing, minor repairs and mechanical and electrical repairs	Maintained as required	\$7,825,299 over 10 years	\$7,825,299 over 10 years	100%
Renew sewer pipes	Renew pipes made from earthen ware and asbestos cement over the next 30 years	Material data captured. Prioritised based on number chokes recorded per length of pipe. Based on unit rate from NSW Reference Rates 2017.	Prioritised renewal list developed based on data	\$13,702,758 over 10 years	\$13,756,655 over 10 years	100%
Renew sewer pump stations	Refurbish sewer pump station assets in condition 4 and 5 and sewer pumps as required	The condition of pump stations has been estimated via a desk top review in 2017. In addition there is a structural condition assessment being undertaken on pump stations in 2017. This is being conducted by an external contractor.	17 pump stations identified for renewal in the Long Term Financial Plan as at June 2017	\$8,320,419 over 10 years	\$8,320,419 over 10 years	100%

Service Attribute	Service Objective	Activity Measure Process	Current Performance *	Estimated Required Budget	Current Budget as per the Long Term Financial Plan as at June 2017	Current Funding Ratio (Current Budget/Required Budget)
Renew sewer treatment plants	Refurbish assets at sewer treatment plants when they are condition 4 and 5	Collingullie, Tarcutta and Uranquinty identified as requiring renewal	Collingullie Treatment Plant designs to be developed. Tarcutta concept developed Uranquinty identified in Long Term Financial Plan	Collingullie - \$40,781 Tarcutta - \$195,000 Uranquinty - \$520,000	Collingullie \$40,781 Tarcutta \$112,947 Uranquinty - \$520,000	100% for Collingullie and Uranquinty Tarcutta – 58%
Renew and upgrade the sewer treatment plant at Forest Hill	Renew and upgrade identified assets at Forrest Hill Treatment Plant	Assets requiring renewal and upgrade have been identified	Functional design report developed	\$1,218,677 over 10 years	\$1,218,677 over 10 years	100%
New pump stations	Increase the network of sewer pump stations to manage increased demand	4 new pump stations have been identified as required	3 pump stations are identified in the Long Term Financial Plan	\$7,778,138 over 10 years	\$6,778,138 over 10 years	87%
Operate, maintain and renew sewer treatment plants at Narrung, Koorngal and Bomen (contract only)	Provide sewer treatment services to the community	Contract management	Currently Narrung, Koorngal and Bomen treatment plants are managed under the Sewer 2010 contract	\$60,030,591 for 10 years	\$60,030,591 for 10 years	100%

*Scenario 1, what we would like to do based on asset register data

**Scenario 2, what we should do with existing budgets

Council has additional adopted service levels for the operation of the sewer network which are detailed in the Sewer Business Plan relating to the service of managing sewage. This includes response times to chokes for example. The service levels in this asset management complement these service levels.

4. FUTURE DEMAND

4.1 Demand Drivers

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

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

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

4.2 Demand Management Plan

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

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

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

5. LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the organisation plans to manage and operate the assets at the agreed levels of service (defined in Section 3) while optimising life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The age profile of the assets included in this asset management plan are included in Table 4 and Figures 2 and 3 below.

Table 4: Construction Date – Sewer Treatment Plants

Sewer Treatment Plants	Date of Construction
Narrung	1952 – refurbished in 2010
Koorinal	1961 – refurbished in 2010
Bomen	2004
Forest Hill	1970, with expansion in 1976, 1990 and 1993
Collingullie	2006
Tarcutta	1991
Uranquinty	1986
Mangoplah	2016

Mangoplah village has the newest treatment plant of the network which was built in 2016. Narrung and Koorinal were both upgraded in 2010. Bomen and Collingullie were both constructed since 2000. Forest Hill was built in 1970 and has been upgraded 4 times. Tarcutta and Uranquinty were both built prior to 2000.

Figure 2: Construction Date – Sewer Pump Stations

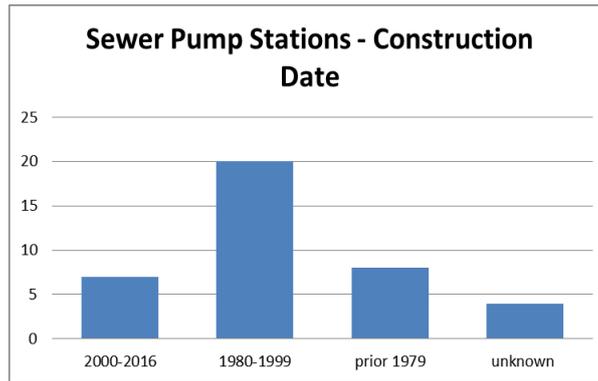
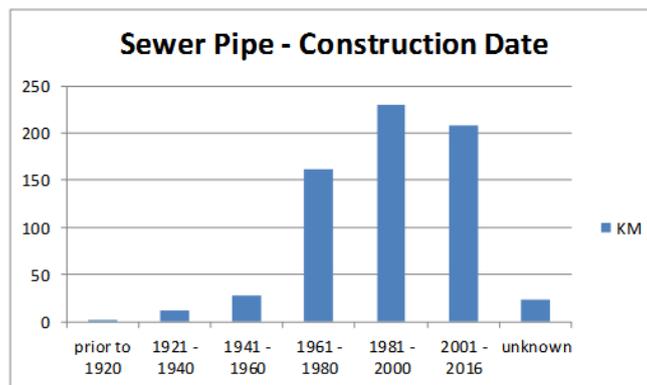


Figure 3: Construction Date – Sewer Pipes



Source: Council’s data as at January 2017

Almost half of the pump stations were built between 1980 and 2000, and another 7 were built in the last 16 years. According to the data about a quarter of the network is older than 36 years of age.

As the graph above shows the network has increased considerably over the last 16 years with the new developments, there was also significant expansion of the network between 1960 and 2000. A large majority of the sewer pipe network is less than 60 years of age, but there is a significant proportion of the network approaching the end of their useful design life.

5.1.2 Asset capacity and performance

Required upgrade and new assets are identified in the Sewer Development Servicing Plan of 2015.

The Sewer Business Plan of 2011 identified capital projects required over a 30 year period in relation to new assets, renewal, upgrade, developer provided assets, the backlog and strategic operations. This list of high level projects was considered during the development of this asset management plan.

5.1.3 Asset condition

The condition of the sewer pump stations was assessed by an external contractor in 2012 as part of the revaluation of the asset category. The next structural assessment is due in 2017 as part of the revaluation.

Each pump in the network is pulled every three months and checked. Every six months they are serviced.

Wagga Wagga City Council is currently working on the development of a remote system to monitor the sewer pump stations. When available, this data will be assessed to condition rate the pump stations and pump maintenance will be recorded in this system.

From an operational perspective, sewer pipes are not condition rated. There are no plans to condition rate the pipes as renewal is based on type and prioritised based the number of chokes.

The condition of the sewer treatment works was assessed by an external contractor in 2012 as part of the revaluation of the asset category. The next assessment is due in 2017 as part of the revaluation.

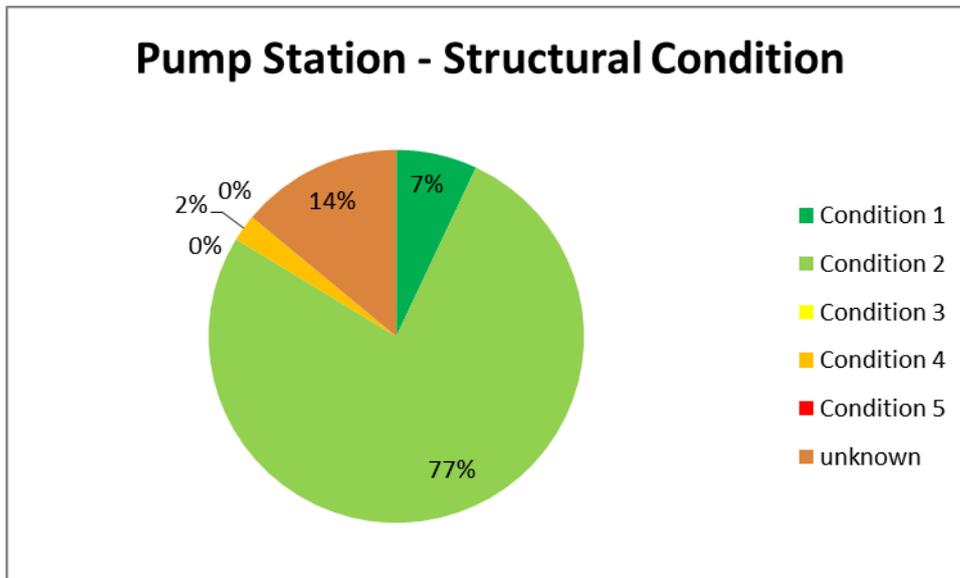
Condition is measured using a 1 – 5 grading system³ as detailed in Table 6.

Table 6: Simple Condition Grading Model

Condition Grading	Description of Condition
1	Excellent: only planned maintenance required
2	Good: minor maintenance required plus planned maintenance
3	Average: significant maintenance required
4	Poor: significant renewal/rehabilitation required
5	Very Poor: physically unsound and/or beyond rehabilitation

The condition profile of pump stations is shown in the Figure 4 below.

Figure 4: Pump Station Structure Condition



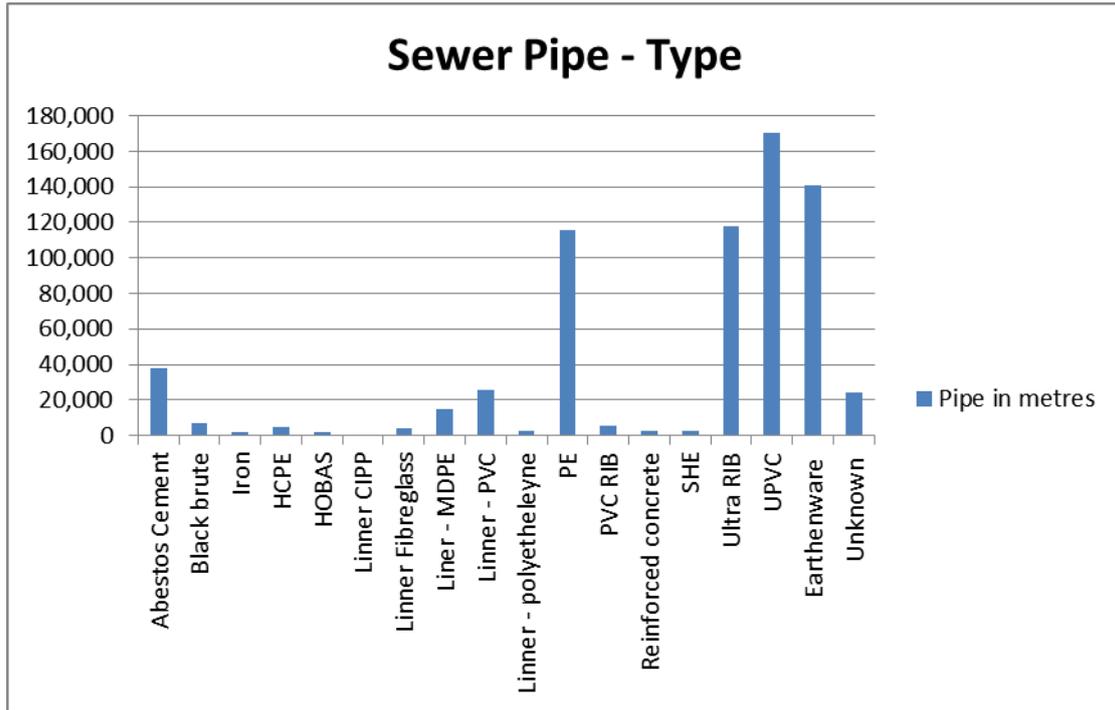
Source: Council’s data January 2017

Treatment plants at Tarcutta and Collingullie are rated in good condition, while Forest Hill and Uranquinty are rated as average. The treatment plant at Mangoplah is rated as being excellent. Narrung, Bomen and Koorngal are managed privately on behalf of Council, the contract requires these treatment plants are in excellent condition at the end of the contract, which is 2022/23.

The proportion of each type of sewer pipe is illustrated by Figure 5 below.

³ IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

Figure 5: Pipe Network by Type



Source: Council’s data January 2017

This plan recommends the renewal of earthenware and asbestos cement over the next 30 years. This type of material makes up 27% of the sewer pipe network.

5.1.4 Asset valuations

The value of sewer reported in Note 9 of the Financial Statements as at 30 June 2016 covered by this asset management plan is shown in Table 7 below. Assets were last re-valued in 2012 and are valued at fair value. The table includes the current fair value of each asset category, along with the residual value, and the resulting depreciable amount. It then details the written down value of each asset category and the annual depreciation expense.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time. The below table also includes two ratios, this first shows the depreciation expense over the depreciable amount of the asset category and the second indicates how much is allocated to renew each asset category based on the current budget compared to the depreciable amount.

Table7: Sewer Network Financial Data

	Fair Value	Residual Value	Depreciable Amount	Written Down Value	Annual Depreciation Expense	Rate of Annual Asset Consumption	Rate of Annual Asset Renewal*
Pipes	\$209,498,979	\$75,652,370	\$133,846,609	\$153,440,203	\$1,697,075	1.27%	1.02%
Sewer Pump Stations	\$30,683,823	\$8,704,583	\$21,979,240	\$70,451,511	\$522,804	2.38%	3.77%
Sewer Treatment Plants	\$95,602,522	\$3,141,622	\$92,460,901	\$70,451,511	\$2,753,489	2.98%	

Data source: Wagga Wagga City Council’s financial data December 2016. Figures as at 30 June 2016.

*Based on 2017/18 renewal budgets in the Long Term Financial Plan as at June 2017

5.1.5 Historical Data

Data for the sewer network pipe is captured in Council’s asset register. This includes data on type, location, size, fall of pipe and replacement costs.

Sewer treatment plant asset data for those managed by Council is currently stored in spread sheets. Asset data for the treatment plants managed by a private contractor on behalf of Council is captured in their asset register.

Data for sewer pump stations and pumps is currently stored in spread sheets.

5.2 Infrastructure Risk Management Plan

An assessment of risks associated with service delivery from sewer assets has identified critical assets that will result in loss or reduction in service from infrastructure assets or a financial shock to the organisation if the assets there fail. The assessment process identified the highest priority risks across the local government area, the likelihood of the risk event occurring, the consequences should the event occur and developed a risk rating. This assessment was based on Council’s risk matrix below.

Likelihood	Almost Certain	Medium	High	High	Extreme	Extreme
	Likely	Medium	Medium	High	High	Extreme
	Possible	Low	Medium	High	High	Extreme
	Unlikely	Low	Low	Medium	Medium	High
	Rare	Low	Low	Medium	Medium	High
		Insignificant	Minor	Moderate	Major	Catastrophic
Consequence						

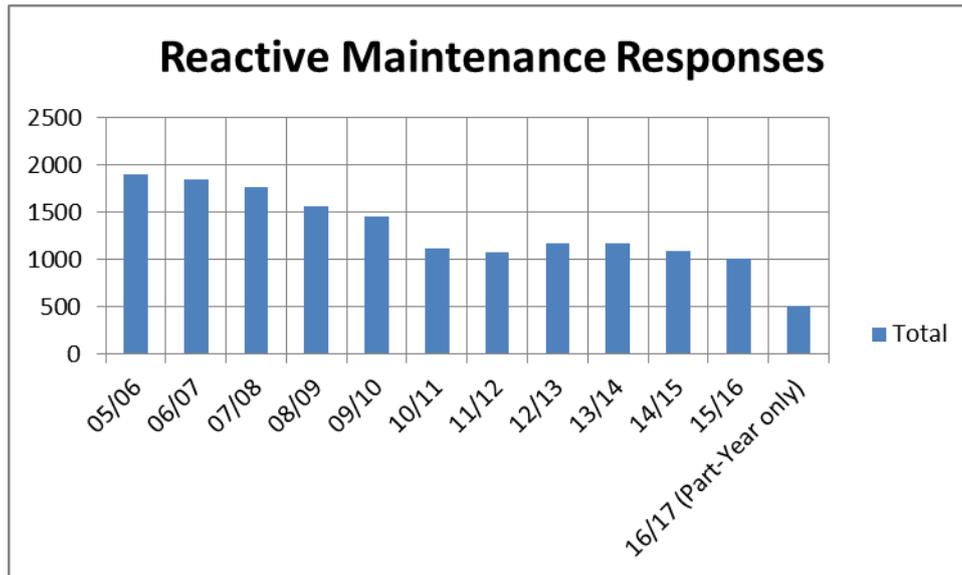
The following sewer assets have been assessed as having critical risks (those rated as high or extreme) associated with them:

- sewer pipes – rising mains
- sewer pipes – gravity mains
- sewer treatment plants, and
- pump stations.

5.3 Maintenance Plan

At present most day to day sewer network maintenance is undertaken in response to a defect being noticed by Council staff (either during routine inspections or on the job) or by identified by the community. These defects include blockages, odour incidents, pump failure and breakages. Over the last 10 years Council has responded to an average of 1,306 defects per year. The number of reactive maintenance activities undertaken by Council each year is illustrated in Figure 5 below.

Figure 6: Reactive maintenance responses per year since 2005/16



Major reactive tasks include (but are not limited to) cleaning to remove blockages in the network, fixing minor breakages in pipes and minor repairs on pumps. Major maintenance activities to remediate relatively small sections of the sewer pipe network are also undertaken each year. Assessment and prioritisation of this maintenance is undertaken by Council staff using experience and judgement.

Each pump in the network is pulled every 3 months and all wearing parts are checked. Every 6 months the pumps are serviced with a full oil change.

The maintenance budgets for sewer pipes and pump stations are considered adequate given the size of the network. As the network increases in size this will not be the case if budgets don't increase to accommodate more assets.

The maintenance and operational budgets for the sewer treatment plants in Forest Hill, Tarcutta, Uranquinty, Mangoplah and Collingullie are considered adequate. The major maintenance activities include minor repairs to infrastructure, mechanical and electrical repairs, weed spraying and mowing. These activities are undertaken in response to an identified defect.

The maintenance of the sewer treatment plants managed by a private contractor on behalf of Council is considered adequate until 2022/23.

5.3.1 Operations and Maintenance Strategies

The organisation will operate and maintain assets to provide the defined level of service to approved budgets in the most cost-efficient manner. The operation and maintenance activities include:

- scheduling operations activities to deliver the defined level of service in the most efficient manner,
- undertaking maintenance activities through a planned maintenance system to reduce maintenance costs and improve maintenance outcomes. Undertake cost-benefit analysis to determine the most cost-effective split between planned and unplanned maintenance activities (50 – 70% planned desirable as measured by cost),
- maintain a current infrastructure risk register for assets and present service risks associated with providing services from infrastructure assets and reporting extreme and high risks and residual risks after treatment to management and Council,
- review current and required skills base and implement workforce training and development to meet required operations and maintenance needs,
- review asset utilisation to identify underutilised assets and appropriate remedies, and over utilised assets and customer demand management options,
- maintain a current hierarchy of critical assets and required operations and maintenance activities,
- develop and regularly review appropriate emergency response capability, and

- review management of operations and maintenance activities to ensure Council is obtaining best value for resources used.

Asset hierarchy

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

The way the data for sewer assets is structured is shown in Table 8.

Table 8: Asset Hierarchy

Asset Category	Data Hierarchy
Sewer pipes	Captured at the segment level. Unit is metre. Type data is captured.
Pump Stations	Data captured on the structure of the well and the pump.
Treatment Plants	Data currently captured at the treatment plant level for plants managed by Council. The assets at the sewer treatment plants managed by a private operator are captured at the component level in their asset register.

Critical Assets

Critical assets are those assets which have a high consequence of failure but not necessarily a high likelihood of failure. By identifying critical assets and critical failure modes, organisations can target and refine investigative activities, maintenance plans and capital expenditure plans at the appropriate time. The critical assets in the sewer network are the treatment plants and sewer pump stations.

5.3.2 Summary of future maintenance expenditures

The required annual maintenance budget for sewer assets is equal to the maintenance budgets in the Long Term Financial Plan as at June 2017.

5.4 Renewal/Replacement Plan

Asset renewal and replacement is typically undertaken to either:

- ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (eg replacing a pipe), or
- to ensure the infrastructure is of sufficient quality to meet the service requirements (eg roughness of a road).⁴

It is possible to get some indication of capital renewal and replacement priorities by identifying assets or asset groups that:

- have a high consequence of failure,
- have a high utilisation and subsequent impact on users would be greatest,
- the total value represents the greatest net value to the organisation,
- have the highest average age relative to their expected lives,
- are identified in the asset management plan as key cost factors,
- have high operational or maintenance costs, and
- where replacement with modern equivalent assets would yield material savings.⁵

⁴ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

⁵ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3|66.

Renewal and replacement expenditure is major work which does not increase the asset’s design capacity but restores, rehabilitates, replaces or renews an existing asset to its original or lesser required service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new plants expenditure.

5.4.1 Renewal plan

The renewal plan for sewer assets has been developed based on asset data, including useful life, material type, date built, and condition.

Table 9 below shows the renewal ranking criteria used for each asset category.

Table 9: Renewal Ranking Criteria

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

The useful lives of sewer assets are shown in Table 10. Asset useful lives were last reviewed in 2013 as part of the sewer revaluation. The sewer assets are due to be revalued in 2017

Table 10: Useful Lives of Assets

Asset (Sub)Category	Useful life (years)
Pipe – iron	40*
Pipe – reinforced concrete, asbestos cement, asphaltic cement	45*
Pipe – HDPE, Liner, PE, PVC, Ultra RIB	50*
Pipe – Black brute, HOBAS, SHE, Polyethylene, UPVC, VC	70*
Pump station structure	70**
Sewer stations – pumps	25**
Sewer treatment plants – structure	50**
Sewer treatment plants – mechanical and electrical	25**

*Based on current data in Councils’ asset register as at January 2017

**Based on NSW Reference Rates of 2014

5.4.2 Renewal and Replacement Strategies

The organisation will plan capital renewal and replacement projects to meet level of service objectives and minimise infrastructure service risks by:

- planning and scheduling renewal projects to deliver the defined level of service in the most efficient manner,
- undertaking project scoping for all capital renewal and replacement projects to identify:
 - the service delivery ‘deficiency’, present risk and optimum time for renewal/replacement;
 - the project objectives to rectify the deficiency;
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency;
 - and evaluate the options against evaluation criteria adopted by the organisation; and
 - select the best option to be included in capital renewal programs,
- using ‘low cost’ renewal methods (cost of renewal is less than replacement) wherever possible,
- seeking out grants and funding partnerships with user groups to help fund renewals,

- maintain a current infrastructure risk register for assets and service risks associated with providing services from infrastructure assets and reporting very high and high risks and residual risks after treatment to management and Council,
- review current and required skills base and implement workforce training and development to meet required construction and renewal needs,
- maintain a current hierarchy of critical assets and capital renewal treatments and timings required, and
- review management of capital renewal and replacement activities to ensure Council is obtaining best value for resources used.

5.4.3 Summary of future renewal and replacement expenditure

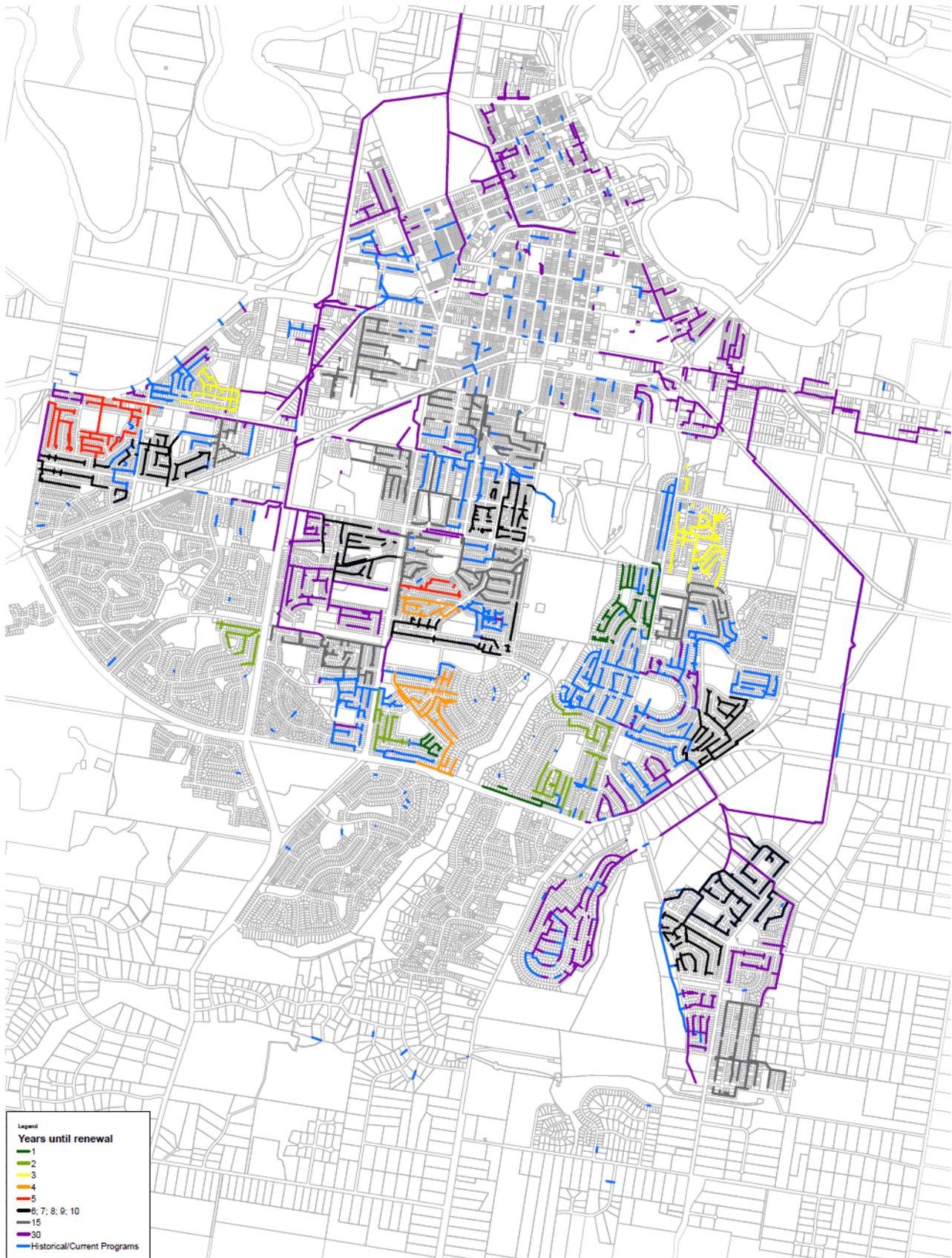
The projected required renewal expenditure for sewer assets is summarised in Table 11 below. Note all amounts are shown in real values (2017 dollars). These figures are developed based on the recommendations of this plan and the current asset data.

**Table 11: Required Renewal Budget compared to Actual Renewal Budget
(as per the Long Term Financial Plan as at June 2017)**

Asset	Required 10 Year Renewal Budget	Budgeted 10 Year Renewal Budget
Sewer pipes	\$13,702,758	\$13,756,555
Pump Stations	\$8,320,419	\$8,320,419
Sewer Treatment Plant – Collingullie	\$40,781	\$40,781
Sewer Treatment Plant – Tarcutta	\$195,000	\$112,947
Sewer Treatment Plant – Uranquinty	\$520,000	\$520,000

Figure 9 below graphically shows the priority for sewer pipe renewal as at June 2017. This priority is based on the type of pipe (replace earthenware and asbestos cement) and the number of chokes reported in an area.

Figure 9: Timeframe for Sewer Pipe Renewal as at January 2017



5.5 Creation/Acquisition/Upgrade Plan

New assets are those assets which create a new asset that did not previously exist, or plants which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the organisation from land development.

5.5.1 Capital Investment Strategies

The organisation will plan capital upgrade and new projects to meet level of service objectives by:

- planning and scheduling capital upgrade and new projects to deliver the defined level of service in the most efficient manner,
- undertake project scoping for all capital upgrade/new projects to identify:
 - the service delivery 'deficiency', present risk and required timeline for delivery of the upgrade/new asset;
 - the project objectives to rectify the deficiency including value management for major projects;
 - the range of options, estimated capital and life cycle costs for each options that could address the service deficiency;
 - management of risks associated with alternative options;
 - and evaluate the options against evaluation criteria adopted by Council; and
 - select the best option to be included in capital upgrade/new programs,
- review current and required skills base and implement training and development to meet required construction and project management needs, and
- review management of capital project management activities to ensure Council is obtaining best value for resources used.

5.5.2 Summary of future upgrade/new assets expenditure

Upgrade/new asset expenditure as identified in the Long Term Financial Plan as at June 2017 is summarised in Table 12 below.

Table 12: New/Upgrade 10 year budget

Asset	10 Year New/Upgrade Estimated Required Budget	10 Year New/Upgrade Budget as per Long Term Financial Plan
Sewer Pump Station – Ashmont	\$3,617,068	\$3,617,068
Sewer Pump Station – Bomen	\$1,816,072	\$1,816,072
Sewer Pump Station – Kingsford Smith	\$1,000,000	\$0
Sewer Pump Station - Glenoak	\$2,887,279	\$2,887,279

5.6 Disposal Plan

As sewer pipes and pump stations are underground assets there is no plan to dispose of any assets in the network. When a new pump station is renewed the existing pump station is left in the network to manage any overflow.

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

5.7 Service Consequences and Risks

This asset management plan includes 2 scenarios. They are explained below.

Scenario 1 - What we would like to do based on asset register data (included in Table 3 as the estimated required budget and the service objective).

Scenario 2 – What we should do with existing budgets and identifying level of service and risk consequences (ie what are the operations and maintenance and capital projects we are unable to do, what is the service and risk consequences associated with this position).

A third scenario will be developed after consideration of the above scenarios across all asset categories included in the asset management framework. Scenario 3 is described below.

Scenario 3 – What we can do and be financially sustainable with Asset management plans matching long-term financial plans.

The development of scenario 1 and scenario 2 Asset management plans provides the tools for discussion with the Council and community on trade-offs between what we would like to do (scenario 1) and what we should be doing with existing budgets (scenario 2) by balancing changes in services and service levels with affordability and acceptance of the service and risk consequences of the trade-off position (scenario 3). Scenario 3 will be included in future revisions of this plan.

5.7.1 What we cannot do

Given the current funding available in the Long Term Financial Plan June 2017, there are some capital projects which are unable to be undertaken within the next 10 years. We cannot:

- build a pump station in the northern growth area, and
- renew the Tarcutta sewage treatment plant to the estimated value of \$195,000 (current budget is \$112,947 as per the Long Term Financial Plan June 2017).

5.7.2 Service consequences

When capital projects cannot be undertaken there will be service consequences for users. These include:

- the sewer services provided to the Tarcutta village may be impacted, and
- if pump stations are not built as required there is an increased load on the existing network.

5.7.3 Risk consequences

The capital projects that cannot be undertaken may create risk consequences for the organisation. These include:

- sewage treatment plant at Tarcutta may not be able to manage the sewage from the village, and
- the sewer network may not have the capacity required in the northern growth area.

6. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

6.1 Financial Statements and Projections

6.1.1 Sustainability of service delivery

Sewer Pipes Asset Renewal Funding Ratio ⁶	100%
Sewer Pump Stations Asset Renewal Funding Ratio ⁷	100%
Sewer Treatment Plants (managed by Council) Asset Renewal Funding Ratio ⁸	58%*
Sewer Treatment Plants (managed by private contractor on behalf of Council) Asset Renewal Funding Ratio ⁹	100%

⁶ AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16

⁷ AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16

⁸ AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16

⁹ AIFMG, 2012, Version 1.3, Financial Sustainability Indicator 4, Sec 2.6, p 2.16

*NB the ratio is 100% for the Collingullie and Uranquinty treatment plants and 58% for Tarcutta which is 58% overall.

The asset renewal funding ratio is the most important indicator and reveals that over the next 10 years, Council is forecasting that it will have :

- 100% of the funds required for the optimal renewal and replacement of sewer pipes,
- 100% of the required renewal budget for sewer treatment plants managed by the provide contractor on behalf of Council and for sewer pump stations, and
- 58% of the renewal budget required for sewer treatment plants managed by Council (it should be noted however, this shortfall relates to the renewal required at the Tarcutta treatment plant, the renewal funding required for the Collingullie treatment plant renewal is 100% funded).

The projected capital renewal expenditure for the Tarcutta treatment plant is estimated to be \$195,000. Currently the Long Term Financial Plan (as at June 2017) includes a budget of \$112,947.

The projected capital renewal expenditure required over the 10 year period for sewer pipes is estimated to be \$13,702,758 (based on the NSW Reference Rates for renewal) to renew identified earthen ware and asbestos cement pipes. The current budget is \$13,765,555 (as per the Long Term Financial Plan as at June 2017) over the 10 year planning period. This indicates Council expects to have 100% of the project funding needed to fund the renewal of sewer pipes recommended in this asset management plan.

Providing services from infrastructure in a sustainable manner requires the matching and managing of service levels, risks, projected expenditures and financing to achieve a financial indicator of approximately 1.0 for the first years of the asset management plan and ideally over the 10 year life of the Long Term Financial Plan.

Table 13 below shows the projected asset renewal and replacement expenditure over the 10 years of the Asset management plan. The projected asset renewal and replacement expenditure is compared to renewal and replacement budget in the Long Term Financial Plan as at June 2017.

Table 13: Renewal Budget Shortfall

Asset	Estimated Required Renewal Budget (10 years)	Renewal Budget as per the Long Term Financial Plan June 2017 (10 years)	Shortfall
Sewer Pipes	\$13,702,758	\$13,756,655	\$0
Sewer Pump Stations	\$2,480,000	\$2,531,984	\$0
Sewer Treatment Works – Uranquinty	\$520,000	\$520,000	\$0
Sewer Treatment Works - Collingullie	\$40,781	\$40,781	\$0
Sewer Treatment Plant – Tarcutta	\$195,000	\$112,947	\$82,053

A gap between projected asset renewal/replacement expenditure and amounts accommodated in the Long Term Financial Plan indicates that further work is required on reviewing service levels in the asset management plan (including possibly revising the Long Term Financial Plan). This will be considered with the development of Scenario 3, what we can do and be financially sustainable with asset management plans matching the Long Term Financial Plan.

In the meantime, we will manage the ‘gap’ by developing this asset management plan to provide guidance on future service levels and resources required to provide these services, and review future services, service levels and costs with the community.

6.2 Forecast Reliability and Confidence

The expenditure and valuations projections in this Asset management plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management.

Over all data sources the data confidence is assessed as medium confidence level for data used in the preparation of this Asset management plan.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

The financial statements are currently developed based on the last revaluation figures. This data is managed by Finance.

Accountabilities for financial systems

The Finance area of Council is responsible for managing the financial data associated with the assets in the sewer network.

Capital/maintenance threshold

The Council's capitalisation threshold is detailed in Note 1 of the Wagga Wagga City Council Financial Statements annually.

Required changes to accounting financial systems arising from this Asset Management Plan

All assets need to be captured in Council's asset register, myData. Work need to occur to decide the appropriate level of componentisation of the data for sewer treatment plants.

7.1.2 Asset management system

Council uses Assetic asset management system as the asset register. All sewer assets should be captured in this system.

Asset registers

Council currently uses Assetic as the asset register for sewer pump stations and pipes. The sewer treatment plants asset register is managed via excel internally for the sewer treatment plants managed by Council. The asset register of the sewer treatment plants managed by a private contract on behalf of Council is managed externally by the contractor.

Linkage from asset management to financial system

There is not an automated link between the asset register (in Assetic) and the finance system.

Accountabilities for asset management system and data maintenance

The Operations area of Council is responsible for managing the asset data associated with the sewer network.

Required changes to asset management system arising from this Asset Management Plan

- All sewer asset data should be captured in Council's asset register, myData.
- All pipe diameter and type information should be collected for sewer pipes.
- Sewer treatment plants asset data needs to be componentised and captured in Council's asset register.
- Data developed for sewer pump stations as a result of this asset management plan needs to be captured in the asset register.

7.2 Improvement Plan

The asset management improvement plan generated from this asset management plan is shown in Table 7.2.

Table 7.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Develop a third funding scenario and identify the projected operations, maintenance, renewal and new budgets (a funding strategy) to inform the Long Term Financial Plan	Manager City Strategy	Sustainable futures group required to develop scenario. Community consultation required to recommend a scenario.	June 2018
2	Identify growth projections and changes in demands on assets	Manager City Strategy	Growth Strategy Residential Strategy	June 2018
3	Develop valuation forecasts for sewer assets	Manager Finance	Data	Dec 2017
4	Capture the data for sewer assets in Council's asset register myData	Manager Project Operations	Staff time	Jun 2017
5	Review resourcing of pump station maintenance currently 2 FTE clean 43 stations almost daily	Manager Operations	Staff time	Jun 2017
6	Review pump station renewal listed in the Long Term Financial Plan.	Manager Project Operations	Staff time	Oct 2017
7	Develop a condition rating regime for pump stations	Manager Project Operations	Staff time	June 2017
8	Capture data on pump station pumps and develop a renewal plan based on the data	Manager Project Operations	Staff time	Dec 2017
9	Link the asset register to the financial system – maintenance funding is currently used to fund pump replacement which should be a capital item	Manager Project Operations and Manager Finance	Staff time	Dec 2017
10	Further risk assessment of critical asset categories (pipes, pump stations and treatment plants) to reflect high, medium and low risk assets	Manager Project Operations and Manager Operations	Staff time	Dec 2017
11	Develop a prioritised renewal list for sewer pipe relining	Manager Operations	Staff time	Dec 2017

7.3 Monitoring and Review Procedures

This Asset Management Plan will be updated annually to ensure it represents the current service level, asset values, projected operations, maintenance, capital renewal and replacement, capital upgrade/new and asset disposal expenditures and projected expenditure values incorporated into the organisation's long term financial plan.

The Plan will be updated in June 2018 to include the third funding scenario, documenting what we can do and be financially sustainable with asset management plans matching the long term financial plan.

The Asset management plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within 9 months of each Council election.

7.4 Performance Measures

The effectiveness of the asset management plan will be measured in the following ways:

1. the gap between actual and targeted levels of service at any point in time,
2. the degree of synchronisation between the asset management plan and the Long Term Financial Plan,
3. the degree of integration between the asset management plan and the Delivery Program/Operational Plan,
4. the level of execution of the identified actions in the plan, and
5. the degree the assessed level of risk to Council in each asset category reduces over time.

8. REFERENCES

IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Plants Engineering Australasia, Sydney, www.ipwea.org/IIMM

IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Plants Engineering Australasia, Sydney, www.ipwea.org/namsplus.

IPWEA, 2009, 'Australian Infrastructure Financial Management Guidelines', Institute of Public Plants Engineering Australasia, Sydney, www.ipwea.org/AIFMG.

IPWEA, 2011, 'International Infrastructure Management Manual', Institute of Public Plants Engineering Australasia, Sydney, www.ipwea.org/IIMM

Wagga Wagga City Council, 2017 Community Strategic Plan

Wagga Wagga City Council, 2017/18 Long Term Financial Plan

Wagga Wagga City Council General Purpose Financial Statements for the year ended 30 June 2016

9. APPENDICES

Appendix A Abbreviations

AAAC	Average annual asset consumption
AM	Asset management
AM Plan	Asset management plan
ARI	Average recurrence interval
ASC	Annual service cost
BOD	Biochemical (biological) oxygen demand
CRC	Current replacement cost
CWMS	Community wastewater management systems
DA	Depreciable amount
DRC	Depreciated replacement cost
EF	Earthplants/formation
IRMP	Infrastructure risk management plan
LCC	Life Cycle cost
LCE	Life cycle expenditure
LTFP	Long term financial plan
MMS	Maintenance management system
PCI	Pavement condition index
RV	Residual value
SoA	State of the Assets
SS	Suspended solids
vph	Vehicles per hour
WDCRC	Written down current replacement cost

questions? comments?
contact us.

Wagga Wagga City Council
PO Box 20
Cnr Baylis & Morrow Sts
Wagga Wagga NSW

Ph: 1300 292 442

Fax: (02) 6926 9199

Email: council@wagga.nsw.gov.au

Follow [@WaggaCouncil](https://twitter.com/WaggaCouncil) on Twitter to get the news, events and emergency information straight from the source.

www.wagga.nsw.gov.au