

GWYDIR SHIRE COUNCIL

**Sewerage
Asset Management
Plan
June 2017**

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Scenario 1 Version 4

June 2017

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1. EXECUTIVE SUMMARY

Context

Gwydir Shire Council is the result of an amalgamation of Bingara Shire Council, Yallaro Shire Council and part of Barraba Shire Council on the 17th of March 2004.

The Gwydir Shire encompasses a diverse landscape that is both picturesque and productive.

It is 9,122 square kilometres in size and is situated north of Tamworth Regional Council and continues almost to the Queensland border.

The southern boundary of the shire is the Nandewar Range where the Gwydir and Namoi Valleys meet. The Horton Valley and Cobbadah District are home to some Australia's most highly regarded beef cattle studs. These enterprising farmers use the latest artificial breeding and agronomic technology to produce beef of the highest quality. Meat Sheep and merinos that grow high quality wool are also grazed in this area.

The Gwydir River enters the Gwydir Shire where it spills from the Copeton Dam and meanders in a westerly direction through the towns of Bingara and Gravesend. The Gwydir Valley is well known for irrigated and dry land cropping as well as livestock production. In addition to the traditional crops of wheat, barley, oats and sorghum, there are olive groves, pecan nut plantations and freshwater fish farms in the Gravesend district.

Heading northwest from the timbered surrounds of the town of Warialda and the close-knit community of Coolatai, the countryside opens into an undulating vista of basalt farmland. This area, including the villages of Crooble, Croppa Creek and North Star, is Australia's 'Golden Triangle'. Farmers using advanced farming techniques, such as minimum tillage and satellite guidance systems, produce a variety of high yielding crops such as wheat, barley sorghum, maize, chick peas, canola and cotton to name just a few.

This area also has several cattle feedlots, which supply grain fed beef to the Australian domestic market and export markets throughout the world. Gwydir Shire residents enjoy excellent medical and health services with medical centres in both Warialda and Bingara. The Shire boasts two new hospitals and aged care facilities have been expanded and are of a very high standard.

Shire residents enjoy a quality and plentiful water supply. In fact the new Bingara Water Treatment

Plant and Reservoir were officially opened on Friday 13th May 2011. As well, residents are provided with open, beautifully maintained streetscapes, parks and sporting facilities.

Our younger citizens enjoy a great range of services and educational opportunities. The Gwydir shire is a strong and socially minded community with many volunteers. Volunteering has taken on a whole new dimension with many manning the newly opened Warialda and Bingara Visitor Information Centres which has allowed the centres to be open over weekends and public holidays.

Living in Gwydir Shire has purpose and direction. What it means to live and work in our Shire is explained in the following five guiding themes. These themes form the basis of our strategic planning and direction for the next ten years.

The Council's guiding Themes:

1. A Healthy and Cohesive Community (Social)

Gwydir Shire has a staggering statistic: for an area of over 9,000 km² there are less than 6,000 residents- or one resident per 1.5 km².

Rather than being fragile as a consequence of this statistic, the Shire has a strong sense of community. Each of the Shire's communities shares a sense of pride in their place and is positive about their future.

This community pride and confidence is based on a commitment, a spirit of co-operative effort, and a belief that their community can achieve harmony, cohesion and positive results.

2. Building the Business Base (Economy)

Business in Gwydir Shire is predominately independently owned, demonstrating a commitment and attachment to the local community. Business owners do have a strong local clientele base and display a gritty determination to succeed. These characteristics show a confidence in their future that is not always reflected in official statistics and reports.

Current analysis of future trends in the Shire is still difficult due to lack of data. Data from the last Census, undertaken in 2011, does not necessarily reflect changes in the regional and local economy since that time. There is also a wealth of evidence that small rural communities and townships have diminished in size, activity and economic importance over the last few decades.

This trend is acutely felt in towns such as Warialda and Bingara. Warialda, for example, was a centre for agricultural services and supplies catering for large agricultural enterprises which employed many staff. The business of agriculture has changed, and this has profoundly influenced Warialda's business landscape.

Gwydir Shire's economy is dependent on agriculture but that 'gritty determination' is bringing other newer businesses and opportunities to the Shire. Recent seasons have brought much needed rain which has led to resurgence in wealth and positivity.

There are also strong signs that tourism is bringing a new dimension to the Shire especially with the construction of the new Warialda Tourist Information Centre, and the refurbishment of the Roxy complex in Bingara.

For tourism to thrive, however, it needs to be based on the development of a strong brand and marketing strategy. The Shire also has an opportunity to capitalise on the 'tree change' movement, or to target communities who are being affected by 'sea change' impacts.

Business 'infrastructure' is a priority for the future economic sustainability of the Shire. The 'infrastructure' priorities vary from facilitating increased participation by women in the workforce, through to leveraging of regional training opportunities and programs such as the Gwydir Learning Region.

In addition, the impending construction of the Hospitality, Primary Industries and Automotive Trade Training Centres will create new industry, employment and opportunities.

Mobile/internet service has been implemented and this has enabled businesses to operate effectively and for Gwydir Shire to project a professional image to the external business community.

The Shire is located at the centre of the North-West/New England Region and this has made Bingara a place to meet and to host conferences. The opportunity to increase the number of meetings and conferences to be held in our Shire will be enhanced when the Roxy complex is fully functional.

3. An Environmentally Responsible Shire (Environment)

Over the history of European settlement in the Gwydir Shire area, some of the past decisions

were made without a complete understanding of their impact upon the landscape and the consequences of upsetting natural ecosystems. When the development of the land occurred at rates faster than the rate at which degradation became apparent, these less than desirable practices were repeated.

Extensive land clearing and extraction of water for agriculture are examples of practices that can over time, detrimentally impact the natural environment of this Shire. Possible consequences are species loss; both terrestrial and riverine flora and fauna, and physical and chemical degradation of soils and river systems.

Today there is a lot of activity, by State agencies, non-government organisations, farmers, the rural community, and the Council to enhance the sustainability of Gwydir's natural resources.

Looking into the future, the emphasis is on achieving both environmental sustainability as well as robust agricultural activity. In Gwydir Shire there are significant environmental assets that require special attention and care.

These features are also key attractions for a healthy tourism industry in the Shire. Gwydir River is one such example.

Council has a key role to play in furthering sustainable behaviour within the Gwydir community.

Education and provision of key information can help residents move towards more sustainable practices, and to help them understand how their actions can ameliorate a variety of environmental impacts.

Council can lead by example through good management and by demonstration. With limited resources, Council will prioritise water and waste as key environmental issues.

It is argued that human activity has interrupted the global carbon cycle and is beginning to have a profound impact on the Earth's climate. The changes that are required to address climate change can offer an opportunity for innovation and economic development.

The agricultural sector is the second biggest contributor to greenhouse gas emissions through the emission of methane and nitrous oxide by livestock. Being a major contributor to emissions, agriculture will be expected to reduce emissions, a challenge for a sector already confronted by other constraints.

However, with its large land base, climate change is a real opportunity for Gwydir Shire.

One such opportunity is in exploring the development of carbon sequestration opportunities, including commercial plantations, and Landcare plantings to offset greenhouse gas emissions.

These plantings would also provide benefits in addressing salinity impacts, and could be planned to complement biodiversity objectives by creating habitat corridors and links across the landscape.

4. A Proactive Consumer–Orientated Organisation

Council can only achieve the outcomes it seeks for the Shire by continuing to operate as a well-managed organisation. The organisation must also have the community's respect and be dedicated to working innovatively and effectively in the Shire's interest.

The organisation will need to continue to adapt to important changes. For example, people affected by Council's decisions are expecting to participate and influence the conduct of those issues. Modern communication technology is facilitating closer involvement with and exposure of Council's processes. These trends will need to be managed with sensitivity and care if that legitimate community request is to be reflected. These processes also need to reflect the requirements of the Department's Integrated Planning and Reporting.

Council's workplace must adapt to these and other changes as they emerge so that it appeals to talented people. Council recognises the quality of the people it can attract and retain in its organisation is vital to its achieving its program. It values its people and appreciates their contribution. It will continue to recognise the obligation for them to be provided with a safe and satisfying workplace; to be treated equitably and with respect; and to be properly rewarded.

The functions and responsibilities of local government continue to increase. That provides Council with the challenges of selecting its activities wisely and of adequately resourcing its programs. Opportunities for new resources and increased effectiveness will be pursued. Council will also place an emphasis on improving alignment between employees and Council's values and goals.

The programs and services the Council selects must be carefully designed and delivered to

equitably and cost effectively advance the wellbeing of the Shire's people.

5. Regional and Local Leadership

Council is committed to leading the Shire in addressing the issues identified in this Strategy and moving towards the Vision it has defined for the Shire. This focus on leadership relates to both leadership within the Shire and that external to it.

The Shire has already demonstrated innovative responses through initiatives such as the Gwydir Learning Region.

This continued 'can do', innovative approach, and the enthusiasm and energy sets Gwydir Shire apart and allows the Shire to 'punch above its weight' in the region.

As an entity operating in the twenty first century, it is imperative that the Council demonstrate best practice corporate governance behaviour. In time, sustainability and governance will be managed as a single holistic approach to the management of an organisation. Gwydir Shire recognises this trend and is striving to give the most accurate reporting possible within its Integrated Planning and Reporting requirements.

The Sewerage Service

The Bingara and Warialda Sewerage network comprises:

- 42km sewerage mains
- 9 sewerage pump stations
- 2 sewerage treatment plants

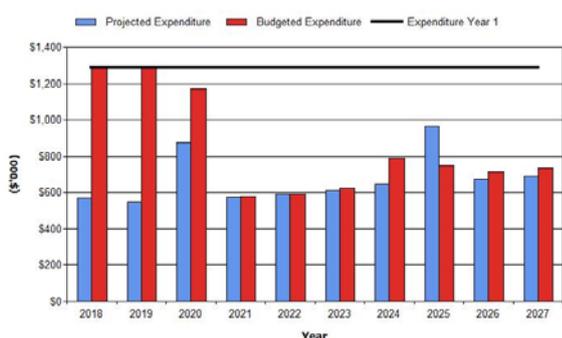
These infrastructure assets have a depreciated replacement value of \$10,133,000 and a replacement cost of \$13,888,000.

What does it Cost?

The projected outlays necessary to provide the services covered by this Asset Management Plan (AM Plan) includes operations, maintenance, renewal and upgrade of existing assets over the 10 year planning period is \$689,000 on average per year.

Estimated available funding for this period is \$868,000 on average per year which is 126% of the cost to provide the service. This is an average funding surplus of \$179,000 per year. Projected expenditure required to provide services in the AM Plan compared with planned expenditure currently included in the Long Term Financial Plan are shown in the graph below.

Projected Budget and Expenditure for Sewerage



Why is there a surplus?

Figures included in this asset management plan include a \$2,000,000 expansion of sewer services. This expansion, staged over the first three years of the planning period is intended to deliver sewer services to areas of Bingara currently not serviced.

What we will do

We plan to provide Sewerage services for the following:

- Operation, maintenance, renewal and upgrade of sewerage mains, pump station and treatment plants to meet service levels set in annual budgets.
- Sewer main relining, pump replacement and STP upgrades will be ongoing within the 10 year planning period.

Managing the Risks

There are risks associated with providing the service and not being able to complete all identified activities and projects. We have identified major risks as:

- Sewerage main failures.
- Pump station overload.
- Pump station failure.
- STP failure.

We will endeavour to manage these risks within available funding by:

- Replacement or upgrade of equipment.
- Prevention of stormwater infiltration.
- Installing standby power supplies.

Confidence Levels

The Office of Local Government mandates asset that assets a revalued on a 5 year rolling cycle. In the 2017-2018 financial year, all assets within the sewer classification will be subject to this revaluation. This process will involve a thorough evaluation of the replacement costs, condition

assessments, useful lives and depreciation. It is expected that material changes will be made to forecasted figures as a consequence of this revaluation. As the data contained within this plan is in its final year of its five year life between revaluations, this AM Plan is based on medium level of confidence information.

The Next Steps

The actions resulting from this asset management plan are:

- Improve integration between AM Plan and LTFP.
- Fair value revaluation of assets.
- Engage community on desired service levels.
- Investigate new technology to minimise cost and improve service.

Questions you may have

What is this plan about?

This asset management plan covers the infrastructure assets that serve the Gwydir Shire Council community's sewerage needs. These assets include pipes, manholes, pump stations sewerage treatment plants throughout the Bingara and Warialda townships that enable people to have a sewerage collection and treatment service..

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 infrastructure 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 happens if we don't manage our Assets Properly?

It is likely that we would have to reduce service levels in some areas, unless new sources of revenue are found. For sewerage, the service level reduction may include a reduction in the capacity of the network to provide continuous service.



What can we do?

We can develop options, costs and priorities for future sewerage services, consult with the community to plan future services to match the community service needs with ability to pay for services and maximise community benefits against costs.

What can you do?

We will be pleased to consider your thoughts on the issues raised in this asset management plan and suggestions on how we may change or reduce the sewerage mix of services to ensure that the appropriate level of service can be provided to the community within available funding.

2. INTRODUCTION

2.1 Background

This asset management plan is to demonstrate responsive management of assets (and services provided from assets), compliance with regulatory requirements, and to communicate funding needed to provide the required levels of service over a 20 year planning period.

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

The asset management plan is to be read with the organisation's Asset Management Policy, Asset Management Strategy and the following associated planning documents:

- Gwydir Shire Council Long Term Financial Plan
- Gwydir Shire Council Management Plan
- Gwydir Shire Council Delivery and Operational Plan
- Gwydir Shire Council Community Strategic Plan

The infrastructure assets covered by this asset management plan are shown in Table 2.1. These assets are used to provide sewerage services to its community.

Table 2.1: Assets covered by this Plan

- Sewerage Pipes
- Sewerage Treatment Plants
- Sewerage Pump Stations
- Other Sewer Infrastructure

Key stakeholders in the preparation and implementation of this asset management plan are: Shown in Table 2.1.1.

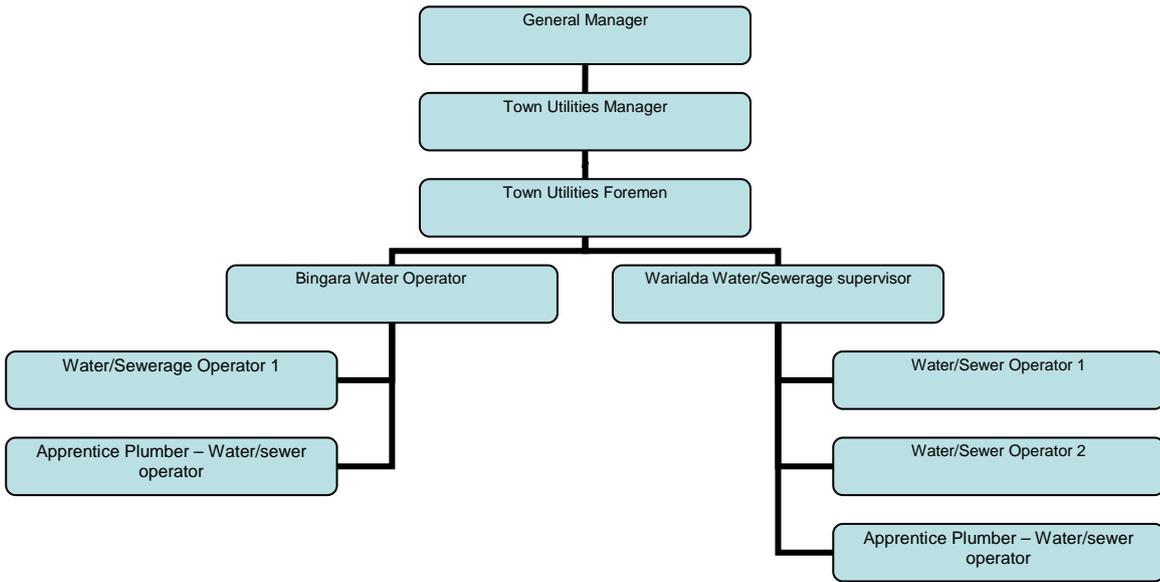
Table 2.1.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	<ul style="list-style-type: none">• Represent needs of community/shareholders,• Allocate resources to meet the organisation's objectives in providing services while managing risks,• Ensure organisation is financial sustainable.
General Manager	Overall responsibility for the management of assets
Town Services Engineer	Planning, Operational and budgetary management of water assets
Design & Assets Manager	Strategic management of water assets

Our organisation's organisational structure for service delivery from infrastructure assets is detailed below:

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

Gwydir Shire Council Sewerage Organisational Structure



2.2 Goals and Objectives of Asset Management

The organisation exists to provide services to its 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 donation 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 we will manage our 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 the organisation's objectives,
- Asset management improvement plan.

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

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

2.4 Core and Advanced Asset Management

This asset management plan is prepared as a 'core' asset management plan over a 20 year planning period in accordance with the International Infrastructure Management Manual³. It is prepared to meet minimum legislative and organisational requirements for sustainable service delivery and long term financial planning and reporting. Core asset management is a 'top down' approach where analysis is applied at the 'system' or 'network' level.

Future revisions of this asset management plan will move towards 'advanced' asset management using a 'bottom up' approach for gathering asset information for individual assets to support the optimisation of activities and programs to meet agreed service levels.

2.5 Community Consultation

This 'core' asset management plan is prepared to facilitate community consultation initially through feedback on public display of draft asset management plans prior to adoption by the Council/Board. Future revisions of the asset management plan will incorporate community consultation on service levels and costs of providing the service. This will assist the Council/Board and the community in matching the level of service needed by the community, service risks and consequences with the community's ability and willingness to pay for the service.

3. LEVELS OF SERVICE

3.1 Customer Research and Expectations

Council has carried research into community satisfaction by way of community meetings, mail survey, customer request management system and also direct access to Council staff. The overall consensus in the community is that the community is fairly satisfied with the sewerage network.

The organisation uses this information in developing its Strategic Plan and in allocation of resources in the budget.

3.2 Strategic and Corporate Goals

This asset management plan is prepared under the direction of the organisation's vision, mission, goals and objectives.

Our vision is:

"To be a recognised leader in Local Government through continuous learning and sustainability"

Our mission is:

"To ensure that the Council's long term role is viable and sustainable by meeting the needs of our residents in a responsible caring way, attract sustainable development while maintaining the traditional rural values, character and culture of our people"

³ IPWEA, 2011, IIMM.

Relevant organisation goals and objectives and how these are addressed in this asset management plan are:

Community Strategic Plan Objectives Addressed in this Plan

Outcome 2.1 Our economy is growing and supported

Our business community is prepared for future growth and challenges. We welcome new business development opportunities and work with private enterprise to establish strategic partnerships aligned to the creation of employment and industry in our community.

Tourism is embraced by all facets of our community and Gwydir Shire Council is seen as a destination of choice for travellers.

Strategies to get there

2.1.1 Plan for and develop the right assets and infrastructure

2.1.2 Support the growth of our business community.

2.1.3 Promote our community as the place to visit, live, work and invest

Council Role

- Promote and support business investment and employment growth
- Provide visitor information services
- Advocate for better internet access
- Partner with business and industry to attract funding and investment
- Develop and promote tourism
- Provide and maintain our road network
- Advocate for funding for major projects
- ***Provide and maintain public infrastructure***

Outcome 3.2 We use and manage our natural resources wisely

We take responsibility for the management and consumption of our valuable resources and recognise the impact that our actions have both today and on future generations.

Strategies to get there

3.2.1 Develop a clean energy future

3.2.2 *Use our water wisely*

3.2.3 *Reduce, reuse and recover waste*

3.2.4 Identify and make best use of our land resource

Council Role

- ***Provide water and sewer services***
- Undertake waste minimisation and education programs
- Provide and promote initiatives to reduce water, energy and waste
- Provide waste and recycling services
- Support the protection of our land through long term planning
- Plan community spaces wisely

The Council will exercise its duty of care to ensure public safety in accordance with the infrastructure risk management plan prepared in conjunction with this AM Plan. Management of infrastructure risks is covered in Section 5.2

3.3 Legislative Requirements

We have to meet many legislative requirements including Australian and State legislation and State regulations. These include:

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
The Australian Accounting Standards	The Australian Accounting Standards Board Standard, AASB 116 Property Plant & Equipment requires that assets be valued, and reported in the annual accounts, which also includes depreciation value (i.e. how fast are these assets wearing out).
Environmental Planning and Assessment Act 1979	Sets out guidelines for land use planning and promotes sharing of responsibilities between various levels of government in the state.
Environmental Planning and Assessment Amendment Act 2008	Sets out guidelines for land use planning and promotes sharing of responsibilities between various levels of government in the state.
Protection of the Environment Operations Act 1997	Sets out Council responsibility and powers of local area environment and its planning functions.
Water Management Act 2000	Determining developer charges. Water rights, licences, allocations.
Local Government Regulation 1993 (Savings and Transitional)	Determining developer charges.
Independent Pricing and Regulatory Tribunal Act 1992	Gives powers to the Independent Pricing and Regulatory Tribunal to inquire into and regulate prices. IPART has developed a set of consistent pricing principles to be adopted by local government authorities. Charging guidelines. Trend towards a user pay system in the industry.
Soil Conservation Act 1938	Conserves soil resources and farm water resources and the mitigation of erosion and land degradation. Preservation of watercourse environments.
Catchment Management Act 1989	Promotes the coordination of activities within catchment areas. Council believes this Act has implications for the management of river quality and quantity. Requirement for ongoing management plan.
Water Management Act 2000	The act provides for sustainable and integrated management of NSW's water sources. Water rights, licences, allocations.
Public Health Act 1991	Prevention of the spread of disease. Effluent disposal methods. Delivery of quality water.
Work Health and Safety Act 2011 (and Regulations)	Council's responsibility to ensure health, safety and welfare of employees and others at places of work. Likely to be cost implications. Impacts all operations. Note public safety – insurance.

Waste Avoidance and Resource Recovery Act 2001	The objects of this Act are to encourage the most efficient use of resources, to provide for the continual reduction in waste generation, to minimise the consumption of natural resources, to ensure efficient funding of waste and resource management planning and to assist with the achievement of the objectives of the Protection of Environment Operations Act.
Workers Compensation Act 1987	Sets out to provide for the compensation and rehabilitation of workers in respect of work related injuries.

3.4 Current Levels of Service

We have defined service levels in two terms:

Community Levels of Service measure how the community receives the service and whether the organisation is providing community value.

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

Quality	How good is the service?
Function	Does it meet users' needs?
Capacity/Utilisation	Is the service over or under used?

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:

- Operations – the regular activities to provide services such as opening hours, cleansing frequency, mowing frequency, etc.
- Maintenance – the activities necessary to retain an asset as near as practicable to an appropriate service condition (e.g. clearing blockages, building and structure repairs),
- Renewal – the activities that return the service capability of an asset up to that which it had originally (e.g. pipeline replacement, frequency and cost of road resurfacing and pavement reconstruction, and building component replacement),
- Upgrade – the activities to provide a higher level of service (e.g. replacing a pipeline with a larger size, widening a road, sealing an unsealed road) or a new service that did not exist previously (e.g. new treatment plant to meet higher demand).

Asset managers plan, implement and control technical service levels to influence the customer service levels.⁴

Our current service levels are detailed in Table 3.4.

Table 3.4: Current and Desired Service Levels

Key Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service	Optimal Level of Service
COMMUNITY LEVELS OF SERVICE				
Quality	Provide a safe and efficient collection and disposal service	No of odour complaints. Compliance with EPA license requirements	Satisfactory	95% reporting satisfied or higher satisfaction levels for sewerage service
Function	Ensure the sewerage service meets Department of health/EPA approval conditions	Approval conditions compliance	Satisfactory	Nil, non-compliance event per year system
Safety	Provide safe suitable drainage systems	Compliance with the EPA license conditions. No of environmental incidents	Satisfactory	Less than 3 per annum

⁴ IPWEA, 2011, IIMM, p 2.22

TECHNICAL LEVELS OF SERVICE				
Operations	Provide appropriate sewerage services to meet user requirements	Service maintenance request response	90% of planned and reactive service requests are completed within agreed performance limits	Satisfactory
Function/Accessibility	Ensure sewerage services are available to all occupied properties	Number of properties able to connect to sewerage services	Sewerage services are available to 97% of residential and commercial properties	Satisfactory
Renewal	The system is maintained to a high standard to ensure future services is available a minimal cost.	Complete annual works program	100% of Works program complete	Satisfactory
Safety	Effectiveness of WH & S programs and work method Statements/Standard Operating Procedures	Time lost resulting from injuries	Nil lost time injuries per year	Satisfactory/ Ongoing

3.5 Desired Levels of Service

Results from 2015 Council’s community survey show 91.01% of respondents rate the performance Council’s sewer service as adequate or have no opinion of service. This indicates that the current level of service is concurrent with the expectations of the majority of the community.

4. FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecast

The present position and projections for demand drivers that may impact future service delivery and utilisation of assets were identified and are documented in Table 4.3.

4.3 Demand Impact on Assets

The impact of demand drivers that may affect future service delivery and utilisation of assets are shown in Table 4.3.

Table 4.3: Demand Drivers, Projections and Impact on Services

Demand drivers	Present position	Projection	Impact on services
Population	5000	5000	Nil
Demographics	Dwelling occupancy rate may increase	0.0-0.5% p.a	Slight increase in service demand
Management	More condition based than intervention point planning	Better understanding of useful lives and projected costs	Sewerage service knowledge continually improved.

4.4 Demand Management Plan

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

Non-asset solutions focus on providing the required service without the need for the organisation to own the assets and management actions including reducing demand for the service, reducing the level of service

(allowing some assets to deteriorate beyond current service levels) or educating customers to accept appropriate asset failures. Examples of non-asset solutions include providing services from existing infrastructure such as aquatic centres and libraries that may be in another community area or public toilets provided in commercial premises.

4.5 Asset Programs to meet Demand

The new assets required to meet growth will be acquired free of cost from land developments and constructed/acquired by the organisation. New assets constructed/acquired by the organisation are discussed in Section 5.5. Acquiring these new assets will commit the organisation to fund ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required.

Council is planning to extend the sewerage system to service North and East Bingara (Old Keera Road); respectively there are 55 and 20 existing dwellings in these areas without reticulated sewerage services. There are 45 large vacant lots in these areas that may require sewer connection in the future; potentially each lot could be subdivided into 2-3 smaller lots to meet demand for land. The project is programmed over two years starting 1st July 2018.

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

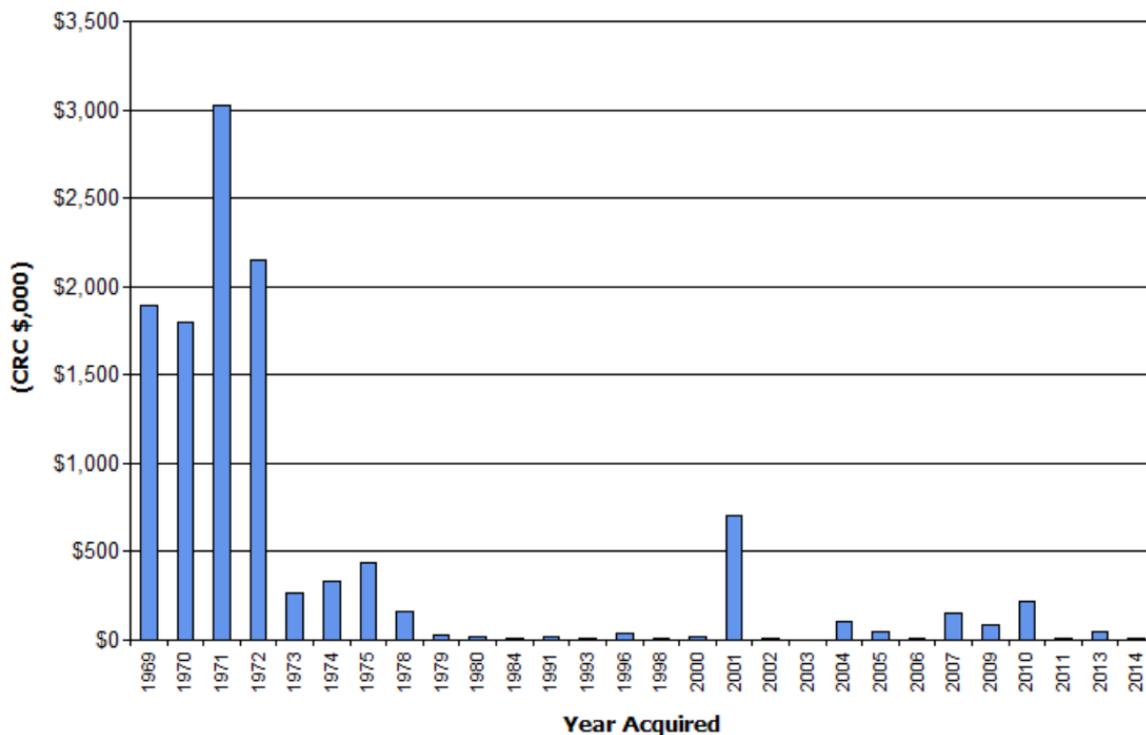
5.1.1 Physical parameters

The assets covered by this asset management plan are shown in Table 2.1.

These assets are a mix of pipework, pump stations and sewerage treatment plants which are located in the townships of Bingara and Warialda.

The age profile of the assets included in this AM Plan is shown in Figure 2.

Figure 2: Asset Age Profile



Plans showing the Sewerage assets are:

- Bingara sewerage scheme master plan
- Warialda sewerage scheme master plan

5.1.2 Asset capacity and performance

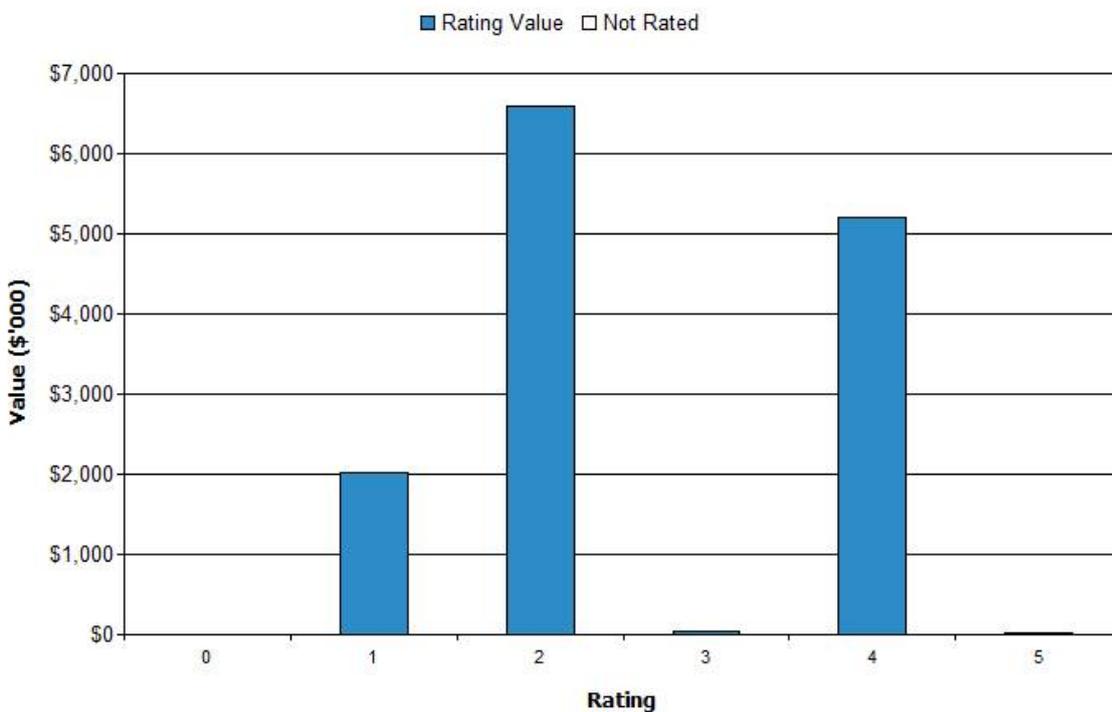
The organisation’s services are generally provided to meet design standards where available, and there are no known deficiencies within Council’s sewer network. In the period from 2002-2017 Council had 885 sewerage blockages equating to 1.13 sewerage blockages per week. The majority of the blockages were due to foreign objects rather than asset failure.

5.1.3 Asset condition

Condition is monitored by investigative camera work, visual inspection and asset failure.

The condition profile of our assets is shown in Figure 3.

Fig 3: Asset Condition Profile



Condition is measured using the Office of Local Government’s IP&R 1 – 5 grading system⁵ as detailed in Table 5.1.3.

Table 5.1.3: Integrated Planning and Reporting Grading Model

Condition Grading	Description of Condition
1	Excellent: No work required (normal maintenance)
2	Good: Only minor maintenance work required
3	Average: Maintenance work required
4	Poor: Renewal required
5	Very Poor: Urgent renewal/upgrading required

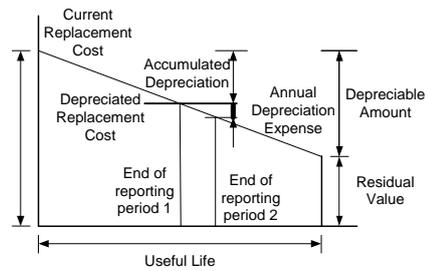
⁵ IPWEA, 2011, IIMM, Sec 2.5.4, p 2 | 79.

Revaluation of the sewer assets is due 2017/18; currently pump stations are rated at Condition 4 (renewal required). The pump station assets are performing satisfactory, structures are sound so it is expected that this rating will be changed to average when the revaluation takes place.

5.1.4 Asset valuations

The value of assets recorded in the asset register as at 22nd January 2014 covered by this asset management plan is shown below. Assets were last revalued at 30th June 2013. Assets are valued based on depreciated replacement cost approach. At the end of the assets useful life a residual value may be present.

Current Replacement Cost	\$13,888,000
Depreciable Amount	\$13,741,000
Depreciated Replacement Cost ⁶	\$10,133,000
Annual Depreciation Expense	\$ 1161,000



Useful lives were reviewed in 30th June 2013 by using industry st: department knowledge and past experience.

Key assumptions made in preparing the valuations were:

- Modern equivalent replacement methodology.
- Useful Life (see table below):

Water Treatment Plant structure	Civil/structure assets contain pathways, driveways, parking bays, concrete slabs, walls, windows, fit out and roof. Major cause of a problem with the structure would most likely be subsidence with the appropriate treatment being under-pinning. The problems would be fixed by under-pinning and re-sealing the cracks which is worst case scenario is likely to be less than 50% of the total cost of construction. Their full life cycle is considered to be 60 years and only become useless when the infrastructure they are associated with becomes obsolete and of no further use. Their residual value remains at 50% as the asset itself still has a useful life, albeit even if in another capacity than what it was originally used as.
Water Reservoirs – Concrete and Steel	Reservoirs generally have a total life span of 80 years and carry a residual value of 70% as any issues will be repaired well before the asset deteriorates to a condition where it requires major work. Even in this situation the cost to renew is considered to be less than 30% of the cost of construction as new.
Bores	The drilling and casing is already performed, and an upgrade to the mech/elec. (pump) is the only item usually done. Therefore a residual value of 50% is carried.
Water Pump stations Civil/Structure	Civil/structure assets contain pathways, driveways, parking bays, concrete slabs, walls, windows, fit out and roof. Major cause of a problem with the structure would most likely be subsidence with the appropriate treatment being under-pinning. The problems would be fixed by under-pinning and re-sealing the cracks which is worst case scenario is likely to be less than 50% of the total cost of construction. Their full life cycle is considered to be 60 years and only become useless when the infrastructure they are associated with becomes obsolete and of no further use. Their residual

⁶ Also reported as Written Down Current Replacement Cost (WDCRC).

	value remains at 50% as the asset itself still has a useful life, albeit even if in another capacity than what it was originally used as.
Water Pipes	Water pipes hold a residual value of 10% due to the ease of excavation and the accessibility of the pipe. The ease of excavation and accessibility to the pipe is caused by the backfill (usually sand or aggregate) being removed more efficiently than initial excavation of virgin ground.
Sewer Pipes	Sewer pipes hold a residual value of 40%; this is due to the fact that sewer pipes can be relined, therefore negating the need for excavation and pipe replacement.
Sewerage Pump station Civil/Structural	Civil/structure assets contain pathways, driveways, parking bays, concrete slabs, walls, windows, fit out and roof. Major cause of a problem with the structure would most likely be subsidence with the appropriate treatment being under-pinning. The problems would be fixed by under-pinning and re-sealing the cracks which is worst case scenario is likely to be less than 50% of the total cost of construction. Their full life cycle is considered to be 60 years and only become useless when the infrastructure they are associated with becomes obsolete and of no further use. Their residual value remains at 50% as the asset itself still has a useful life, albeit even if in another capacity than what it was originally used as.
Sewerage Treatment Plant Effluent ponds, Sludge Lagoons and Site works	Effluent Ponds and Sludge Lagoons These carry 80% residual as they will only be cleaned out under general maintenance. And will be repaired well before the asset deteriorates to a point where major work is required. Even in this situation the cost to renew would be less than 20% of the new construction cost. Their full life cycle is considered to be 100 years and only become useless when the infrastructure they are associated with becomes obsolete and of no further use. Their residual value remains at 60% as the asset itself still has a useful life, albeit in another capacity than what it was originally used as.

Major changes from previous valuations are due to improved asset data, condition rating and useful life determination, in conjunction with changed depreciation methodology.

Various ratios of asset consumption and expenditure have been prepared to help guide and gauge asset management performance and trends over time.

Rate of Annual Asset Consumption (Depreciation/Depreciable Amount)	0.8% ¹
Rate of Annual Asset Renewal (Capital renewal exp/Depreciable amount)	0.35% ²
Rate of Annual Asset Upgrade/New (Capital upgrade exp/Depreciable amount)	1.45%

1. Calculated using depreciation of all assets each year
2. Calculated using the average yearly renewal budget over 10 years and does not include budgeted replacement for high value items such as sewer treatment plant infrastructure beyond the 10 year planning period. These high value items will be funded using Sewerage fund reserves. Excluding these items from calculations results in a rate of renewal equalling or exceeding rate of consumption.

5.1.5 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.

5.2 Infrastructure Risk Management Plan

An assessment of risks⁷ associated with service delivery from infrastructure assets has identified critical risks that will result in loss or reduction in service from infrastructure assets or a 'financial shock' to the organisation. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' - requiring immediate corrective action and 'High' – requiring prioritised corrective action identified in the Infrastructure Risk Management Plan, together with the estimated residual risk after the selected treatment plan is operational are summarised in Table 5.2. These risks are reported to management and Council/Board.

Table 5.2: Critical Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Associated Costs
Pump Station	Hydraulic overflow	VH	Reduce stormwater infiltration	TBA
Pump station	Power failure resulting in sewerage overflow	H	Detention time Backup generator Telemetry alarms	TBA
WSTP	Overflow	H	Secondary storage Backup pumps Backup power	TBA
Mains	Tree root penetration, pipe dislocations - causing sewerage overflows	H	Sewer main relining	TBA

5.3 Routine Operations and Maintenance Plan

Operations include regular activities to provide services such as public health, safety and amenity, e.g. street sweeping, grass mowing and street lighting.

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

5.3.1 Operations and Maintenance Plan

Operations activities affect service levels including quality and function through street sweeping and grass mowing frequency, intensity and spacing of street lights and cleaning frequency and opening hours of building and other facilities.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating, e.g. road patching but excluding rehabilitation or renewal. Maintenance may be classified into reactive, planned and specific maintenance work activities.

Reactive maintenance is unplanned repair work carried out in response to service requests and management/supervisory directions.

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS 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.

Specific maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, replacing air conditioning units, etc. This work falls below the capital/maintenance threshold but may require a specific budget allocation.

Actual past maintenance expenditure is shown in Table 5.3.1.

Table 5.3.1: Maintenance Expenditure Trends

Year	Maintenance Expenditure
2011	\$88,000
2012	\$120,000
2013	\$120,000
2014	\$126,360
2015	\$137,785

Maintenance expenditure levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance expenditure levels are such that will result in a lesser level of service, the service consequences and service risks have been identified and service consequences highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

Assessment and prioritisation of reactive maintenance is undertaken by the organisation's staff using experience and judgement.

5.3.2 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 Very High and High risks and residual risks after treatment to management and Council/Board,
- 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,
- Review management of operations and maintenance activities to ensure the organisation 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 organisation's service hierarchy is shown in Table 5.3.2.

Table 5.3.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Location – Bingara / Warialda	Identifies sewerage system
Location – street name	Identifies location of asset
Sewerage reticulation main	Transport sewer in all-weather flow/demand
Sewerage rising main (pressure main)	Transport sewer without any loss
Manholes	Provide access to sewer main for maintenance
Pump stations	Function efficiently and effectively
Sewerage treatment works	Achieve the required level of treatment

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.

Operations and maintenance activities may be targeted to mitigate critical assets failure and maintain service levels. These activities may include increased inspection frequency, higher maintenance intervention levels, etc. Critical assets failure modes and required operations and maintenance activities are detailed in Table 5.3.2.1.

Table 5.3.2.1: Critical Assets and Service Level Objectives

Critical Assets	Operations & Maintenance Activities
Pump stations	High intervention level, and higher inspection rates
Sewerage Treatment Plants	Daily observation and inspections.

Standards and specifications

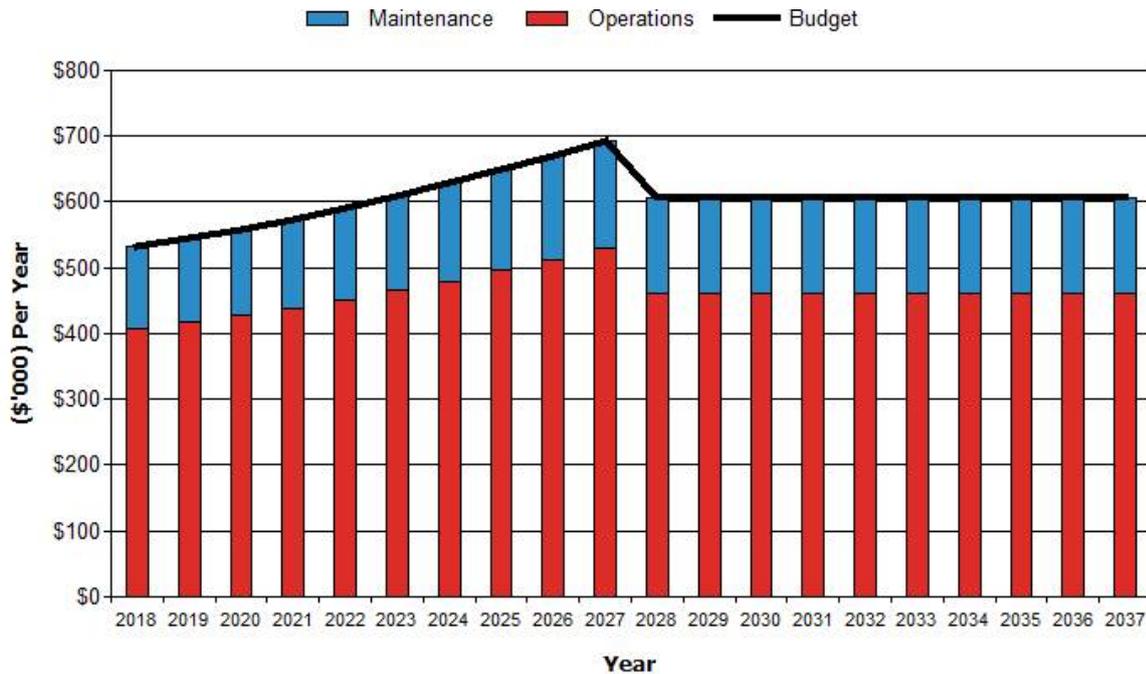
Maintenance work is carried out in accordance with the following Standards and Specifications.

- Relevant Australian Standards
- Relevant Industry Specifications and Codes of Practice
- Relevant Manuals provided with specialised equipment.

5.3.3 Summary of future operations and maintenance expenditures

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Figure 4. Note that all costs are shown in current 2014 dollar values (i.e. real values).

Figure 4: Projected Operations and Maintenance Expenditure



Deferred maintenance, i.e. works that are identified for maintenance and unable to be funded are to be included in the risk assessment and analysis in the infrastructure risk management plan.

Maintenance is funded from the operating budget where available. This is further discussed in Section 6.2.

5.4 Renewal/Replacement Plan

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 works expenditure.

5.4.1 Renewal plan

Assets requiring renewal/replacement are identified from one of three methods provided in the ‘Expenditure Template’.

- Method 1 uses Asset Register data to project the renewal costs using acquisition year and useful life to determine the renewal year, or
- Method 2 uses capital renewal expenditure projections from external condition modelling systems (such as Pavement Management Systems), or
- Method 3 uses a combination of average *network renewals* plus *defect repairs* in the *Renewal Plan* and *Defect Repair Plan* worksheets on the ‘Expenditure template’.

Method 1 was used for this asset management plan.

The useful lives of assets used to develop projected asset renewal expenditures are shown in Table 5.4.1. Asset useful lives were last reviewed on 30th June 2013.⁸

⁸ 2013 Water and Sewerage Revaluation Commentary
2013 Sewerage Revaluation spreadsheets

Table 5.4.1: Useful Lives of Assets

Asset (Sub)Category	Useful life
Sewerage Pipe	100 years
Sewerage Treatment Plant – disinfection	50 Years
Effluent ponds	100 years
Non mechanised treatment	50 years
Site works	100 years
Sludge lagoon - no mechanical dewatering	100 years
Sewerage Pump stations	60 years

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,
- 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 the Council/Board,
- 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 ,
- Review management of capital renewal and replacement activities to ensure the organisation is obtaining best value for resources used.

Renewal ranking criteria

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 (e.g. relining a pipe that has failed or where failure is imminent), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (replacing a rising main with a larger size to accommodate increased demand).⁹

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

⁹ IPWEA, 2011, IIMM, Sec 3.4.4, p 3|60.

- 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 AM Plan as key cost factors
- Have high operational or maintenance costs and
- Where replacement with modern equivalent assets would yield material savings.¹⁰

The ranking criteria used to determine priority of identified renewal and replacement proposals is detailed in Table 5.4.2.

Table 5.4.2: Renewal and Replacement Priority Ranking Criteria

Criteria	Weighting
Age	20
Material	20
Failure frequency/consequence	60
Total	100%

Renewal and replacement standards

Renewal work is carried out in accordance with the following Standards and Specifications.

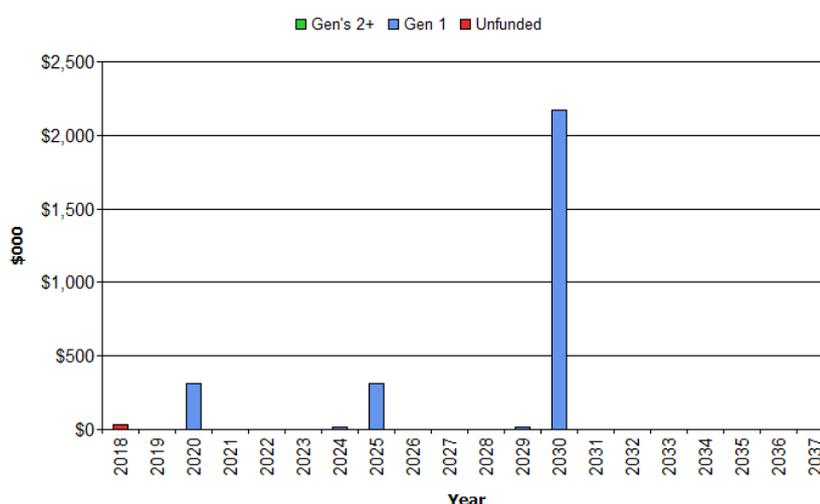
- NSW Code of Practice for Plumbing and Drainage
- Relevant WSSA Codes
- Relevant Australian standards
- Relevant Industry Specifications and codes of Practice
- Relevant 'manuals' provided with specialised equipment

5.4.3 Summary of future renewal and replacement expenditure

Projected future renewal and replacement expenditures are forecast to increase over time as the asset stock increases from growth. The expenditure is summarised in Fig 5. Note that all amounts are shown in real values.

The projected capital renewal and replacement program is shown in Appendix B.

Fig 5: Projected Capital Renewal and Replacement Expenditure



Renewals and replacement expenditure in the organisation's capital works program will be accommodated in the long term financial plan. This is further discussed in Section 6.2.

¹⁰ Based on IPWEA, 2011, IIMM, Sec 3.4.5, p 3 | 66.

5.5 Creation/Acquisition/Upgrade Plan

New works are those works that create a new asset that did not previously exist, or works 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. These assets from growth are considered in Section 4.4.

5.5.1 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. The priority ranking criteria is detailed below.

Table 5.5.1: New Assets Priority Ranking Criteria

Criteria	Weighting
Noncompliance with existing infrastructure	50
Development areas	25
Inadequate sewerage infrastructure in an existing area	25
Total	100%

5.5.2 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/Board 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
- Review management of capital project management activities to ensure the organisation is obtaining best value for resources used.

Standards and specifications for new assets and for upgrade/expansion of existing assets are the same as those for renewal shown in Section 5.4.2.

5.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Gwydir Shire currently has no sewerage assets identified for disposal in the planning period.

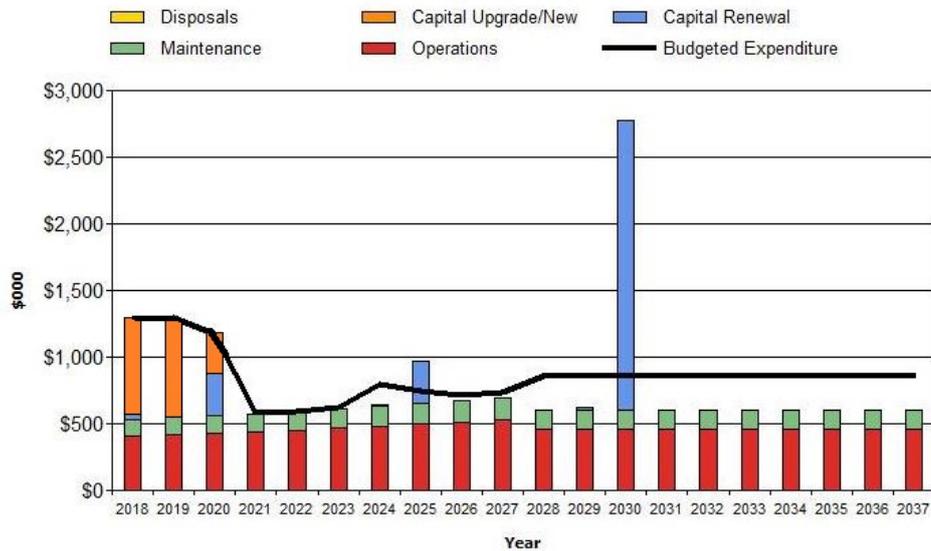
6. FINANCIAL SUMMARY

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

The financial projections are shown in Fig 7 for projected operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets). Note that all costs are shown in real values.

Fig 7: Projected Operating and Capital Expenditure



6.1.1 Sustainability of service delivery

There are three key indicators for service delivery sustainability that have been considered in the analysis of the services provided by this asset category, long term life cycle costs/expenditures and medium term projected/budgeted expenditures over 5 and 10 years of the planning period.

Long term – 20 Year Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life cycle. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). The life cycle cost for the services covered in this asset management plan is \$721,000 per year (average operations and maintenance expenditure plus depreciation expense projected over 10 years).

Life cycle costs can be compared to life cycle expenditure to give an initial indicator of affordability of projected service levels when considered with age profiles. Life cycle expenditure includes operations, maintenance and capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure over the 10 year planning period is \$668,000 per year (average operations and maintenance plus capital renewal budgeted expenditure in LTFP over 10 years).

A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. The life cycle gap for services covered by this asset management plan is -\$54,000 per year.

Life cycle expenditure is 93% of life cycle costs. This 7% deficit is a consequence of renewal of 6 sewerage pump stations falling outside the 10 year span of LTP capital renewal planning/budgeting. Budgets shown in this plan beyond the immediate 10 year planning period are averages of the 10 year LTP budget and as such do not consider these pump station renewals. These renewals, falling in 2030 will be addressed in future long term financial plans. The sewerage fund has adequate reserves to fund these renewals when required.

Medium term – 10 year financial planning period

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year period. This

provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

These projected expenditures may be compared to budgeted expenditures in the 10 year period to identify any funding shortfall. In a core asset management plan, a gap is generally due to increasing asset renewals for ageing assets.

The projected operations, maintenance and capital renewal expenditure required over the 10 year planning period is \$689,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is \$668,000 on average per year giving a 10 year funding shortfall of \$21,000 per year. This indicates that the organisation expects to have 97% of the projected expenditures needed to provide the services documented in the asset management plan.

Medium Term – 5 year financial planning period

The projected operations, maintenance and capital renewal expenditure required over the first 5 years of the planning period is \$662,000 on average per year.

Estimated (budget) operations, maintenance and capital renewal funding is \$597,000 on average per year giving a 5 year funding shortfall of \$65,000. This indicates that the organisation expects to have 90% of projected expenditures required to provide the services shown in this asset management plan.

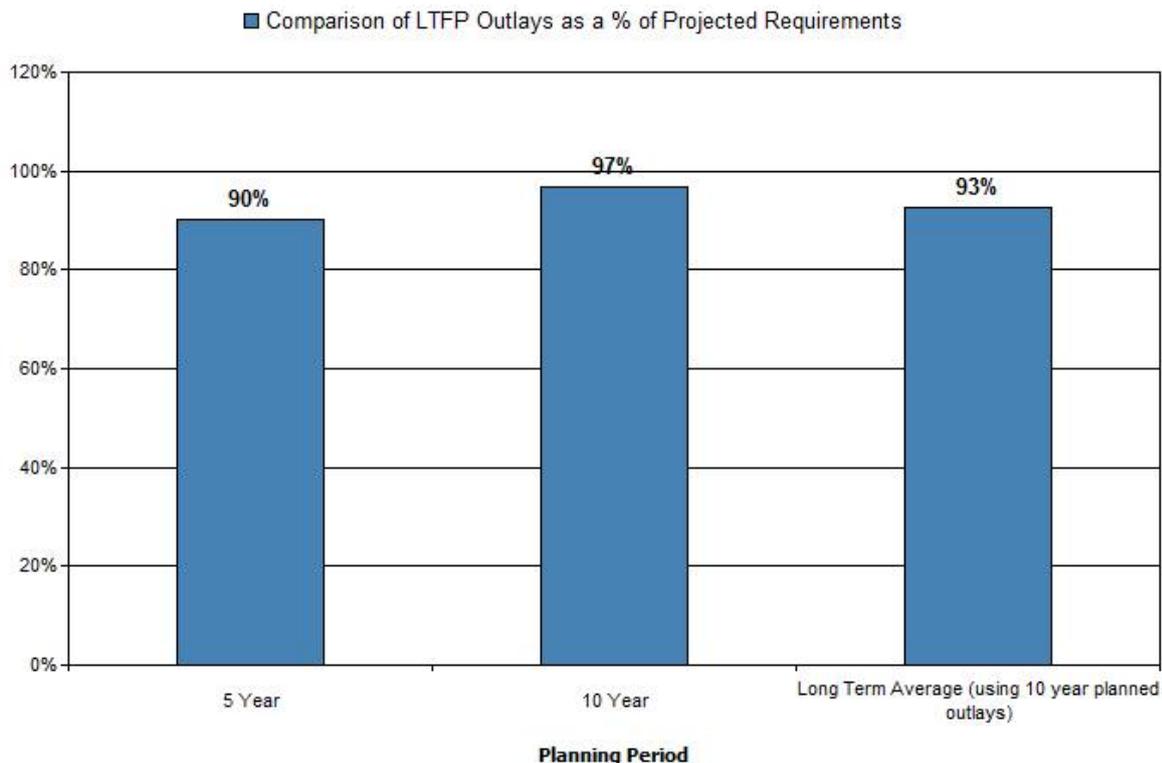
Important note regarding financial forecasts

The small shortfalls shown in the above indicators are considered to be within the margin of error for the reported dataset due to the increasing age of asset data. It is expected that following the fair value revaluation in 2017/18 these shortfalls will be shown significantly smaller or eliminated entirely.

Asset management financial indicators

Figure 7A shows the asset management financial indicators over the 10 year planning period and for the long term life cycle.

Figure 7A: Asset Management Financial Indicators



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.

Figure 8 shows the projected asset renewal and replacement expenditure over the 20 years of the AM Plan. The projected asset renewal and replacement expenditure is compared to renewal and replacement expenditure in the capital works program, which is accommodated in the long term financial plan

Figure 8: Projected and LTFP Budgeted Renewal Expenditure

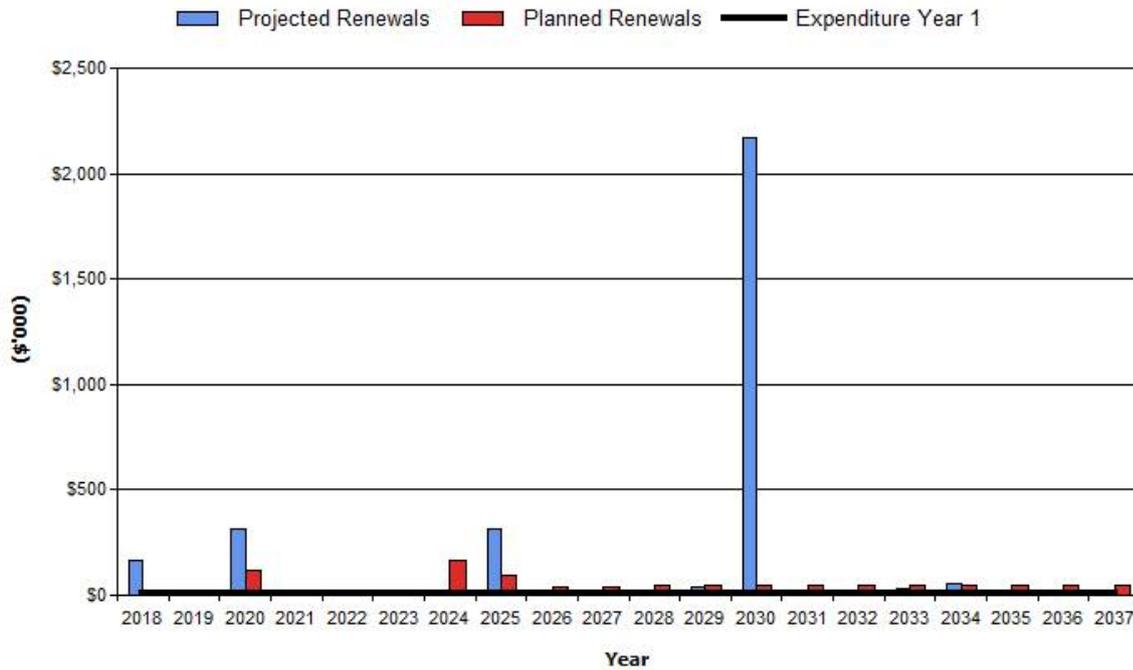


Table 6.1.1 shows the shortfall between projected renewal and replacement expenditures and expenditure accommodated in long term financial plan. Budget expenditures accommodated in the long term financial plan or extrapolated from current budgets are shown in Appendix B.

Table 6.1.1: Projected and LTFP Budgeted Renewals and Financing Shortfall

Year	Projected Renewals (\$'000)	LTFP Renewal Budget (\$'000)	Renewal Financing Shortfall (\$'000) (-ve Gap, +ve Surplus)	Cumulative Shortfall (\$'000) (-ve Gap, +ve Surplus)
2018	\$165	\$14	-\$151	-\$151
2019	\$21	\$15	-\$6	-\$158
2020	\$315	\$124	-\$191	-\$348
2021	\$7	\$22	\$15	-\$333
2022	\$0	\$10	\$10	-\$323
2023	\$0	\$25	\$25	-\$298
2024	\$15	\$172	\$157	-\$141
2025	\$315	\$108	-\$207	-\$348
2026	\$0	\$72	\$72	-\$276
2027	\$0	\$62	\$62	-\$214

Note: A negative shortfall indicates a financing gap, a positive shortfall indicates a surplus for that year.

Providing services in a sustainable manner will require matching of projected asset renewal and replacement expenditure to meet agreed service levels with the corresponding capital works program accommodated in the long term financial plan.

Gaps between projected asset renewal/replacement expenditure and amounts accommodated in the LTFP shown in the later years of the 20 year cycle indicate that LTPF outlay in these years will be higher than the average projected budget. This will be accommodated by the sewerage fund reserves.

We further will manage the 'gap', if needed, by developing future asset management plans 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.

6.1.2 Projected expenditures for long term financial plan

Table 6.1.2 shows the projected expenditures for the 10 year long term financial plan.

Expenditure projections are in 2014 real values.

Table 6.1.2: Projected Expenditures for Long Term Financial Plan (\$000)

Year	Operations (\$000)	Maintenance (\$000)	Projected Capital Renewal (\$000)	Capital Upgrade/ New (\$000)	Disposals (\$000)
2018	\$407	\$126	\$165	\$750	\$0
2019	\$417	\$129	\$21	\$750	\$0
2020	\$427	\$132	\$315	\$500	\$0
2021	\$438	\$135	\$7	\$0	\$0
2022	\$451	\$140	\$0	\$0	\$0
2023	\$465	\$144	\$0	\$0	\$0
2024	\$480	\$149	\$15	\$0	\$0
2025	\$496	\$154	\$315	\$0	\$0
2026	\$512	\$159	\$0	\$0	\$0
2027	\$529	\$164	\$0	\$0	\$0
2028	\$462	\$143	\$7	\$0	\$0
2029	\$462	\$143	\$41	\$0	\$0
2030	\$462	\$143	\$2,171	\$0	\$0
2031	\$462	\$143	\$0	\$0	\$0
2032	\$462	\$143	\$0	\$0	\$0
2033	\$462	\$143	\$28	\$0	\$0
2034	\$462	\$143	\$56	\$0	\$0
2035	\$462	\$143	\$1	\$0	\$0
2036	\$462	\$143	\$1	\$0	\$0
2037	\$462	\$143	\$0	\$0	\$0

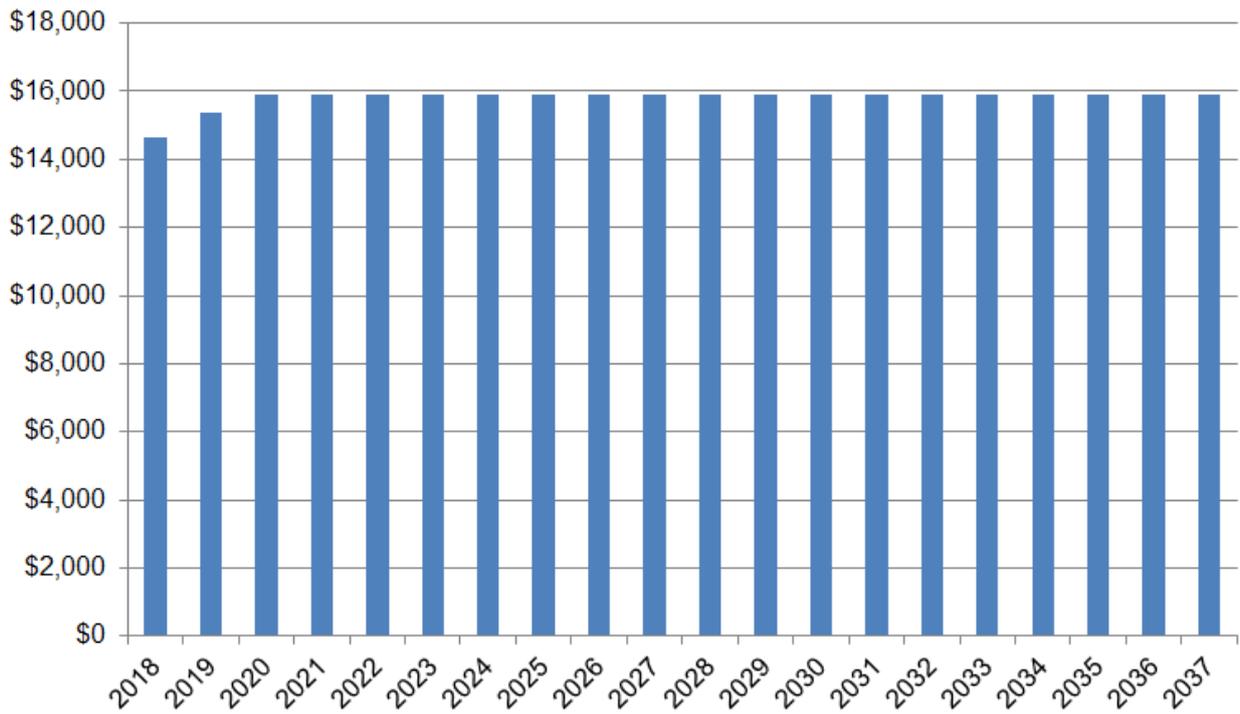
6.2 Funding Strategy

After reviewing service levels, as appropriate to ensure ongoing financial sustainability projected expenditures identified in Section 6.1.2 will be accommodated in the organisation's 10 year long term financial plan.

6.3 Valuation Forecasts

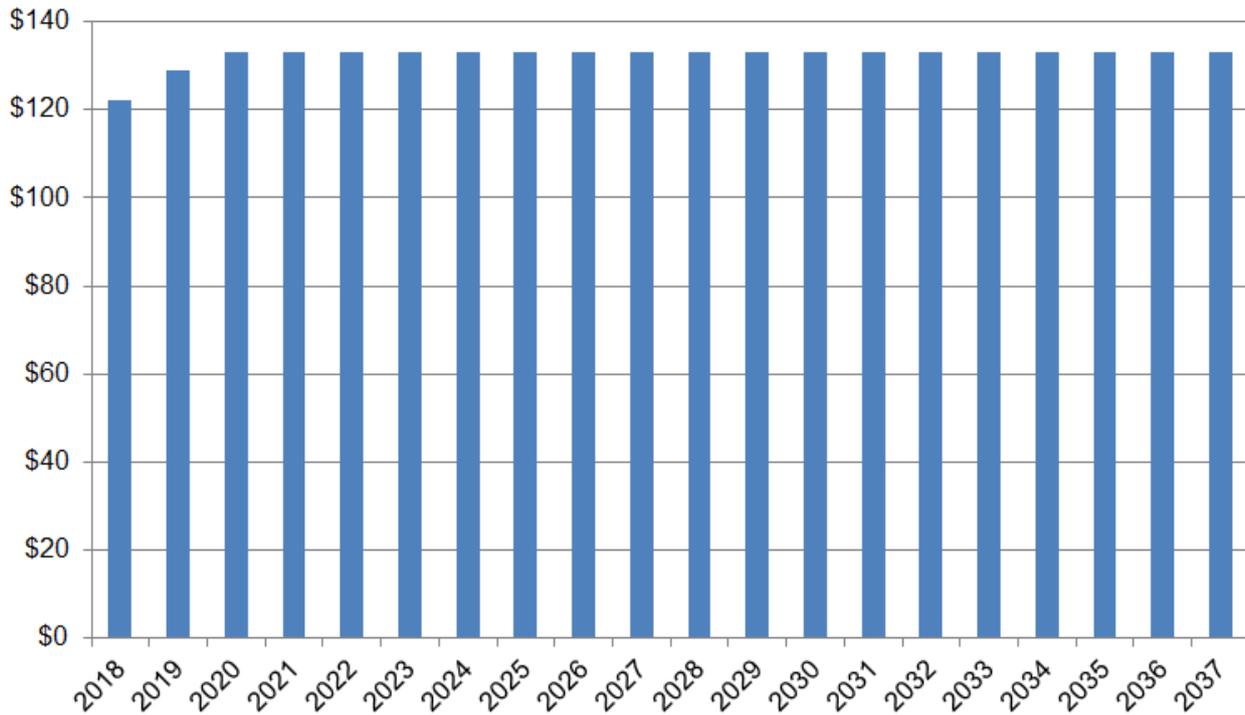
Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by the organisation and from assets constructed by land developers and others and donated to the organisation. Figure 9 shows the projected replacement cost asset values over the planning period in real values.

Figure 9: Projected Asset Values (\$,000)



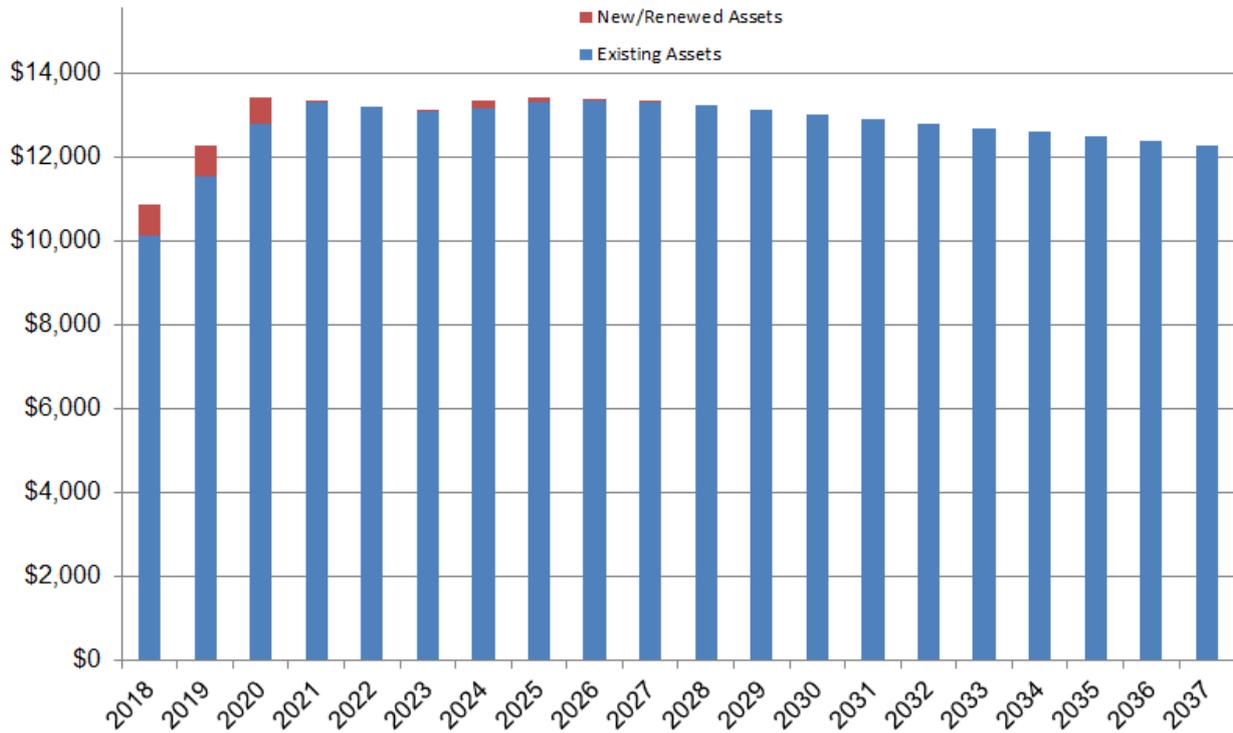
Depreciation expense values are forecast in line with asset values as shown in Figure 10.

Figure 10: Projected Depreciation Expense (\$,000)



The depreciated replacement cost will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets. Forecast of the assets' depreciated replacement cost is shown in Figure 11. The depreciated replacement cost of contributed and new assets is shown in the darker colour and in the lighter colour for existing assets.

Figure 11: Projected Depreciated Replacement Cost (\$,000)



6.4 Key Assumptions made in Financial Forecasts

This section details the key assumptions made in presenting the information contained in this asset management plan and in preparing forecasts of required operating and capital expenditure and asset values, depreciation expense and carrying amount estimates. It is presented to enable readers to gain an understanding of the levels of confidence in the data behind the financial forecasts.

Key assumptions made in this asset management plan and risks that these may change are shown in Table 6.4.

Table 6.4: Key Assumptions made in AM Plan and Risks of Change

Key Assumptions
Asset useful lives are achieved before they require replacement.
Regulation does not require significant change to the operations.
Percentage increase in asset values is negligible
The operating environment (physical, demographic and technical) does not change significantly
Useful life of assets

6.5 Forecast Reliability and Confidence

The expenditure and valuations projections in this AM Plan are based on best available data. Currency and accuracy of data is critical to effective asset and financial management. Data confidence is classified on a 5 level scale¹¹ in accordance with Table 6.5.

¹¹ IPWEA, 2011, IIMM, Table 2.4.6, p 2|59.

Table 6.5: Data Confidence Grading System

Confidence Grade	Description
A Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate $\pm 2\%$
B Reliable	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate $\pm 10\%$
C Uncertain	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated $\pm 25\%$
D Very Uncertain	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete and most data is estimated or extrapolated. Accuracy $\pm 40\%$
E Unknown	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 6.5.1.

Table 6.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	B	
Growth projections	B	Sourced from Census
Operations expenditures	B	Sourced from audited financial report
Maintenance expenditures	B	Sourced from audited financial report
Projected Renewal exps. - Asset values	A	Sourced from adopted LTFP
- Asset residual values	C	Sourced from audited Water and Sewer revaluation 30 th June 2013. Data is approaching obsolescence
- Asset useful lives	C	Sourced from audited Water and Sewer revaluation 30 th June 2013. Data is approaching obsolescence
- Condition modelling	C	Sourced from audited Water and Sewer revaluation 30 th June 2013. Data is approaching obsolescence
- Network renewals	B	Based on condition modelling.
- Defect repairs	B	Based on work completed

Over all data sources, the data confidence is assessed as high confidence level for data used in the preparation of this AM Plan.

7. PLAN IMPROVEMENT AND MONITORING

7.1 Status of Asset Management Practices

7.1.1 Accounting and financial systems

Council currently uses Civica's finance system to record and report financial transactions.

Accountabilities for financial systems

Council's Corporate Services Director is responsible for the financial systems of Council.

Accounting standards and regulations

Council is required to prepare their financial statements in accordance with all relevant Australian Accounting Standards; these include but are not limited to;

- AASB 116 Property, Plant and Equipment.
- AASB 136 Impairment of Assets.
- AASB 1021 Depreciation of Non-Current Assets.
- AASB 1041 Accounting Policies.
- AAS 27 Financial Reporting by Local Government.
- AAS 1010 Recoverable Amounts of Non-Current Assets.
- AAS 1015 Accounting for Acquisition of Assets

Capital/maintenance threshold

Items of infrastructure, property, plant and equipment are capitalised in accordance specified in Note 1 of Council Financial Statements

Required changes to accounting financial systems arising from this AM Plan

No changes to Council's financial system are required.

7.1.2 Asset management system

Council currently uses Civica's Asset Management module as the Asset management system.

Asset registers

Asset registers are recorded within the Civica AM module.

Linkage from asset management to financial system

The Asset and Financial systems are both linked through the use of Civica modules.

Accountabilities for asset management system and data maintenance

Accountability for the asset management system is the responsibility of the Corporate Asset and Risk Manager.

Required changes to asset management system arising from this AM Plan

- Full utilisation of all components of the AM module.
- Improved mapping of sewerage pipework.
- Link customer requests with specific assets to give a better service indicator.

7.2 Improvement Program

The asset management improvement plan generated from this asset management plan is shown in Table 8.2.

Table 7.2: Improvement Plan

Task No	Task	Responsibility	Resources Required	Timeline
1	Fully utilise AM module	DAM	Internal	Jan 2018
2	Improve maintenance and renewal reporting back to AM Department	DAM/TSE	Internal	June 2018
3	Link Assets with GIS System for better mapping	DAM/GIS/TSE	Internal	Jan 2018
4	Implement documented procedure for capitalisation	DCS/DAM/TSE	Internal	July 2018

7.3 Monitoring and Review Procedures

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

The AM 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 AM Plan has a life of 4 years (Council election cycle) and is due for complete revision and updating within 6 months of each Council election.

7.4 Performance Measures

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

- The degree to which the required projected expenditures identified in this asset management plan are incorporated into the organisation's long term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the asset management plan,
- The degree to which the existing and projected service levels and service consequences (what we cannot do), risks and residual risks are incorporated into the organisation's Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 1.0.

8. REFERENCES

IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/IIMM

IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/namsplus.

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

IPWEA, 2011, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, www.ipwea.org.au/IIMM

Organisation, 'Strategic Plan 20XX – 20XX',

Organisation, 'Annual Plan and Budget'.

9. APPENDICES

Appendix A Budgeted Expenditures Accommodated in LTFP

Appendix B Abbreviations

Appendix C Glossary

Appendix A - Budgeted Expenditures Accommodated in LTFP

NAMS.PLUS3 Asset Management Gwydir SC

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SEWER - 2018-2027_s2_

Asset Management Plan

First year of expenditure projections **2018** (financial yr ending)

SEWER - 2018-2027

Asset values at start of planning period

Current replacement cost	\$13,888 (000)
Depreciable amount	\$13,741 (000)
Depreciated replacement cost	\$10,133 (000)
Annual depreciation expense	\$116 (000)

Calc CRC from Asset Register

\$13,888 (000)

This is a check for you.

Operations and Maintenance Costs for New Assets

	% of asset value
Additional operations costs	3.33%
Additional maintenance	1.03%
Additional depreciation	0.84%

Planned renewal budget (information only)

You may use these values calculated from your data or overwrite the links.

Planned Expenditures from LTFP

20 Year Expenditure Projections Note: Enter all values in current **2018** values

Financial year ending	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000	\$000
Expenditure Outlays included in Long Term Financial Plan (in current \$ values)										
Operations										
Operations budget	\$212	\$217	\$222	\$228	\$235	\$242	\$250	\$258	\$266	\$275
Management budget	\$195	\$200	\$205	\$210	\$216	\$223	\$230	\$238	\$246	\$254
AM systems budget	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total operations	\$407	\$417	\$427	\$438	\$451	\$465	\$480	\$496	\$512	\$529
Maintenance										
Reactive maintenance budget	\$28	\$29	\$30	\$30	\$31	\$32	\$33	\$34	\$35	\$36
Planned maintenance budget	\$71	\$72	\$74	\$76	\$79	\$81	\$84	\$87	\$90	\$93
Specific maintenance items budget	\$27	\$28	\$28	\$29	\$30	\$31	\$32	\$33	\$34	\$35
Total maintenance	\$126	\$129	\$132	\$135	\$140	\$144	\$149	\$154	\$159	\$164
Capital										
Planned renewal budget	\$4		\$114	\$7		\$15	\$162	\$98	\$42	\$42
Planned upgrade/new budget	\$750	\$750	\$500	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-growth contributed asset value	\$0									

Appendix B - 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	Earthworks/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
WDCRD	Written down current replacement cost

Appendix C - 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, and 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 need 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 organisation, 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 organisation.

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, AIFMG Glossary