



Alexandrina 2040

Asset Management Plan



2022 – 2031

Image: Goolwa Pump Track and Skate Park

Transport Asset Management Plan (Roads, Kerbs, Footpaths, Bridges & Major Culverts)



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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2022 to 2031 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Transport network comprises:

- Sealed and Unsealed Roads
- Kerbs
- Footpaths
- Bridges & Major Culverts

The above infrastructure assets have significant total renewal value estimated at \$276,882,912

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

1.4 Future Demand

The main demands for new services are created by:

- Population growth
- Climate change
- Legislative Change
- Changes in Technology

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Transport class is estimated as \$89,291,872 or \$8,929,187 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is \$90,320,856 or \$9,032,086 on average per year as per the Long-Term Financial plan or Planned Budget. This is 95.7% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The informed decision making process depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Transport leaves a shortfall of \$102,899 average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

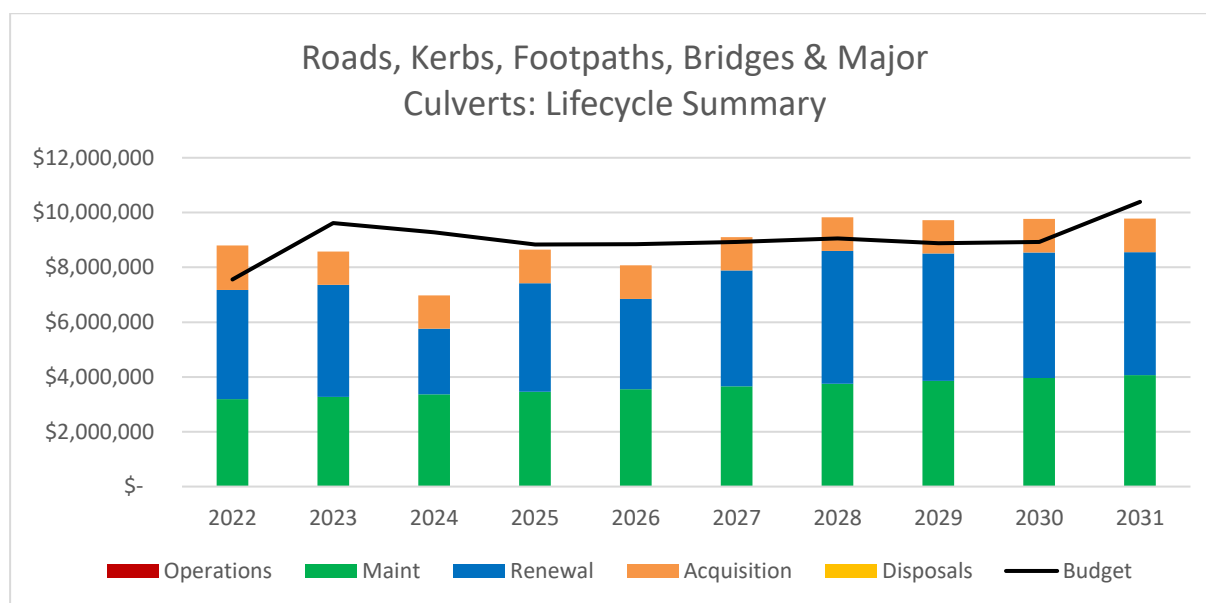


Figure Values are in current dollars.

We plan to provide Transport services for the following:

- Operation, maintenance, renewal and upgrade of sealed and unsealed roads, kerb, footpath, bridges & major culverts to meet service levels set by in annual budgets.

1.6.2 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Confidence in asset data and condition compared
- Ability to deliver projects on time and within allocated budget
- Reactive projects

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

- Ongoing data and condition verification to better inform forward works planning and scheduling
- Detailed project scopes and cost estimates for all programs
- Tight controls on budget, scope creep and variations during program delivery

1.7 Asset Management Practices

Our systems to manage assets include:

- Synergy (migrating to Tech 1 in July 2021)
- MyData (migrating to Tech 1 in July 2021)

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs, this is done using the acquisition year and the useful life;
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Asset Information System (improve data and condition capture)
- Risk Management (review, refine, expand and link with Council's risk management plan)
- Predictive Modelling (unit rates, project costing, forward works planning)
- Levels of Service definition (develop, finalise and adopt agreed levels of service across all asset classes)

2.0 Introduction

2.1 Background

This Asset Management Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

The Asset Management Plan is to be read with the Long Term Financial Plan. This should include the Asset Accounting Policy along with the Alexandrina 2040 Strategic Plan

The infrastructure assets covered by this Asset Management Plan include sealed and unsealed roads, kerbs, footpaths and bridges & major culverts. For a detailed summary of the assets covered in this Asset Management Plan refer to Table in Section 5.

The infrastructure assets included in this plan have a total replacement value of \$276,882,912.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Alexandrina Council Elected Body	<ul style="list-style-type: none"> ■ Represent needs of the community, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service is sustainable.
CEO	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan.
General Manager Environment	Ensure services are sustainable and that Environment Division delivers in accordance with the adopted plan, on time and within budget.
General Manager Resources	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan. Facilitates the funding of the plan.

2.2 Goals and Objectives of Asset Ownership

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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 ¹

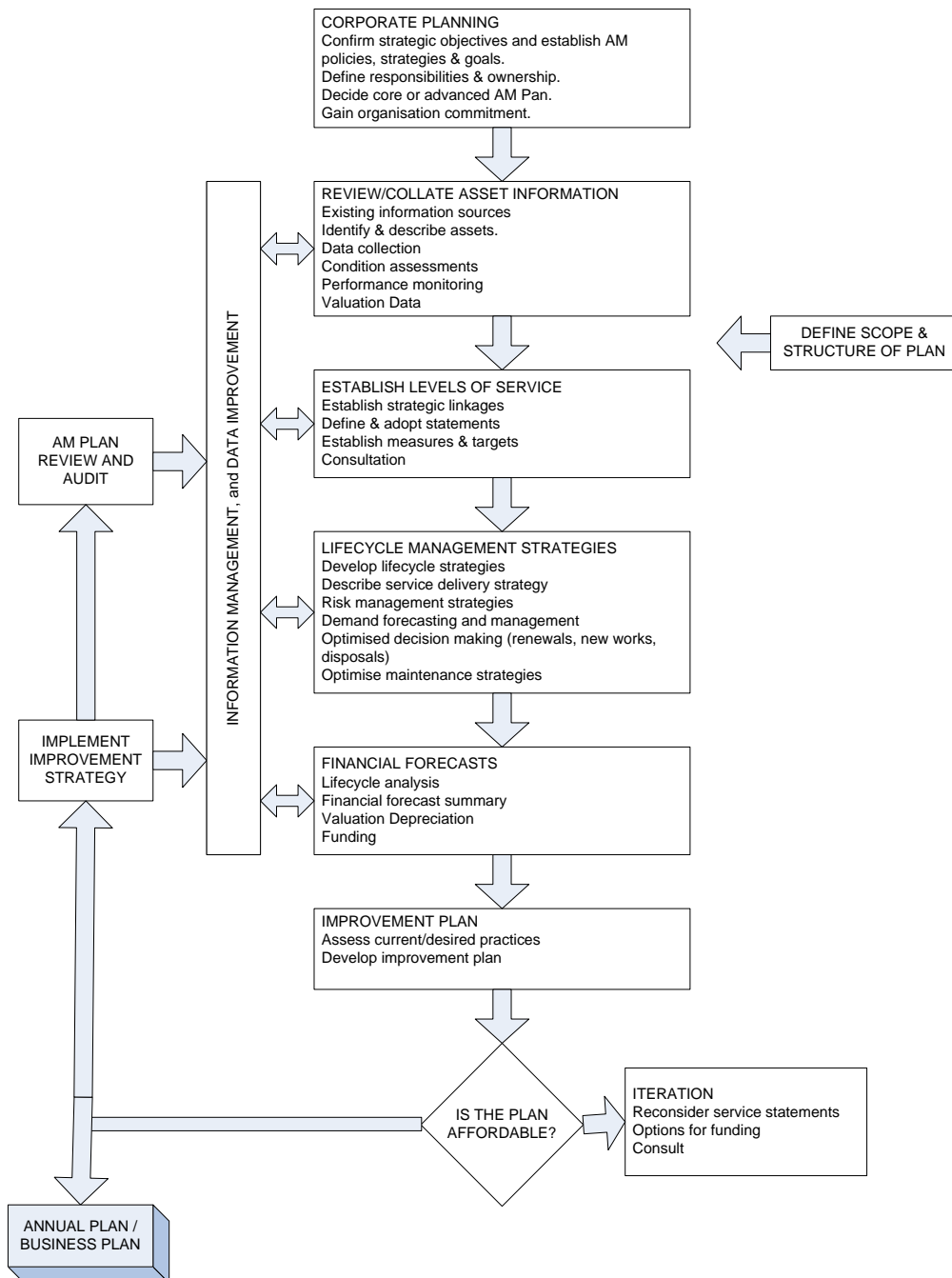
¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

■ ISO 55000²

A road map for preparing an Asset Management Plan is shown below.

Road Map for preparing an Asset Management Plan

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



² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by the Alexandrina Council's Elected Members. Future revisions of the Asset Management Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Alexandrina Council's Elected Members and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Alexandrina Council's vision, mission, goals and objectives.

Our mission is:

Be Involved

Living an inspiring Vision - Inspired employees go the extra mile

Communicating our strategies and goals - A clear strategy points employees in the right direction

Developing our people - High performing people drive organisational results

Recognising our people - saying thanks makes a big difference

Caring for our people - Demonstrating that we care

Listening and adapting to our Customers' needs - Creating long term customer relationships

Continually improving our systems - appropriate systems support performance

Strategic goals have been set by the Council. At the time of writing the plan, Council is considering its new Strategic planning document (Alexandrina 2040). This section will be updated prior to final endorsement by the Council.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Transport service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
Civil Liability Act	Liability of road authorities. Section 42, May 2004 inclusion into the Act to provide a replacement for the non-feasance defence consequence to the May 2001 High Court judgement
Coastal Protection Act	The responsibilities and powers of Council in protecting the quality of the coastal environment.
Disability Discrimination Act	The responsibilities and powers of Council in providing equitable access for persons with a disability.
Environmental Health Act	The responsibilities and powers of Council in maintaining public health.
Environmental Protection Act	The responsibilities of Council in protecting the environment.
Highways Act	Sets out the legislative framework for roads and road authorities in South Australia.

Local Government Act	The role, purpose, responsibilities and powers of Council including the preparation of a long-term financial plan supported by the IAMP for sustainable service delivery.
Native Vegetation Act	The responsibilities and powers of Council in providing protection for native vegetation.
Landscape South Australia Act (and plans)	The role, purpose, responsibilities and powers of local government in controlling the use of natural resources.
Occupational Health, Safety and Welfare Act	The responsibilities of Council in providing safe work practices and worksites.
River Murray Act	The responsibilities and powers of Council in protecting the quality of the river flows.
Road Traffic Act 1961	The responsibilities of Council in traffic matters.
Other relevant State and Federal Acts and Regulations	As appropriate

3.4 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service ... what is the condition or quality of the service?

Function Is it suitable for its intended purpose. Is it the right service?

Capacity/Use Is the service over or under used ... do we need more or less of these assets?

In Table 3.4 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Table 3.4: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Data validation	To be developed	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Function	Hierarchy of Assets	Has supporting documentation (policies, procedures etc.)	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Capacity	Program delivery	Programs / Project completed on time and budget	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)

3.5 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library)
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs)
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement)

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	New assets to provide improvement services to community	Projects driven by community feedback and verified data sources	LTFP informs acquisition, but limited knowledge on why	The Acquisitions that we would like to do as per the Lifecycle Forecast include verified data and community input.
Operation	To operate existing assets as intended	Assets kept at an acceptable operating service level	Managing within approved budgets	Continue to manage within approved budgets
Maintenance	Maintain assets in accordance with appropriate levels of service	Assets being maintained before failing. Appropriate Intervention levels	Managing within approved budgets	Continue to manage within approved budgets
Renewal	Renew existing Assets in accordance with AM practices and appropriate intervention levels	Programs completed in fullness on time and within budget	Programs being delivered with some savings	Continue to review scopes, unit rates, programs to ensure appropriate expenditure being spent correctly in accordance with appropriate intervention levels

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

³ IPWEA, 2015, IIMM, p 2 | 28.

4.0 FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

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

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 can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this Asset Management Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Maintenance and Upgrade	Medium	High	Potential lack of budget to manage maintain both existing and new assets	Ensure appropriate budgets are adopted that consider additional O&M costs for new assets
Safety	Medium	High	How will the change impact the service	How do you plan to manage the demand?
Asset Program Review	Low	Medium	Asset Management in new system will deliver greater outcomes	Ensure, procedures, policies, data and condition tasks are completed, documented to improve asset management within the Council

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process, climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

At the time of writing this report, Council was in the early stages of reviewing climate change and the impacts on infrastructure. It is expected that the outcomes of this work will heavily influence the Asset Management Practices into the future.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Buildings resilience will have benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this Asset Management Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Roads (sealed and unsealed)	2370km	179,621,408
Kerbs	301km	29,299,710
Footpaths	113km	24,530,192
Bridges and Major Culverts	97 items	43,431,595

All figure values are shown in current day dollars.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. At the time of writing, there were no known deficiencies in service performance that would be attributed to the adoption of this plan.

5.1.3 Asset condition

Condition is currently monitored using Assetic MyData and cyclic condition audits to inform our works planning and management.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

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. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

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

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.

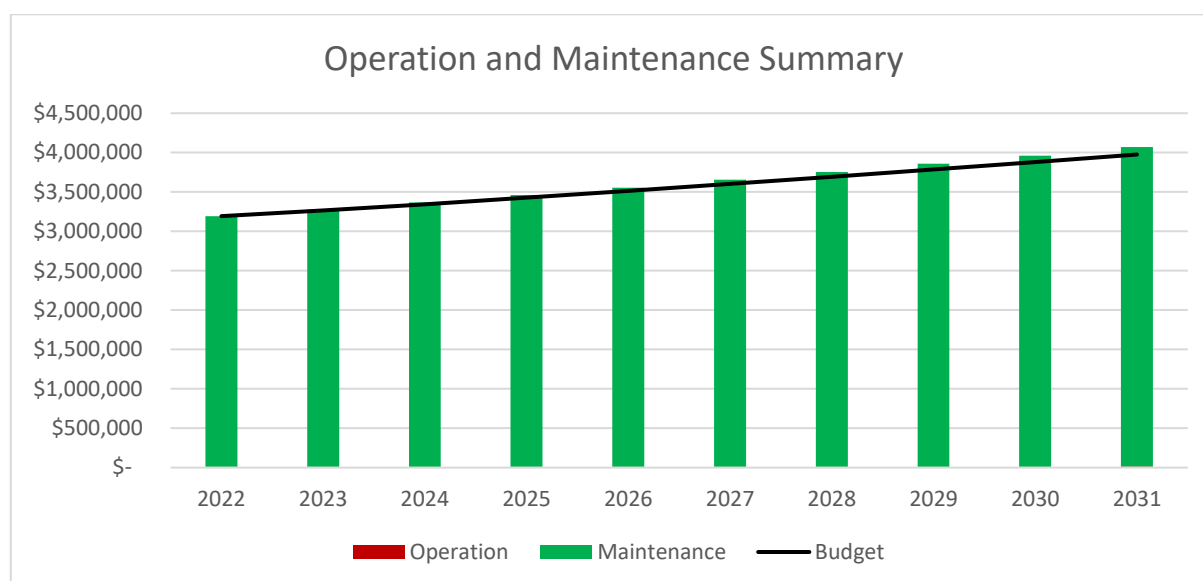
At the time of writing this plan, Council had commenced migration to the Technology1 system. As part of the migration, a complete Asset Hierarchy review will take place.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of, the forecast operation and maintenance costs are expected to decrease. Figure 5.2

shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Sealed roads	Surface - between 15 and 25 years Pavement base – 80 years Pavement subbase – 320 years
Unsealed roads	Surface – between 10 and 20 years
Kerb	Between 50 and 80 years
Footpaths	Asphalt – 20 years Concrete – between 50 and 70 years Paver – 40 years Pavement – 100 years

The estimates for renewals in this Asset Management Plan were based on the asset register or an alternate Method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).⁴

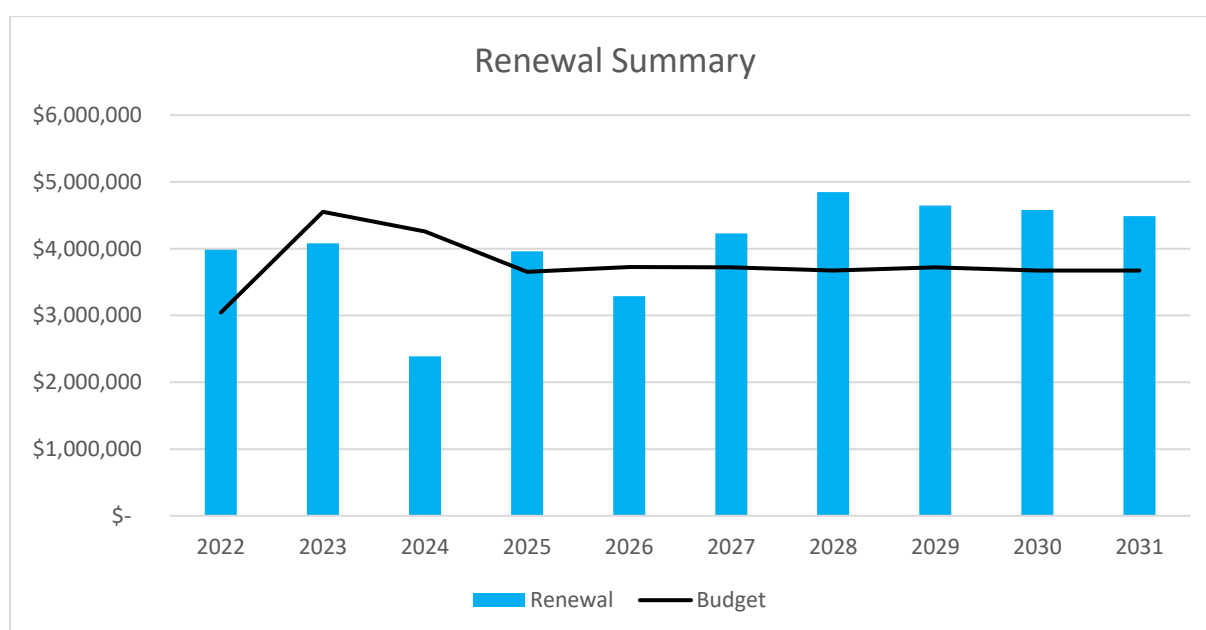
It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁵

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4: Forecast Renewal Costs



All figure values are shown in current day dollars.

5.5 Acquisition Plan

Acquisition reflects new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Council.

⁴ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁵ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

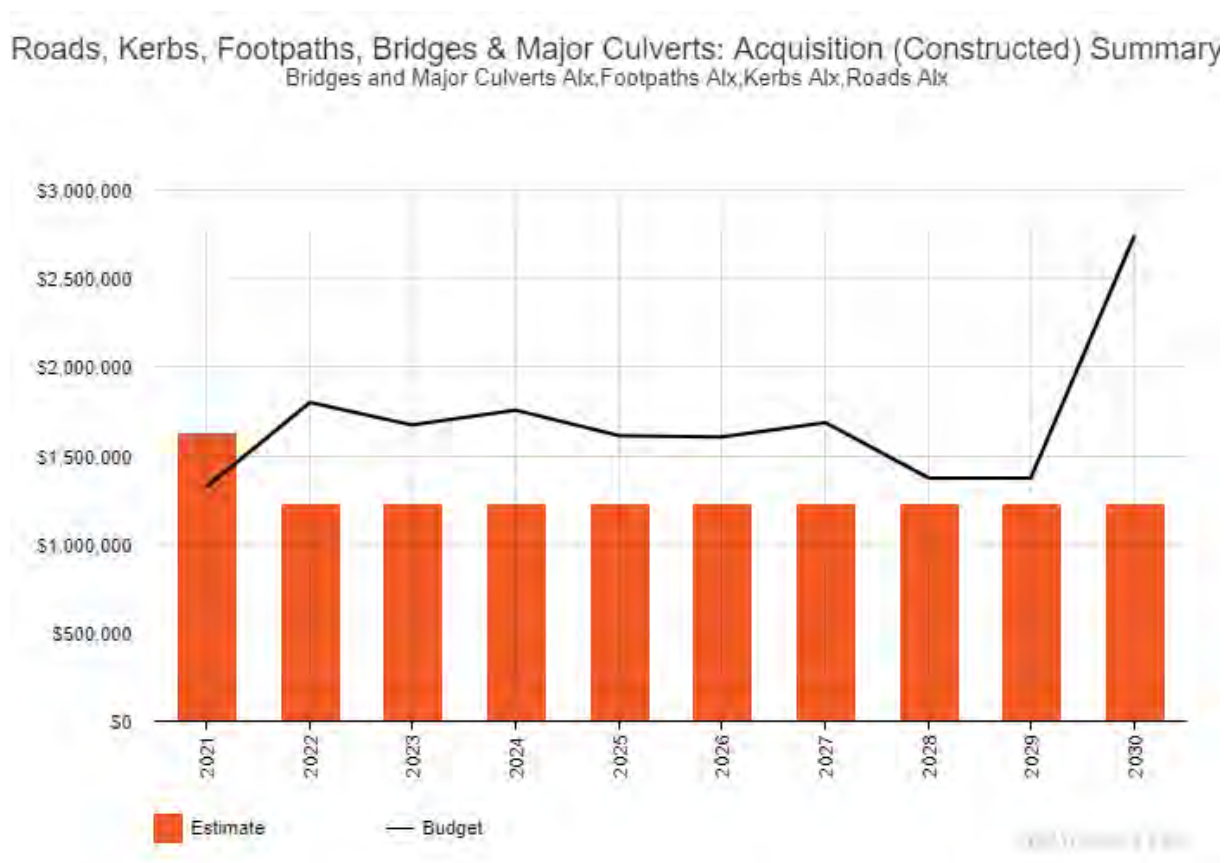
5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term.

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised in Figure 5.5.1 shown relative to the previously planned budget. The forecast acquisition capital works program is shown in Appendix A.

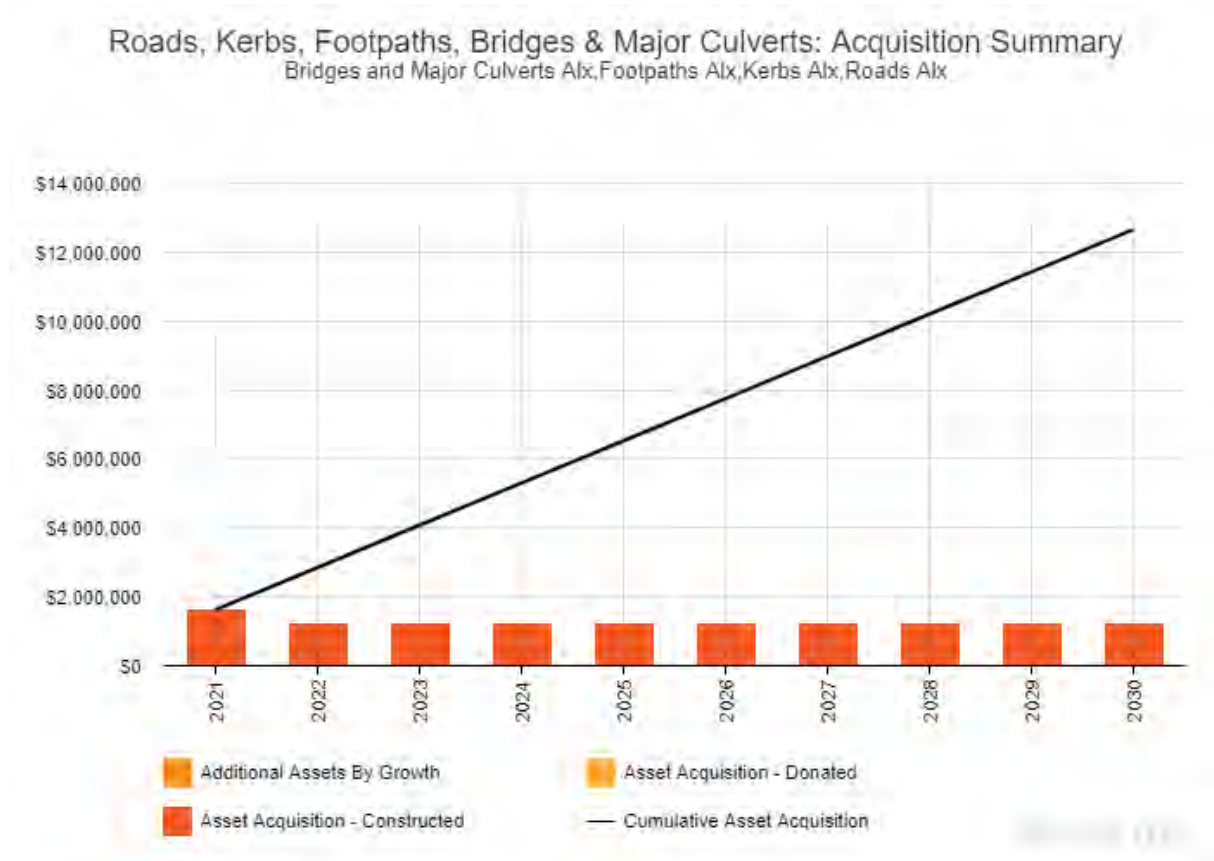
Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

When a Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Council. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current dollars.

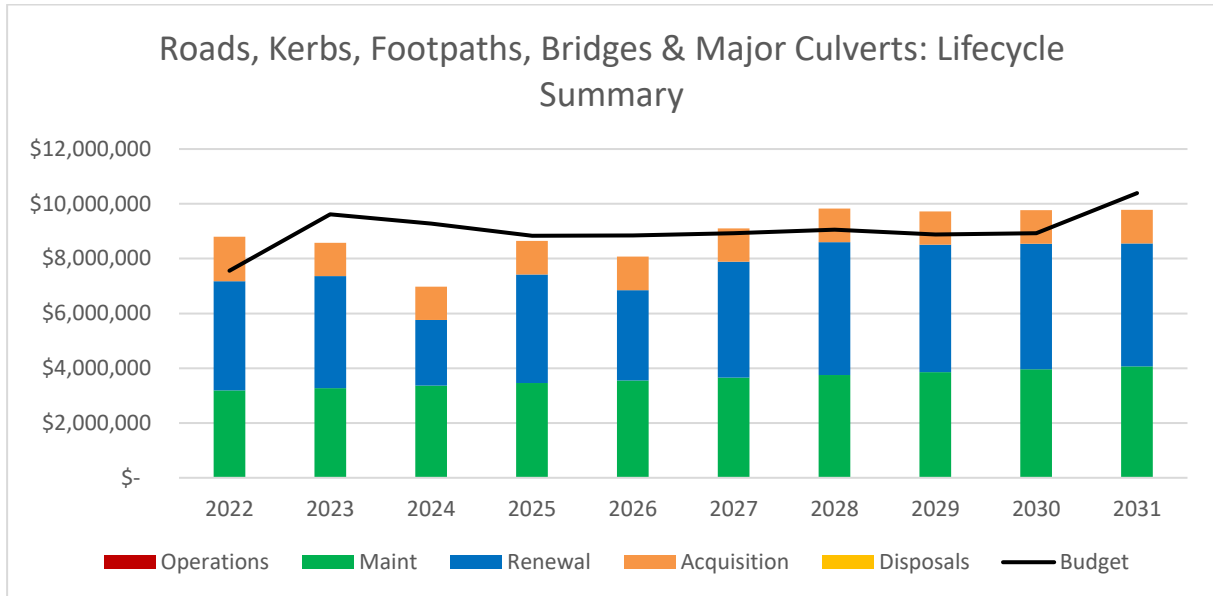
Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the previously proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The previously proposed budget line indicates the estimate of available funding. The gap between the forecast work and the previously proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’⁶.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Roads	Surface degradation Pavement failure	Vehicle damage Property damage Environmental and Public Health impacts
Kerbs	Material failure Physical Damage	Compromise drainage services Compromise road surface/ pavement integrity
Footpaths	Surface and/or pavement degradation	Breaks in transport network Reputational damage Property damage Environmental and Public Health impacts
Bridges & Major Culverts	Structural failure Insufficient sizing Surface degradation	Compromised drainage services Breaks in transport network Reputational damage Property damage Environmental and Public Health impacts

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

⁶ ISO 31000:2009, p 2

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

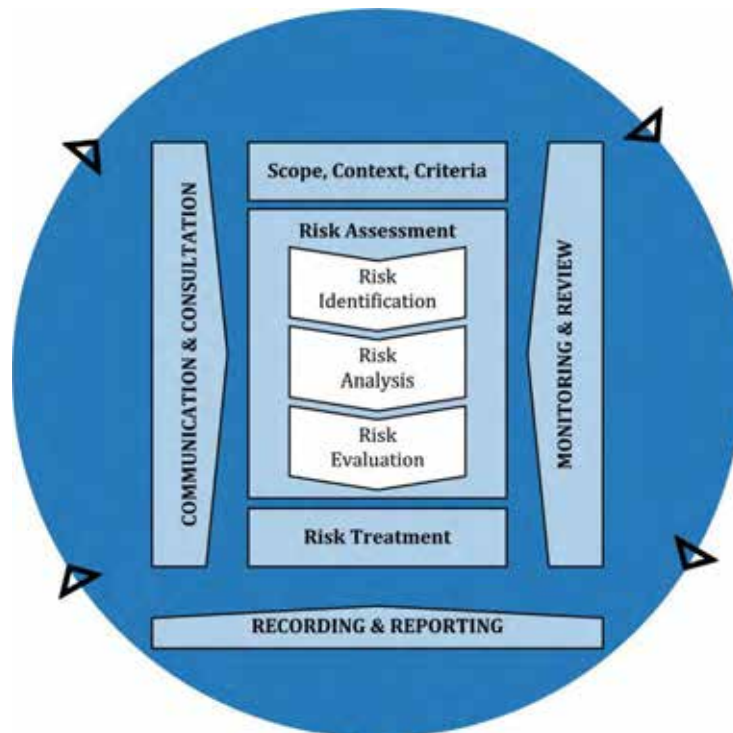


Fig 6.2 Risk Management Process – Abridged

Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Council's Risk Management Framework

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0032/192668/Risk-Management-Framework.pdf

Council's Risk Management Policy

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0023/193046/Risk-Management-Policy.pdf

6.3 Infrastructure Resilience Approach

We do not currently measure our resilience in service delivery. This will be included in future iterations of the Asset Management Plan.

7.0 FINANCIAL SUMMARY

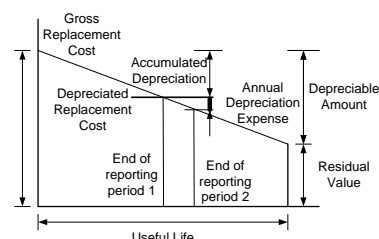
This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below.

Current (Gross) Replacement Cost	\$276,882,912
Depreciable Amount	\$276,882,912
Depreciated Replacement Cost ⁷	\$171,645,760
Depreciation	\$6,534,663



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the Asset Management Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁸ 104.49%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 104.49% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

This Asset Management Plan identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the previously proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$7,664,187 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$7,338,136 on average per year giving a 10 year funding shortfall or funding excess of \$-326,051 per year. The funding shortfall is the result of a greater understanding of the asset base, their condition, maintenance requirements and levels of service. This excludes acquired assets.

⁷ Also reported as Written Down Value, Carrying or Net Book Value.

⁸ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first year of the Asset Management Plan and ideally over the 10 year life of the Long-Term Financial Plan.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) for the 10 year long-term financial plan.

Forecast costs are shown in 2022 dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2022	\$1,625,000	\$9,216	\$3,184,268	\$3,982,603	0
2023	\$1,225,000	\$9,468	\$3,268,337	\$4,079,469	0
2024	\$1,225,000	\$9,734	\$3,356,744	\$2,389,676	0
2025	\$1,225,000	\$10,016	\$3,450,360	\$3,960,715	0
2026	\$1,225,000	\$10,303	\$3,546,063	\$3,290,591	0
2027	\$1,225,000	\$10,597	\$3,643,902	\$4,228,955	0
2028	\$1,225,000	\$10,896	\$3,743,931	\$4,845,953	0
2029	\$1,225,000	\$11,203	\$3,846,204	\$4,644,245	0
2030	\$1,225,000	\$11,516	\$3,950,779	\$4,577,906	0
2031	\$1,225,000	\$11,836	\$4,057,710	\$4,488,676	0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and Long-Term financial plan.

The financial strategy of the Council determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to remain consistent as additional assets are added or removed from service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this Asset Management Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this Asset Management Plan are:

- That available data was accurate
- Financial data is accurate

7.5 Forecast Reliability and Confidence

The forecast costs, previously proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale⁹ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed 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 7.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	B	Further improvements during next planning cycle
Growth projections	B	Further improvements during next planning cycle
Acquisition forecast	B	Further improvements during next planning cycle
Operation forecast	B	Comfortable with data.
Maintenance forecast	B	Comfortable with data.
Renewal forecast		
- Asset values	B	Comfortable with data.
- Asset useful lives	B	Comfortable with data.
- Condition modelling	B-C	Looking to improve as part of Tech1 rollout
Disposal forecast	E	NA

The estimated confidence level for and reliability of data used in this AM Plan is considered to be a B – reliable.

⁹ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹⁰

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The Councils current Corporate Information system is Synergy. Council will migrate to Technology1 from July 2021.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is Assetic MyData. Council will migrate to Technology1 from July 2021.

8.2 Improvement Plan

It is important that the Council recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Asset Management Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Specific community Levels of Service unknown.	Environment Division	Internal	Within 4 years
2	Impacts of the economic downturn on growth predictions.	Resources and Environment Divisions	Internal	Within 4 years
3	Simplistic and restrictive financial analysis available from on-line templates.	Resources and Environment Divisions	Internal and external support	Within 2 years
4	Detailed assessment of risks awaiting production of the Risk Management Plan.	Environment Division	Internal	Within 4 years
5	Create an asset review program that considers data collection & validation; unit rate and valuations review; useful lives; predictive modelling update; forward works program; and AMP review. Aiming to undertake a review of two asset classes per year.	Environment Division	Internal	2 Asset Classes per year

8.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of each Council election.

¹⁰ ISO 55000 Refers to this the Asset Management System

8.4 Performance Measures

The effectiveness of this Asset Management Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the Long-Term Financial Plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate 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, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
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- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Alexandrina 2040 Strategic Plan
- Alexandrina Annual Business Plan and Budget

10.0 APPENDICES

Appendix A Acquisition Forecast

Table A1 – Acquisition Forecast Summary Roads

Year	Constructed	Contributed	Previous Planned Budget
2022	\$400,000	\$0	\$202,000
2023	\$400,000	\$0	\$545,100
2024	\$400,000	\$0	\$321,500
2025	\$400,000	\$0	\$403,700
2026	\$400,000	\$0	\$260,600
2027	\$400,000	\$0	\$200,000
2028	\$400,000	\$0	\$200,000
2029	\$400,000	\$0	\$200,000
2030	\$400,000	\$0	\$200,000
2031	\$400,000	\$0	\$700,800

Table A2 – Acquisition Forecast Summary Kerbs

Year	Constructed	Contributed	Previous Planned Budget
2022	\$700,000	\$0	\$346,300
2023	\$300,000	\$0	\$427,500
2024	\$300,000	\$0	\$346,300
2025	\$300,000	\$0	\$346,300
2026	\$300,000	\$0	\$346,300
2027	\$300,000	\$0	\$346,300
2028	\$300,000	\$0	\$346,300
2029	\$300,000	\$0	\$346,300
2030	\$300,000	\$0	\$346,300
2031	\$300,000	\$0	\$346,300

Table A3 – Acquisition Forecast Summary Footpaths

Year	Constructed	Contributed	Previous Planned Budget
2022	\$450,000	\$0	\$672,200
2023	\$450,000	\$0	\$727,200
2024	\$450,000	\$0	\$905,600
2025	\$450,000	\$0	\$905,600
2026	\$450,000	\$0	\$905,600
2027	\$450,000	\$0	\$957,800
2028	\$450,000	\$0	\$1,040,400
2029	\$450,000	\$0	\$726,700
2030	\$450,000	\$0	\$726,700
2031	\$450,000	\$0	\$1,593,800

Table A4 – Acquisition Forecast Summary Bridges & Major Culverts

Year	Constructed	Contributed	Previous Planned Budget
2022	\$75,000	\$0	\$100,000
2023	\$75,000	\$0	\$100,000
2024	\$75,000	\$0	\$100,000
2025	\$75,000	\$0	\$100,000
2026	\$75,000	\$0	\$100,000
2027	\$75,000	\$0	\$100,000
2028	\$75,000	\$0	\$100,000
2029	\$75,000	\$0	\$100,000
2030	\$75,000	\$0	\$100,000
2031	\$75,000	\$0	\$100,000

Appendix B Operation Forecast

Table B1 – Operation Forecast Summary Roads

Year	Operations Forecast	Previous Operations Budget
2022	\$9,216	\$9,216
2023	\$9,468	\$9,428
2024	\$9,734	\$9,654
2025	\$10,016	\$9,896
2026	\$10,303	\$10,143
2027	\$10,597	\$10,397
2028	\$10,896	\$10,656
2029	\$11,203	\$10,923
2030	\$11,516	\$11,196
2031	\$11,836	\$11,476

Table B2 – Operation Forecast Summary Kerbs

Nil

Table B3 – Operation Forecast Summary Footpaths

Nil

Table B4 – Operation Forecast Summary Bridges & Major Culverts

Nil

Appendix C Maintenance Forecast

Table C1 - Maintenance Forecast Summary Roads

Year	Maintenance Forecast	Previous Maintenance Budget
2022	\$2,956,397	\$2,956,397
2023	\$3,031,755	\$3,024,395
2024	\$3,111,700	\$3,096,980
2025	\$3,196,484	\$3,174,404
2026	\$3,283,205	\$3,253,765
2027	\$3,371,909	\$3,335,109
2028	\$3,462,647	\$3,418,487
2029	\$3,555,469	\$3,503,949
2030	\$3,650,428	\$3,591,548
2031	\$3,747,576	\$3,681,336

Table C2 - Maintenance Forecast Summary Kerbs

Year	Maintenance Forecast	Previous Maintenance Budget
2022	\$76,615	\$76,615
2023	\$80,407	\$78,377
2024	\$83,158	\$80,258
2025	\$86,035	\$82,265
2026	\$88,961	\$84,321
2027	\$91,939	\$86,429
2028	\$94,970	\$88,590
2029	\$98,055	\$90,805
2030	\$101,195	\$93,075
2031	\$104,392	\$95,402

Table C3 - Maintenance Forecast Summary Footpaths

Year	Maintenance Forecast	Previous Maintenance Budget
2022	\$113,841	\$113,841
2023	\$117,824	\$115,889
2024	\$122,541	\$118,671
2025	\$127,442	\$121,637
2026	\$132,418	\$124,678
2027	\$137,470	\$127,795
2028	\$142,600	\$130,990
2029	\$147,810	\$134,265
2030	\$153,102	\$137,622
2031	\$158,477	\$141,062

Table C3 - Maintenance Forecast Summary Footpaths

Year	Maintenance Forecast	Previous Maintenance Budget
2022	\$37,415	\$37,415
2023	\$38,351	\$38,276
2024	\$39,345	\$39,195
2025	\$40,399	\$40,174
2026	\$41,479	\$41,179
2027	\$42,583	\$42,208
2028	\$43,714	\$43,264
2029	\$44,870	\$44,345
2030	\$46,054	\$45,454
2031	\$47,265	\$46,590

Appendix D Renewal Forecast Summary

Table D1 - Renewal Forecast Summary Roads

Year	Renewal Forecast	Smoothed Renewal Forecast	Previous Renewal Budget
2022	\$476,175	\$3,476,175	\$2,699,000
2023	\$825,258	\$3,825,258	\$4,150,300
2024	\$211,676	\$2,221,676	\$4,018,000
2025	\$253,947	\$3,653,947	\$3,377,540
2026	\$759,342	\$2,859,342	\$3,392,400
2027	\$6,346,309	\$3,846,309	\$3,390,040
2028	\$9,494,669	\$4,494,669	\$3,342,300
2029	\$10,550,621	\$4,550,621	\$3,390,040
2030	\$3,596,086	\$4,096,086	\$3,342,300
2031	\$4,826,738	\$4,316,738	\$3,342,300

Table D2 - Renewal Forecast Summary Kerbs

Year	Renewal Forecast	Previous Renewal Budget
2022	\$218,212	\$31,430
2023	\$0	\$31,430
2024	\$0	\$31,430
2025	\$0	\$31,430
2026	\$0	\$31,430
2027	\$23,578	\$31,430
2028	\$0	\$31,430
2029	\$0	\$31,430
2030	\$0	\$31,430
2031	\$171,938	\$31,430

Table D3 - Renewal Forecast Summary Footpaths

Year	Renewal Forecast	Previous Renewal Budget
2022	\$113,848	\$313,800
2023	\$22,739	\$209,400
2024	\$0	\$208,900
2025	\$187,168	\$208,900
2026	\$33,543	\$208,900
2027	\$140,516	\$208,900
2028	\$106,520	\$208,900
2029	\$25,221	\$208,900
2030	\$442,220	\$208,900
2031	\$0	\$208,900

Table D4 - Renewal Forecast Summary Bridges & Major Culverts

Year	Renewal Forecast	Smoothed Renewal Forecast	Previous Renewal Budget
2022	\$1,662,465	\$174,368	\$0
2023	\$0	\$231,472	\$160,800
2024	\$0	\$168,000	\$0
2025	\$0	\$119,600	\$34,400
2026	\$0	\$397,706	\$92,200
2027	\$0	\$218,552	\$92,200
2028	\$0	\$244,764	\$92,200
2029	\$0	\$68,403	\$92,200
2030	\$0	\$39,600	\$92,200
2031	\$0	\$0	\$92,200

Appendix E Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	\$1,320,500	\$9,216	\$3,184,268	\$3,044,230		\$7,558,215
2023	\$1,799,800	\$9,428	\$3,256,937	\$4,551,930		\$9,618,095
2024	\$1,673,400	\$9,654	\$3,335,104	\$4,258,330		\$9,276,488
2025	\$1,755,600	\$9,896	\$3,418,480	\$3,652,270		\$8,836,246
2026	\$1,612,500	\$10,143	\$3,503,943	\$3,724,930		\$8,851,516
2027	\$1,604,100	\$10,397	\$3,591,542	\$3,722,570		\$8,928,608
2028	\$1,686,700	\$10,656	\$3,681,331	\$3,674,830		\$9,053,517
2029	\$1,373,000	\$10,923	\$3,773,364	\$3,722,570		\$8,879,857
2030	\$1,373,000	\$11,196	\$3,867,699	\$3,674,830		\$8,926,725
2031	\$2,740,900	\$11,476	\$3,964,390	\$3,674,830		\$10,391,596

Stormwater Asset Management Plan



Pipers Crest stormwater catchment, Strathalbyn

Document Control	Asset Management Plan
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Document ID :

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	17/11/2020	First Draft	Man Assets	Nil	Nil

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2022 to 2031 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Stormwater network comprises:

- Pipes
- Pits
- Treatment & Pumping

The above infrastructure assets have significant total renewal value estimated at \$64,245,020

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

1.4 Future Demand

The main demands for new services are created by:

- Population growth
- Climate change
- Legislative Change
- Changes in Technology

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the stormwater network is estimated as \$10,836,096 or \$1,083,610 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is \$10,913,551 or \$1,091,355 on average per year as per the Long-Term Financial plan or Planned Budget. This is 100.71% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The informed decision making process depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Stormwater leaves a shortfall of \$7,745 average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the previously Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

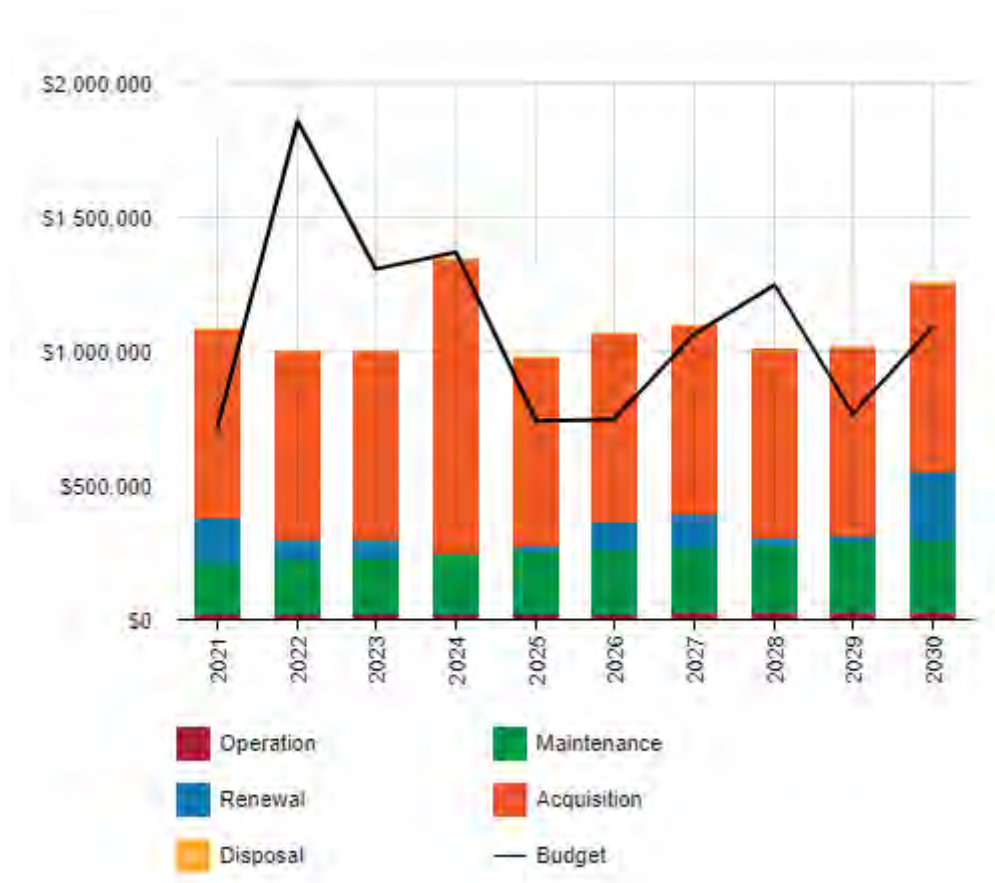


Figure Values are in current dollars.

We plan to provide Stormwater services for the following:

- Operation, maintenance, renewal and upgrade of pits, pipes and treatment & pumping assets to meet service levels set by in annual budgets.
- Address a number of stormwater system deficiencies across the district within the 10 year planning period.

1.6.2 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Confidence in asset data and condition compared
- Ability to deliver projects on time and within allocated budget
- Reactive projects

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

- Ongoing data and condition verification to better inform forward works planning and scheduling.
- Detailed project scopes and cost estimates for all programs
- Tight controls on budget, scope creep and variations during program delivery

1.7 Asset Management Practices

Our systems to manage assets include:

- Synergy (migrating to Tech 1 in July 2021)
- MyData (migrating to Tech 1 in July 2021)

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs, this is done using the acquisition year and the useful life;
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Asset Information System (improve data and condition capture)
- Risk Management (review, refine, expand and link with Council's risk management plan)
- Predictive Modelling (unit rates, project costing, forward works planning)
- Levels of Service definition (develop, finalise and adopt agreed levels of service across all asset classes)

2.0 Introduction

2.1 Background

This Asset Management Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

The Asset Management Plan is to be read with the Long Term Financial Plan. This should include the Asset Accounting Policy along with the Alexandrina 2040 Strategic Plan

The infrastructure assets covered by this Asset Management Plan include stormwater pits, pipes and treatment & pumping. For a detailed summary of the assets covered in this Asset Management Plan refer to Table in Section 5.

These assets are used to provide stormwater management services.

The infrastructure assets included in this plan have a total replacement value of \$64245020.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Alexandrina Council Elected Body	<ul style="list-style-type: none"> ■ Represent needs of the community, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service is sustainable.
CEO	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan.
General Manager Environment	Ensure services are sustainable and that Environment Division delivers in accordance with the adopted plan, on time and within budget.
General Manager Resources	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan. Facilitates the funding of the plan.

2.2 Goals and Objectives of Asset Ownership

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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 ¹

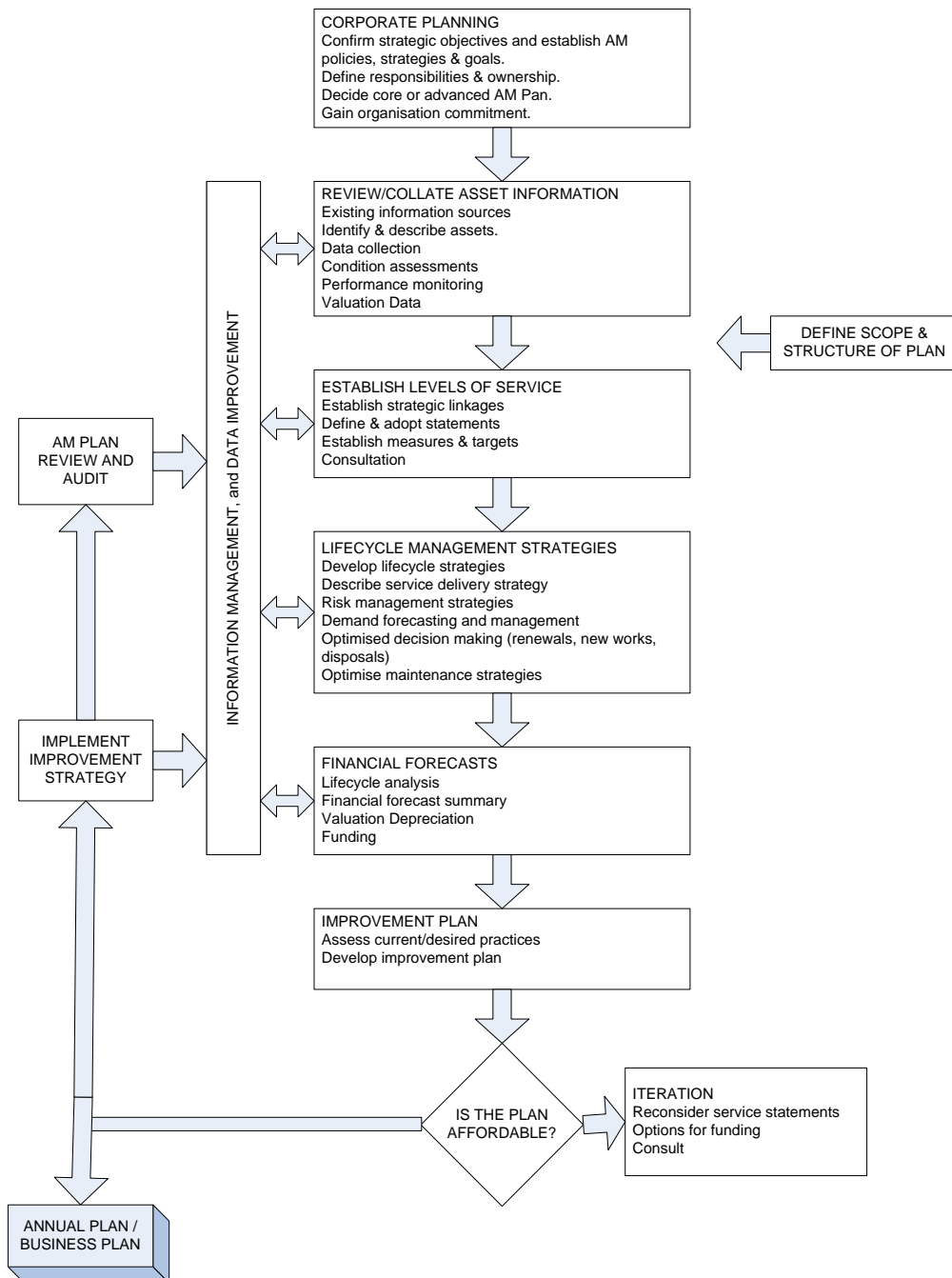
¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

■ ISO 55000²

A road map for preparing an Asset Management Plan is shown below.

Road Map for preparing an Asset Management Plan

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



² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by the Alexandrina Council's Elected Members. Future revisions of the Asset Management Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Alexandrina Council's Elected Members and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Alexandrina Council's vision, mission, goals and objectives.

Our mission is:

Be Involved

Living an inspiring Vision - Inspired employees go the extra mile

Communicating our strategies and goals - A clear strategy points employees in the right direction

Developing our people - High performing people drive organisational results

Recognising our people - saying thanks makes a big difference

Caring for our people - Demonstrating that we care

Listening and adapting to our Customers' needs - Creating long term customer relationships

Continually improving our systems - appropriate systems support performance

Strategic goals have been set by the Council. At the time of writing the plan, Council is considering its new Strategic planning document (Alexandrina 2040). This section will be updated prior to final endorsement by the Council.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Stormwater service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
Civil Liability Act	Liability of road authorities. Section 42, May 2004 inclusion into the Act to provide a replacement for the non-feasance defence consequence to the May 2001 High Court judgement
Coastal Protection Act	The responsibilities and powers of Council in protecting the quality of the coastal environment.
Disability Discrimination Act	The responsibilities and powers of Council in providing equitable access for persons with a disability.
Environmental Health Act	The responsibilities and powers of Council in maintaining public health.
Environmental Protection Act	The responsibilities of Council in protecting the environment.
Highways Act	Sets out the legislative framework for roads and road authorities in South Australia.

Local Government Act	The role, purpose, responsibilities and powers of Council including the preparation of a long-term financial plan supported by the IAMP for sustainable service delivery.
Native Vegetation Act	The responsibilities and powers of Council in providing protection for native vegetation.
Landscape South Australia Act (and plans)	The role, purpose, responsibilities and powers of local government in controlling the use of natural resources.
Occupational Health, Safety and Welfare Act	The responsibilities of Council in providing safe work practices and worksites.
River Murray Act	The responsibilities and powers of Council in protecting the quality of the river flows.
Road Traffic Act 1961	The responsibilities of Council in traffic matters.
Other relevant State and Federal Acts and Regulations	As appropriate

3.4 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service ... what is the condition or quality of the service?

Function Is it suitable for its intended purpose ... Is it the right service?

Capacity/Use Is the service over or under used ... do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Data validation	To be developed	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Function	Hierarchy of Assets	Has supporting documentation (policies, procedures etc.)	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Capacity	Program delivery	Programs / Project completed on time and budget	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)

3.5 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc).
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs).
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement).

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	New assets to provide improvement services to community	Projects driven by community feedback and verified data sources	LTFP informs acquisition, but limited knowledge on why	The Acquisitions that we would like to do as per the Lifecycle Forecast include verified data and community input.
Operation	To operate existing assets as intended	Assets kept at an acceptable operating service level	Managing within approved budgets	Continue to manage within approved budgets
Maintenance	Maintain assets in accordance with appropriate levels of service	Assets being maintained before failing. Appropriate Intervention levels	Managing within approved budgets	Continue to manage within approved budgets
Renewal	Renew existing Assets in accordance with AM practices and appropriate intervention levels	Programs completed in fullness on time and within budget	Programs being delivered with some savings	Continue to review scopes, unit rates, programs to ensure appropriate expenditure being spent correctly in accordance with appropriate intervention levels

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

³ IPWEA, 2015, IIMM, p 2 | 28.

4.0 FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

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

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 can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this Asset Management Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Maintenance and Upgrade	Medium	High	Potential lack of budget to manage maintain both existing and new assets	Ensure appropriate budgets are adopted that consider additional O&M costs for new assets
Safety	Medium	High	How will the change impact the service	How do you plan to manage the demand?
Asset Program Review	Low	Medium	Asset Management in new system will deliver greater outcomes	Ensure, procedures, policies, data and condition tasks are completed, documented to improve asset management within the Council

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Stormwater Asset Management Plan to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process, climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

At the time of writing this report, Council was in the early stages of reviewing climate change and the impacts on infrastructure. It is expected that the outcomes of this work will heavily influence the Asset Management Practices into the future.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Buildings resilience will have benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this Asset Management Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Stormwater Pipes	134.7km	\$48,817,150
Stormwater Pits	4015	\$13,872,021
Stormwater Treatment & pumping	209	\$1,556,106

All figure values are shown in current day dollars.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. At the time of writing, there were no known deficiencies in service performance that would be attributed to the adoption of this plan.

5.1.3 Asset condition

Condition is currently monitored using Assetic MyData and cyclic condition audits to inform our works planning and management.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

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. Examples of typical maintenance activities include pit and pipe cleaning and repairs.

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

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.

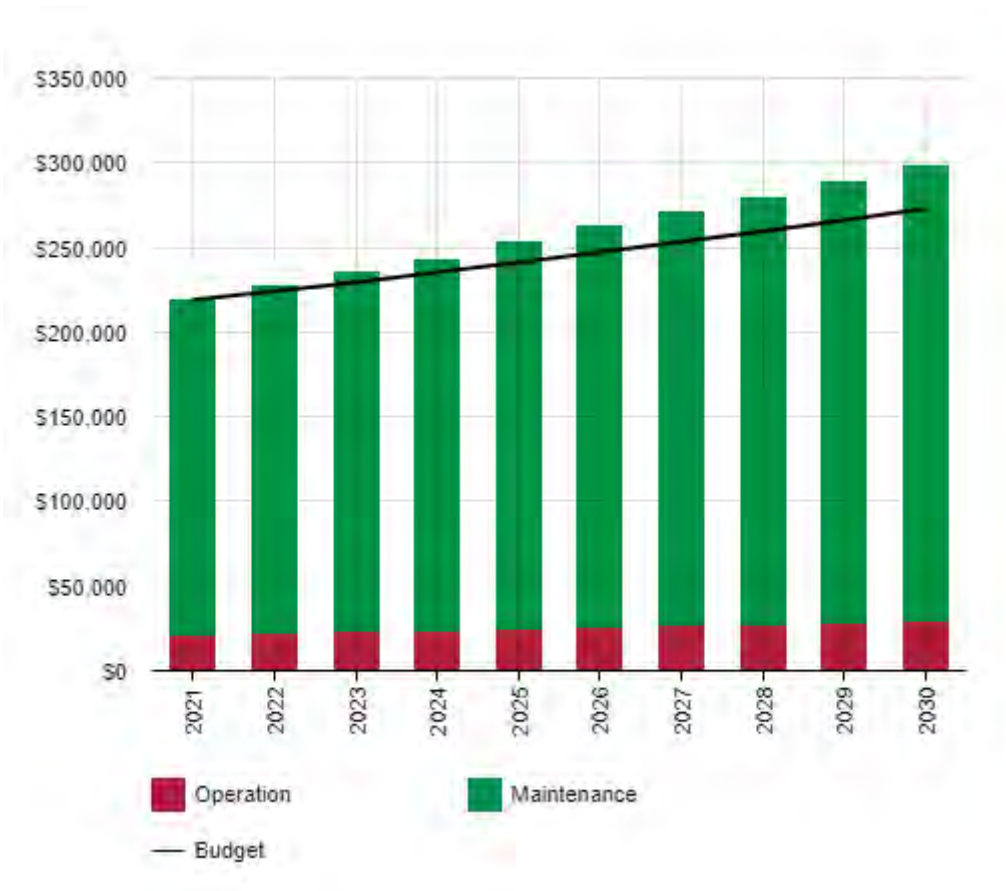
At the time of writing this plan, Council had commenced migration to the Technology1 system. As part of the migration, a complete Asset Hierarchy review will take place.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of, the forecast operation and maintenance costs are expected to decrease. Figure 5.2

shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Stormwater pipes	Between 80 and 100 years
Stormwater pits	Between 50 and 80 years
Stormwater treatment and pump*	Between 20 and 80 years

*Further detail on components needed

The estimates for renewals in this Asset Management Plan were based on the asset register or an alternate Method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).⁴

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁵

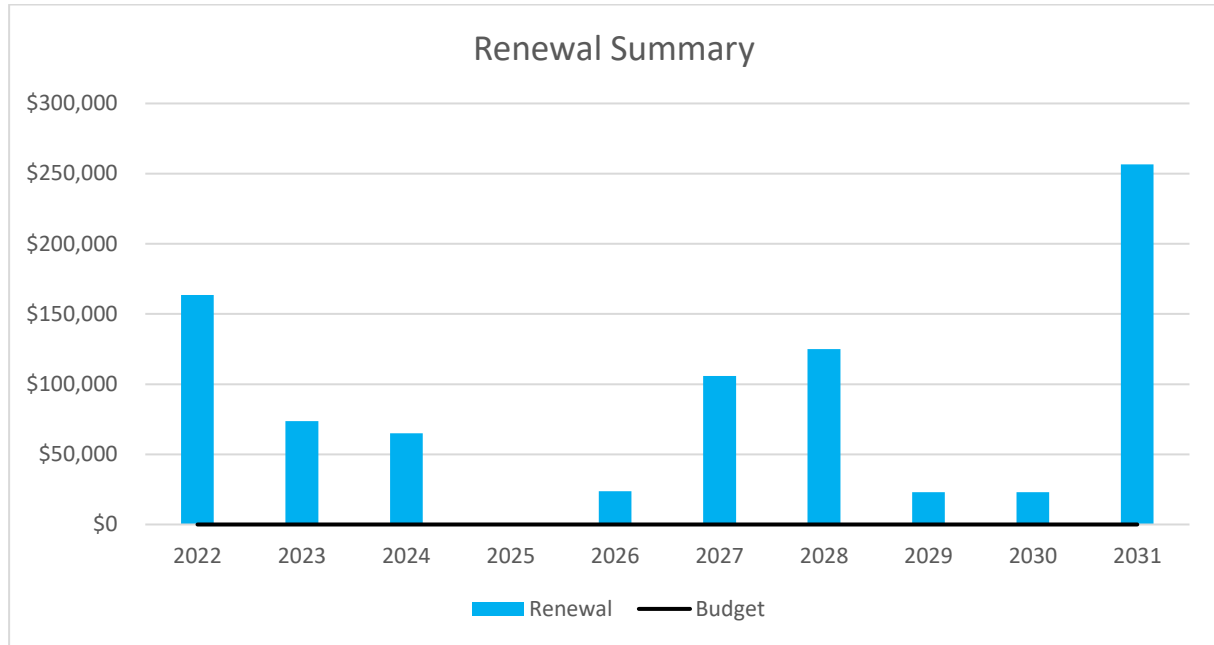
5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4. A detailed summary of the forecast renewal costs is shown in Appendix D.

⁴ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁵ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Figure 5.4: Forecast Renewal Costs



All figure values are shown in current day dollars.

5.5 Acquisition Plan

Acquisition reflects new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Stormwater Asset Management Plan.

5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes.

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarised in Figure 5.5.1 and shown relative to the previously planned budget. The forecast acquisition capital works program is shown in Appendix A.

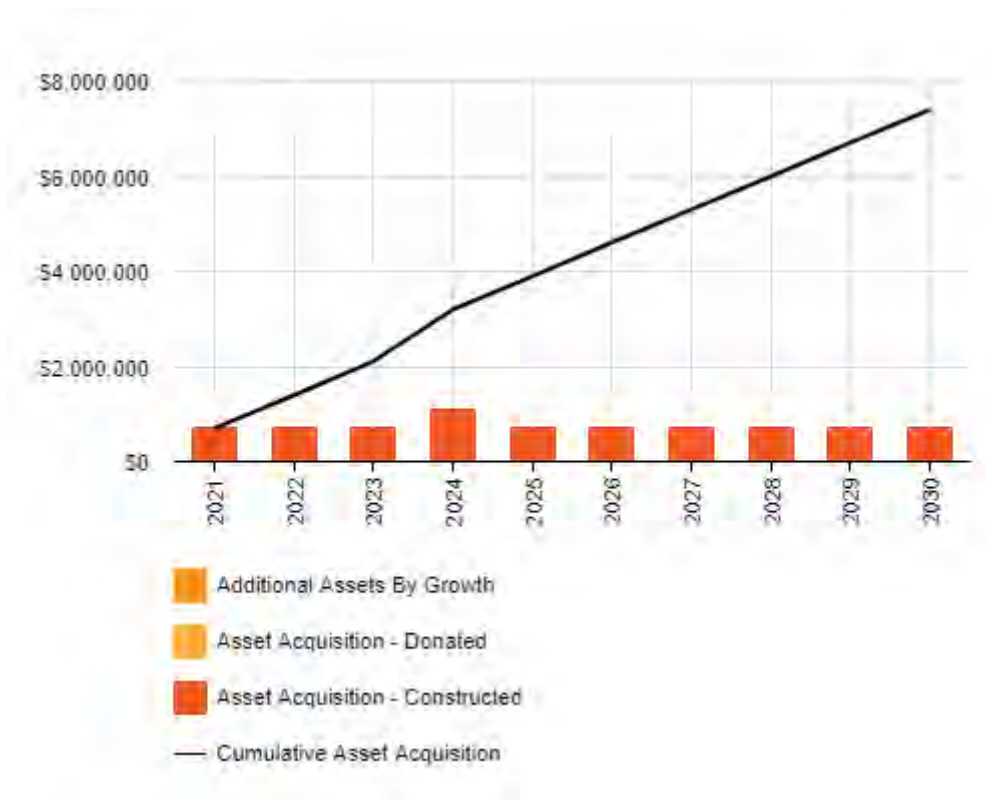
Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

When the Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Council. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current dollars.

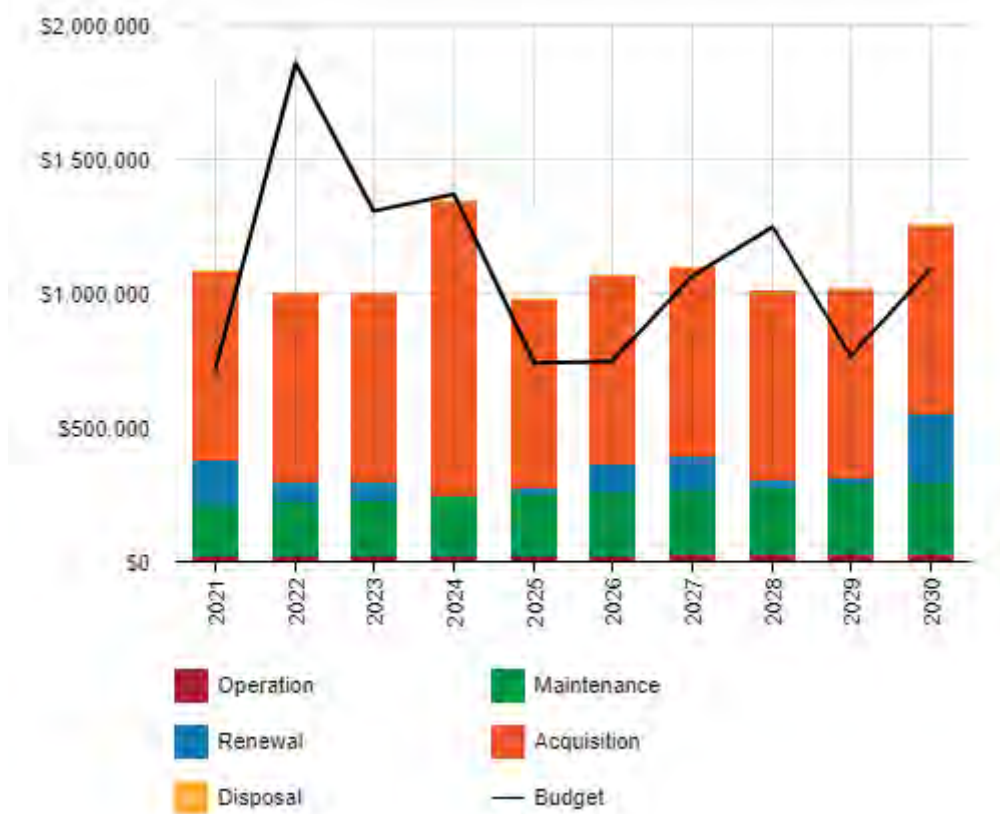
Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the previously proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The previously proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’⁶.

An assessment of risks⁷ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact
Stormwater pipes	Undersized pipes Blockages	Property damage Council infrastructure damage Environmental and Public Health impacts
Stormwater pits	Undersized pits Blockages	Flooding of roadway Property damage due to flooding Environmental and Public Health impacts
Stormwater Treatment & pumps	Stormwater basins overfill Mechanical failure	Property damage Council infrastructure damage Environmental and Public Health impacts

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

⁶ ISO 31000:2009, p 2

⁷ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

The process is based on the fundamentals of International Standard ISO 31000:2018.

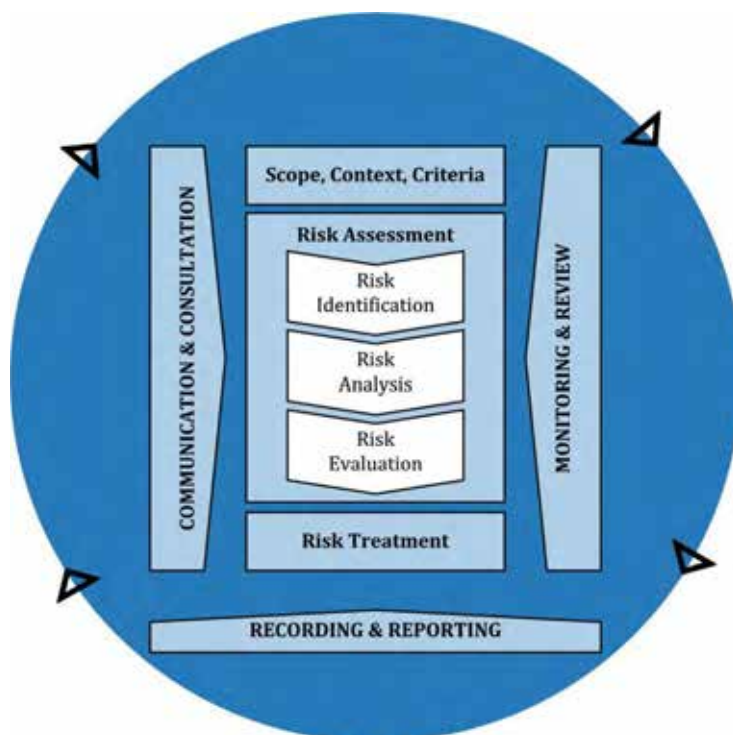


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Council's Risk Management Framework

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0032/192668/Risk-Management-Framework.pdf

Council's Risk Management Policy

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0023/193046/Risk-Management-Policy.pdf

6.3 Infrastructure Resilience Approach

We do not currently measure our resilience in service delivery. This will be included in future iterations of the Asset Management Plan.

7.0 FINANCIAL SUMMARY

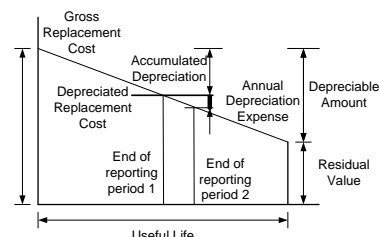
This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below.

Current (Gross) Replacement Cost	\$64,245,020
Depreciable Amount	\$64,245,020
Depreciated Replacement Cost ⁸	\$44,716,708
Depreciation	\$836,567



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the Asset Management Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁹ 0.0%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 0.0% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

This Asset Management Plan identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$343,610 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$244,805 on average per year giving a 10 year funding shortfall or funding excess of \$-98,804 per year. The funding shortfall is the result of a greater understanding of the asset base, their condition, maintenance requirements and levels of service. This excludes acquired assets. This excludes acquired assets.

⁸ Also reported as Written Down Value, Carrying or Net Book Value.

⁹ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first year of the Asset Management Plan and ideally over the 10 year life of the Long-Term Financial Plan.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) for the 10 year long-term financial plan.

Forecast costs are shown in 2022 dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2021	\$700,000	\$21,504	\$197,570	\$163,472	0
2022	\$700,000	\$22,279	\$204,494	\$73,705	0
2023	\$700,000	\$23,087	\$211,725	\$65,076	0
2024	\$1,100,000	\$23,930	\$219,279	\$0	0
2025	\$700,000	\$24,947	\$228,323	\$23,787	0
2026	\$700,000	\$25,8194	\$236,139	\$105,846	0
2027	\$700,000	\$26,705	\$244,091	\$124,988	0
2028	\$700,000	\$27,607	\$252,182	\$22,912	0
2029	\$700,000	\$28,524	\$260,416	\$22,912	0
2030	\$700,000	\$29,457	\$268,796	\$256,527	0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and Long-Term financial plan.

The financial strategy of the Council determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to remain consistent as additional assets are added or removed from service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this Asset Management Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this Asset Management Plan are:

- That available data was accurate
- Financial data is accurate

7.5 Forecast Reliability and Confidence

The forecast costs, previously proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale¹⁰ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed 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 7.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	B	Further improvements during next planning cycle
Growth projections	B	Further improvements during next planning cycle
Acquisition forecast	B	Further improvements during next planning cycle
Operation forecast	B	Comfortable with data.
Maintenance forecast	B	Comfortable with data.
Renewal forecast		
- Asset values	B	Comfortable with data.
- Asset useful lives	B	Comfortable with data.
- Condition modelling	B-C	Looking to improve as part of Tech1 rollout
Disposal forecast	E	NA

The estimated confidence level for and reliability of data used in this AM Plan is considered to be a B – reliable.

¹⁰ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹¹

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The Council's current Corporate Information system is Synergy. Council will migrate to Technology1 from July 2021.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is Assetic MyData. Council will migrate to Technology1 from July 2021.

8.2 Improvement Plan

It is important that the Council recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Asset Management Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Specific community Levels of Service unknown.	Environment Division	Internal	Within 4 years
2	Impacts of the economic downturn on growth predictions.	Resources and Environment Divisions	Internal	Within 4 years
3	Simplistic and restrictive financial analysis available from on-line templates.	Resources and Environment Divisions	Internal and external support	Within 2 years
4	Detailed assessment of risks awaiting production of the Risk Management Plan.	Environment Division	Internal	Within 4 years
5	Create an asset review program that considers data collection & validation; unit rate and valuations review; useful lives; predictive modelling update; forward works program; and AMP review. Aiming to undertake a review of two asset classes per year.	Environment Division	Internal	2 Asset Classes per year

8.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of each Council election.

¹¹ ISO 55000 Refers to this the Asset Management System

8.4 Performance Measures

The effectiveness of this Asset Management Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the Long-Term Financial Plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate 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, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
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- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Alexandrina 2040 Strategic Plan
- Alexandrina Annual Business Plan and Budget

10.0 APPENDICES

Appendix A Acquisition Forecast

Table A1 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2022	\$700,000	\$0	\$0
2023	\$700,000	\$0	\$0
2024	\$700,000	\$0	\$0
2025	\$1,100,000	\$0	\$0
2026	\$700,000	\$0	\$0
2027	\$700,000	\$0	\$0
2028	\$700,000	\$0	\$0
2029	\$700,000	\$0	\$0
2030	\$700,000	\$0	\$0
2031	\$700,000	\$0	\$0

Appendix B Operation Forecast

Operation Forecast Summary

Recommend using NAMS+ Outputs Summary for Operation

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	\$21,504	\$280	\$21,504
2023	\$22,279	\$280	\$22,279
2024	\$23,087	\$280	\$23,087
2025	\$23,930	\$440	\$23,930
2026	\$24,947	\$280	\$24,947
2027	\$25,819	\$280	\$25,819
2028	\$26,705	\$280	\$26,705
2029	\$27,607	\$280	\$27,607
2030	\$28,524	\$280	\$28,524
2031	\$29,457	\$280	\$29,457

Appendix C Maintenance Forecast

Maintenance Forecast Summary

Recommend using NAMS+ Outputs Summary for Maintenance

Table C1 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2022	\$197,570	\$2,380	\$197,570
2023	\$204,494	\$2,380	\$204,494
2024	\$211,725	\$2,380	\$211,725
2025	\$219,279	\$3,740	\$219,279
2026	\$228,323	\$2,380	\$228,323
2027	\$236,139	\$2,380	\$236,139
2028	\$244,091	\$2,380	\$244,091
2029	\$252,182	\$2,380	\$252,182
2030	\$260,416	\$2,380	\$260,416
2031	\$268,796	\$2,380	\$268,796

Appendix D Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2022	\$163,472	\$0
2023	\$73,705	\$0
2024	\$65,076	\$0
2025	\$0	\$0
2026	\$23,787	\$0
2027	\$105,846	\$0
2028	\$124,988	\$0
2029	\$22,912	\$0
2030	\$22,912	\$0
2031	\$256,527	\$0

Appendix F Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	\$500,000	\$21,504	\$197,570	\$0	\$0	\$719,074
2023	\$1,633,700	\$21,999	\$202,114	\$0	\$0	\$1,857,813
2024	\$1,077,500	\$22,527	\$206,965	\$0	\$0	\$1,306,992
2025	\$1,134,700	\$23,090	\$212,139	\$0	\$0	\$1,369,929
2026	\$500,000	\$23,667	\$217,443	\$0	\$0	\$741,110
2027	\$500,000	\$24,259	\$222,879	\$0	\$0	\$747,137
2028	\$811,500	\$24,865	\$228,451	\$0	\$0	\$1,064,816
2029	\$988,300	\$25,487	\$234,162	\$0	\$0	\$1,247,949
2030	\$500,000	\$26,124	\$240,016	\$0	\$0	\$766,140
2031	\$819,800	\$26,777	\$246,016	\$0	\$0	\$1,092,593

Buildings Asset Management Plan



Fleurieu Aquatic Centre, Hayborough

Document Control	Asset Management Plan
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Document ID :

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	17/11/20	First Draft – No peer review	Man Assets	Nil	Nil

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2022 to 2031 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Buildings network comprises:

- Sub-Structure
- Super-Structure
- Fitout & Fittings
- Roof
- Site Infrastructure
- Site Services
- Site Services (Fire)
- Services (Electrical)
- Services (Hydraulics)
- Services (Mechanical)
- Services (Security)
- Services (Transport)
- Services (other)

The above infrastructure assets have significant total renewal value estimated at 95,646,248

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

1.4 Future Demand

The main demands for new services are created by:

- Population growth
- Climate change
- Legislative Change
- Changes in Technology

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Buildings is estimated as \$58,915,360 or \$5,891,536 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is \$59,434,664 or \$5,943,467 on average per year as per the Long-Term Financial plan or Planned Budget. This is 100.88% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The informed decision making process depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for Buildings leaves a shortfall of \$51,931 average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

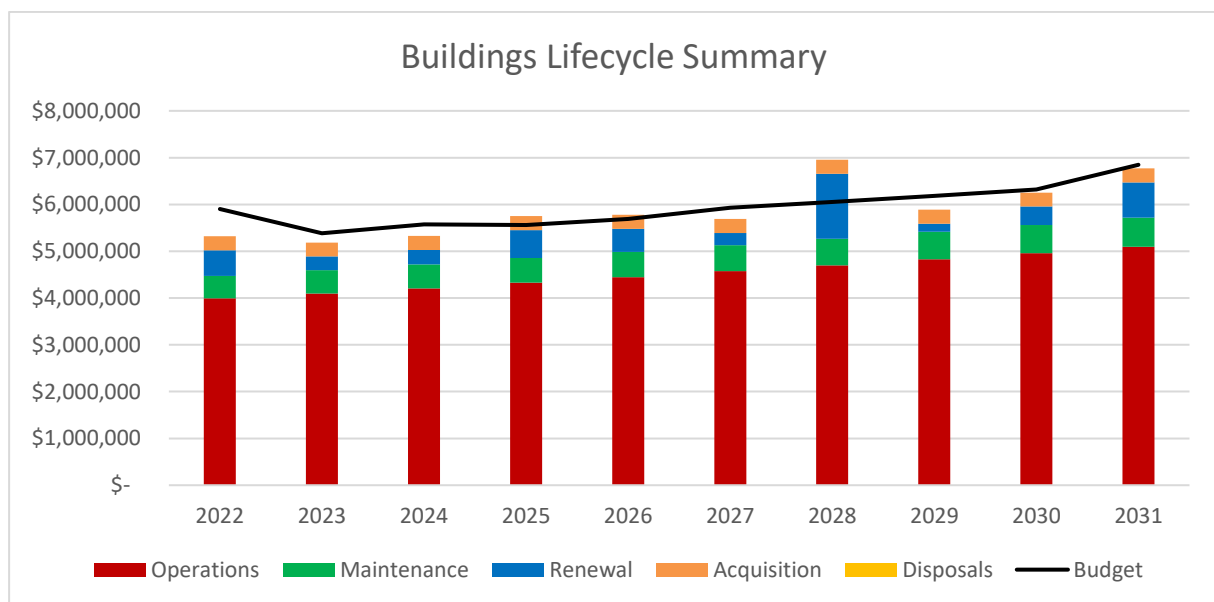


Figure Values are in current dollars.

We plan to provide Building services for the following:

- Operation, maintenance, renewal and upgrade of Buildings to meet service levels set by in annual budgets.

1.6.2 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Confidence in asset data and condition compared
- Ability to deliver projects on time and within allocated budget

- Reactive projects

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

- Ongoing data and condition verification to better inform forward works planning and scheduling.
- Detailed project scopes and cost estimates for all programs
- Tight controls on budget, scope creep and variations during program delivery
-

1.7 Asset Management Practices

Our systems to manage assets include:

- Synergy (migrating to Tech 1 in July 2021)
- MyData (migrating to Tech 1 in July 2021)

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs, this is done using the acquisition year and the useful life;
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Asset Information System (improve data and condition capture)
- Risk Management (review, refine, expand and link with Council's risk management plan)
- Predictive Modelling (unit rates, project costing, forward works planning)
- Levels of Service definition (develop, finalise and adopt agreed levels of service across all asset classes)

2.0 Introduction

2.1 Background

This Asset Management Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

The Asset Management Plan is to be read with the Long Term Financial Plan. This should include the Asset Accounting Policy along with the Alexandrina 2040 Strategic Plan

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this Asset Management Plan include Buildings, Fixtures & Fittings and associated services. For a detailed summary of the assets covered in this Asset Management Plan refer to Table in Section 5.

The infrastructure assets included in this plan have a total replacement value of \$95,646,248.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Alexandrina Council Elected Body	<ul style="list-style-type: none"> ■ Represent needs of the community, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service is sustainable.
CEO	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan.
General Manager Environment	Ensure services are sustainable and that Environment Division delivers in accordance with the adopted plan, on time and within budget.
General Manager Resources	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan. Facilitates the funding of the plan.

2.2 Goals and Objectives of Asset Ownership

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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

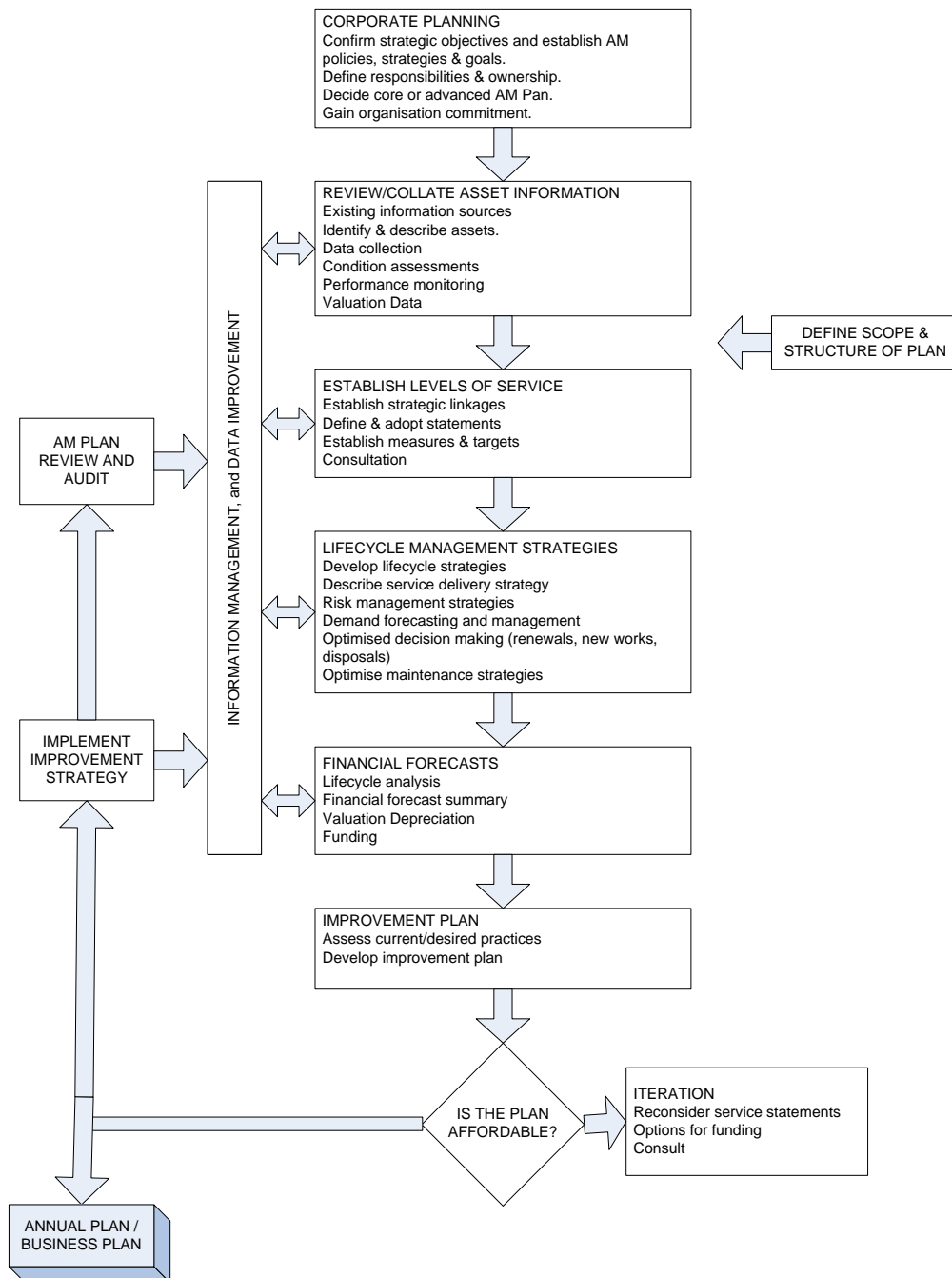
Key elements of the planning framework are:

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- A road map for preparing an Asset Management Plan is shown below.

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

² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by the Alexandrina Council's Elected Members. Future revisions of the Asset Management Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Alexandrina Council's Elected Members and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Alexandrina Council's vision, mission, goals and objectives.

Our mission is:

Be Involved

Living an inspiring Vision - Inspired employees go the extra mile

Communicating our strategies and goals - A clear strategy points employees in the right direction

Developing our people - High performing people drive organisational results

Recognising our people - saying thanks makes a big difference

Caring for our people - Demonstrating that we care

Listening and adapting to our Customers' needs - Creating long term customer relationships

Continually improving our systems - appropriate systems support performance

Strategic goals have been set by the Council. At the time of writing the plan, Council is considering its new Strategic planning document (Alexandrina 2040). This section will be updated prior to final endorsement by the Council.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Building service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
Civil Liability Act	Liability of road authorities. Section 42, May 2004 inclusion into the Act to provide a replacement for the non-feasance defence consequence to the May 2001 High Court judgement
Coastal Protection Act	The responsibilities and powers of Council in protecting the quality of the coastal environment.
Disability Discrimination Act	The responsibilities and powers of Council in providing equitable access for persons with a disability.
Environmental Health Act	The responsibilities and powers of Council in maintaining public health.
Environmental Protection Act	The responsibilities of Council in protecting the environment.
Highways Act	Sets out the legislative framework for roads and road authorities in South Australia.

Local Government Act	The role, purpose, responsibilities and powers of Council including the preparation of a long-term financial plan supported by the IAMP for sustainable service delivery.
Native Vegetation Act	The responsibilities and powers of Council in providing protection for native vegetation.
Landscape South Australia Act (and plans)	The role, purpose, responsibilities and powers of local government in controlling the use of natural resources.
Occupational Health, Safety and Welfare Act	The responsibilities of Council in providing safe work practices and worksites.
River Murray Act	The responsibilities and powers of Council in protecting the quality of the river flows.
Road Traffic Act 1961	The responsibilities of Council in traffic matters.
Other relevant State and Federal Acts and Regulations	As appropriate

3.4 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service ... what is the condition or quality of the service?

Function Is it suitable for its intended purpose ... Is it the right service?

Capacity/Use Is the service over or under used ... do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Data validation	To be developed	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Function	Hierarchy of Assets	Has supporting documentation (policies, procedures etc.)	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Capacity	Program delivery	Programs / Project completed on time and budget	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)

3.5 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc).
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs).
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement).

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	New assets to provide improvement services to community	Projects driven by community feedback and verified data sources	LTFP informs acquisition, but limited knowledge on why	The Acquisitions that we would like to do as per the Lifecycle Forecast include verified data and community input.
Operation	To operate existing assets as intended	Assets kept at an acceptable operating service level	Managing within approved budgets	Continue to manage within approved budgets
Maintenance	Maintain assets in accordance with appropriate levels of service	Assets being maintained before failing. Appropriate Intervention levels	Managing within approved budgets	Continue to manage within approved budgets
Renewal	Renew existing Assets in accordance with AM practices and appropriate intervention levels	Programs completed in fullness on time and within budget	Programs being delivered with some savings	Continue to review scopes, unit rates, programs to ensure appropriate expenditure being spent correctly in accordance with appropriate intervention levels

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

³ IPWEA, 2015, IIMM, p 2|28.

4.0 FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

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

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 can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this Asset Management Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Maintenance and Upgrade	Medium	High	Potential lack of budget to manage maintain both existing and new assets	Ensure appropriate budgets are adopted that consider additional O&M costs for new assets
Safety	Medium	High	How will the change impact the service	How do you plan to manage the demand?
Asset Program Review	Low	Medium	Asset Management in new system will deliver greater outcomes	Ensure, procedures, policies, data and condition tasks are completed, documented to improve asset management within the Council

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Buildings Asset Management Plan to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process, climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

At the time of writing this report, Council was in the early stages of reviewing climate change and the impacts on infrastructure. It is expected that the outcomes of this work will heavily influence the Asset Management Practices into the future.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Buildings resilience will have benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this Asset Management Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5.1.1.

The age profile of the assets included in this AM Plan are shown in Figure 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Buildings	187	\$95,646,248
TOTAL		

All figure values are shown in current day dollars.

Add discussion about the age asset profile. Outline how past peaks of investment that may require peaks in renewals in the future. Comment on the overall age versus useful lives of the assets.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. At the time of writing, there were no known deficiencies in service performance that would be attributed to the adoption of this plan.

5.1.3 Asset condition

Condition is currently monitored using Assetic MyData and cyclic condition audits to inform our works planning and management.

All figure values are shown in current day dollars.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

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. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

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

Asset hierarchy

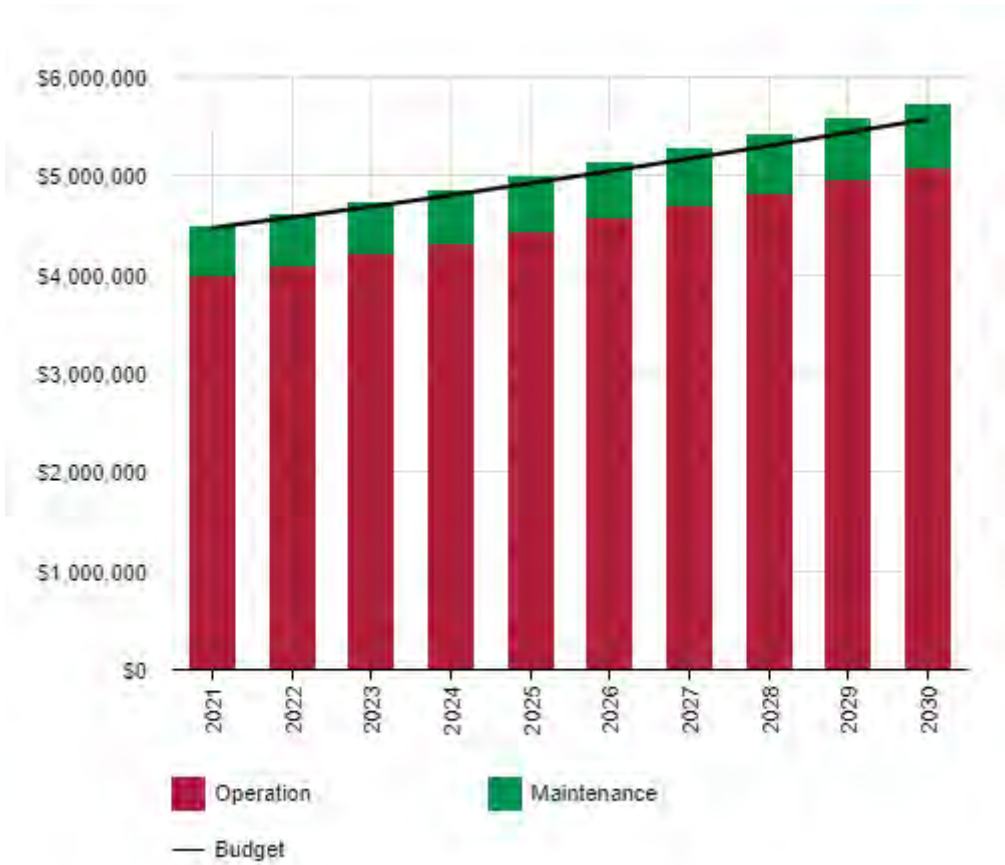
An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for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

At the time of writing this plan, Council had commenced migration to the Technology1 system. As part of the migration, a complete Asset Hierarchy review will take place.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of, the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Super-Structure	150 years
Sub-Structure	150 years
Fitout & Fittings	15 to 25 years
Roof	40 years
Site Infrastructure	30 years
Site Services	30 years
Services (mechanical, hydraulics, security, transport and other)	30 years

The estimates for renewals in this Asset Management Plan were based on the asset register or an alternate Method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).⁴

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁵

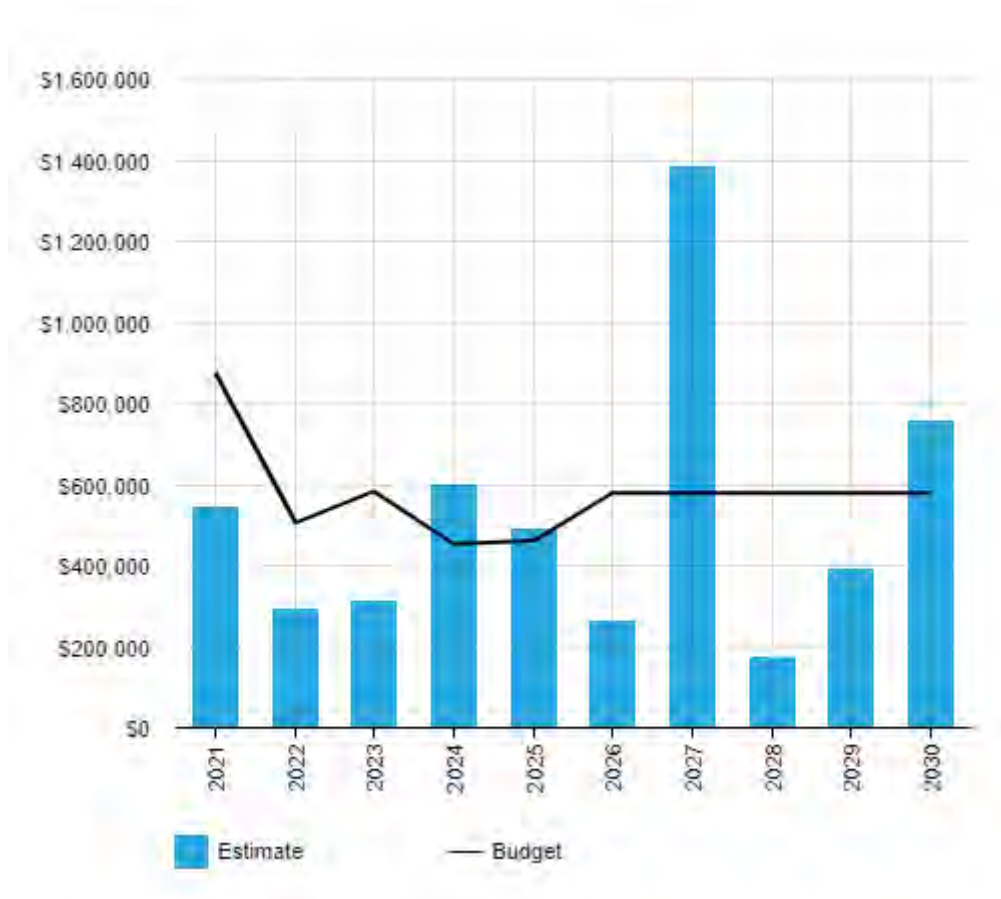
5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4: Forecast Renewal Costs

⁴ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁵ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.



All figure values are shown in current day dollars.

5.5 Acquisition Plan

Acquisition reflects are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Buildings Asset Management Plan.

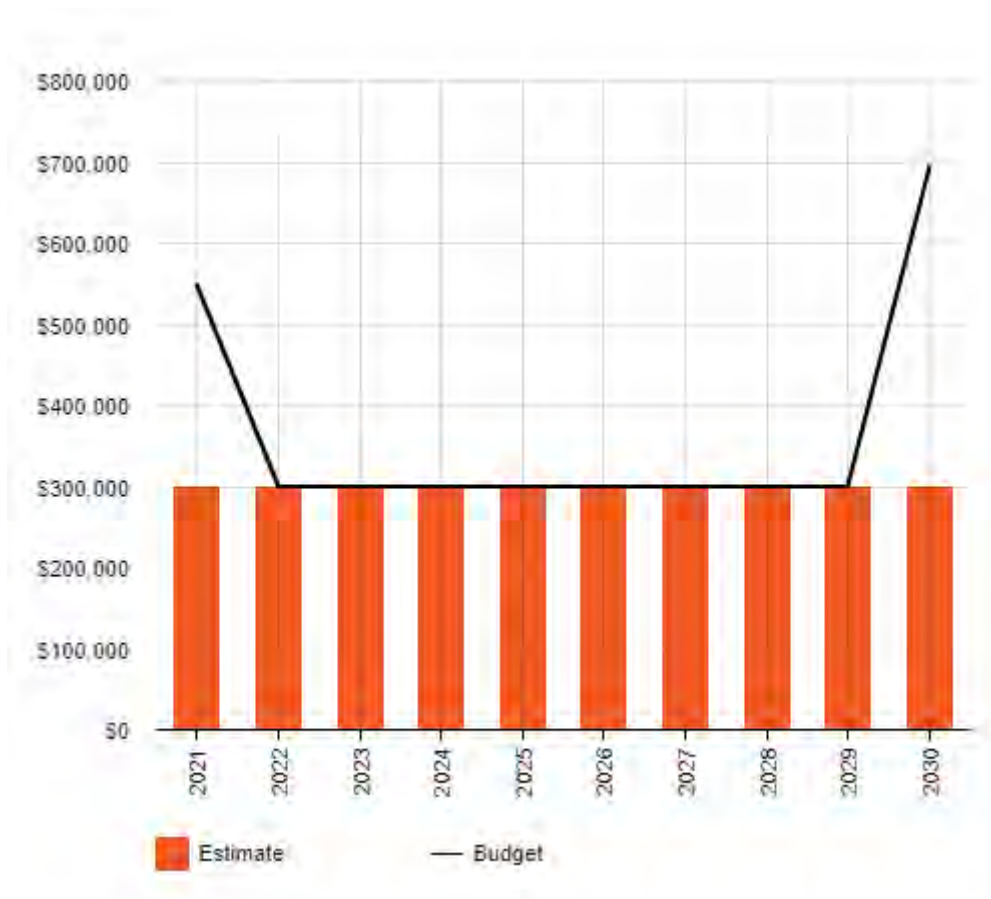
5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarised in Figure 5.5.1 and shown relative to the previously planned budget. The forecast acquisition capital works program is shown in Appendix A.

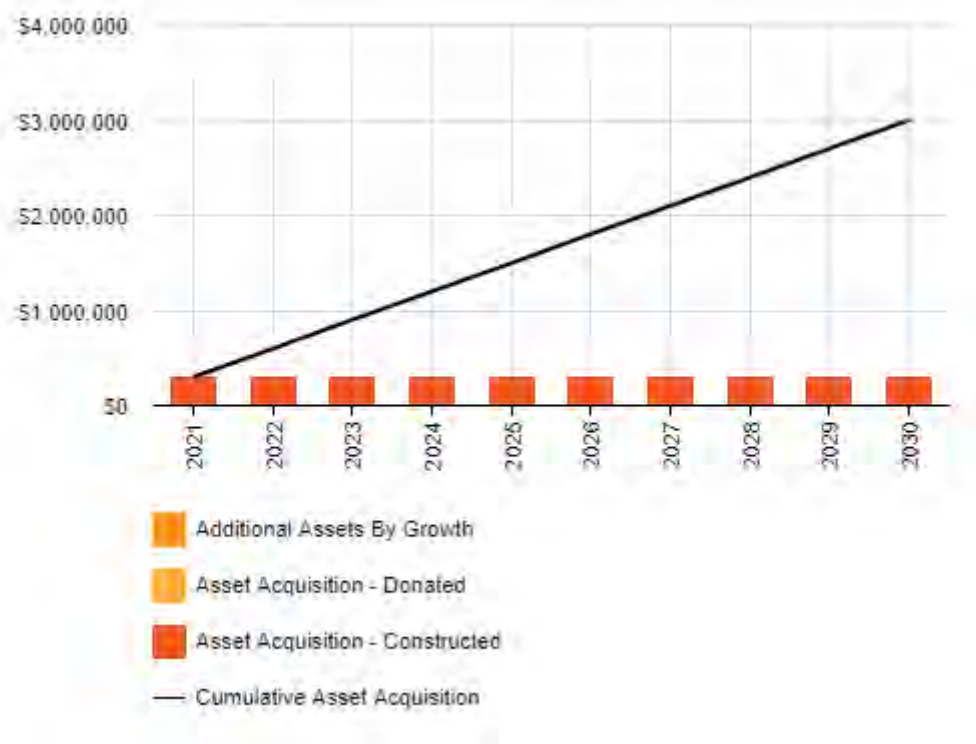
Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

When the Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Council. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



All figure values are shown in current dollars.

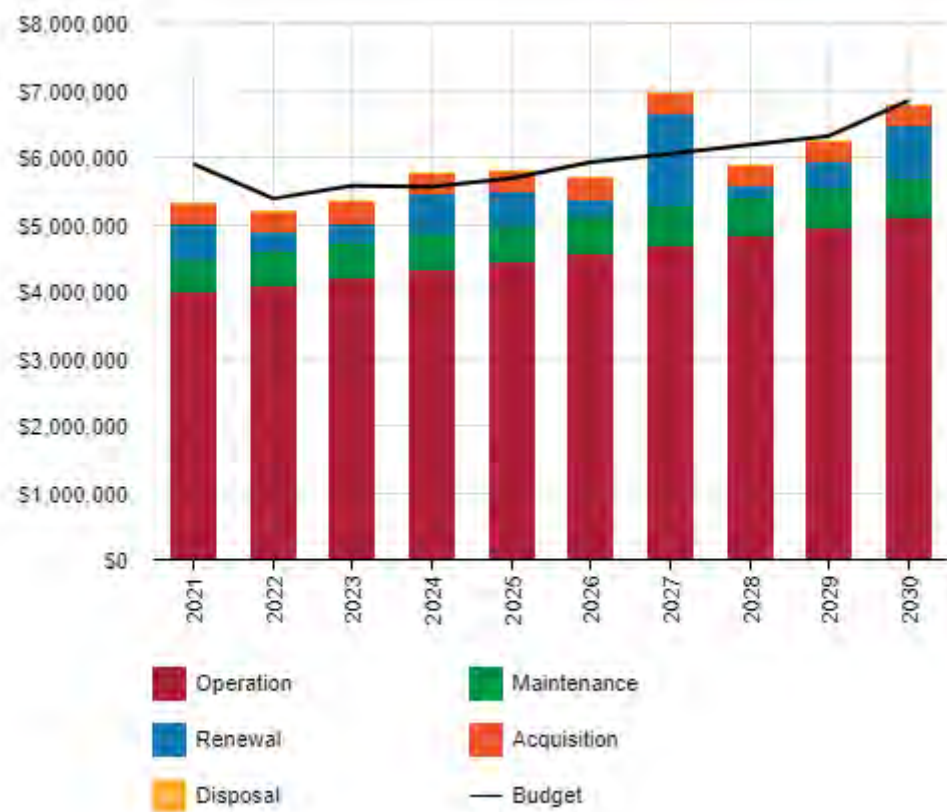
Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the previously proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The previously proposed budget line indicates the estimate of available funding. The gap between the forecast work and the previously proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’⁶.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets need to be identified and along with their typical failure mode, and the impact on service delivery. This work will be completed for the next iteration of the plan.

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

⁶ ISO 31000:2009, p 2

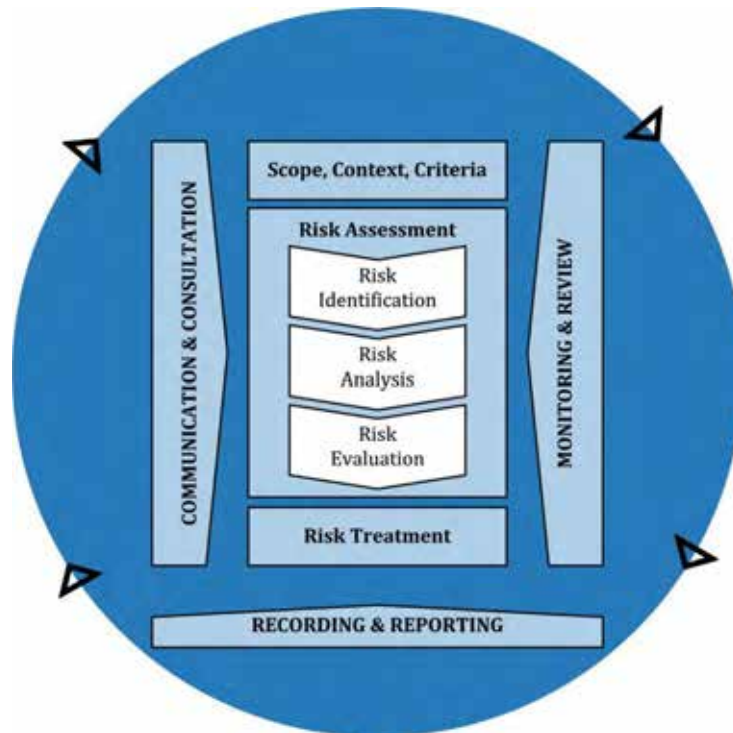


Fig 6.2 Risk Management Process – Abridged

Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Council's Risk Management Framework

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0032/192668/Risk-Management-Framework.pdf

Council's Risk Management Policy

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0023/193046/Risk-Management-Policy.pdf

6.3 Infrastructure Resilience Approach

We do not currently measure our resilience in service delivery. This will be included in future iterations of the Asset Management Plan.

7.0 FINANCIAL SUMMARY

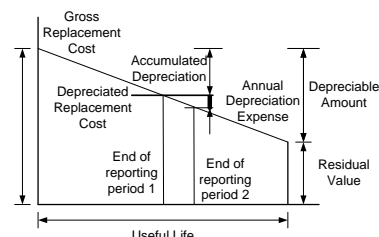
This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below.

Current (Gross) Replacement Cost	\$95,646,248
Depreciable Amount	\$95,646,248
Depreciated Replacement Cost ⁷	\$47,573,040
Depreciation	\$1,696,184



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the Asset Management Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁸ 111.16%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 111.16% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

This Asset Management Plan identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$5,591,536 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$5,578,917 on average per year giving a 10 year funding shortfall or funding excess of \$-12,619 per year. The funding shortfall is the result of a greater understanding of the asset base, their condition, maintenance requirements and levels of service. This excludes acquired assets. This excludes acquired assets.

⁷ Also reported as Written Down Value, Carrying or Net Book Value.

⁸ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first year of the Asset Management Plan and ideally over the 10 year life of the Long-Term Financial Plan.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) for the 10 year long-term financial plan.

Forecast costs are shown in 2022 dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2021	\$300,000	\$3,990,912	\$484,868	\$542,603	\$0
2022	\$300,000	\$4,096,683	\$497,730	\$292,436	\$0
2023	\$300,000	\$4,208,648	\$511,344	\$309,359	\$0
2024	\$300,000	\$4,327,146	\$525,752	\$595,805	\$0
2025	\$300,000	\$4,448,256	\$540,478	\$491,300	\$0
2026	\$300,000	\$4,572,044	\$555,529	\$260,075	\$0
2027	\$300,000	\$4,698,578	\$570,913	\$1,384,841	\$0
2028	\$300,000	\$4,827,925	\$586,640	\$171,876	\$0
2029	\$300,000	\$4,960,157	\$602,716	\$390,986	\$0
2030	\$300,000	\$5,095,345	\$619,152	\$755,264	\$0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and Long-Term financial plan.

The financial strategy of the Council determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to remain consistent as additional assets are added or removed from service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this Asset Management Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this Asset Management Plan are:

- That available data was accurate
- Financial data is accurate

7.5 Forecast Reliability and Confidence

The forecast costs, previously proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale⁹ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed 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 7.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	B	Further improvements during next planning cycle
Growth projections	B	Further improvements during next planning cycle
Acquisition forecast	B	Further improvements during next planning cycle
Operation forecast	B	Comfortable with data.
Maintenance forecast	B	Comfortable with data.
Renewal forecast		
- Asset values	B	Comfortable with data.
- Asset useful lives	B	Comfortable with data.
- Condition modelling	B-C	Looking to improve as part of Tech1 rollout
Disposal forecast	E	NA

The estimated confidence level for and reliability of data used in this AM Plan is considered to be a B – reliable.

⁹ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹⁰

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The Councils current Corporate Information system is Synergy. Council will migrate to Technology1 from July 2021.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is Assetic MyData. Council will migrate to Technology1 from July 2021.

8.2 Improvement Plan

It is important that the Council recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Asset Management Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Specific community Levels of Service unknown.	Environment Division	Internal	Within 4 years
2	Impacts of the economic downturn on growth predictions.	Resources and Environment Divisions	Internal	Within 4 years
3	Simplistic and restrictive financial analysis available from on-line templates.	Resources and Environment Divisions	Internal and external support	Within 2 years
4	Detailed assessment of risks awaiting production of the Risk Management Plan.	Environment Division	Internal	Within 4 years
5	Create an asset review program that considers data collection & validation; unit rate and valuations review; useful lives; predictive modelling update; forward works program; and AMP review. Aiming to undertake a review of two asset classes per year.	Environment Division	Internal	2 Asset Classes per year

8.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and previously proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of each Council election.

¹⁰ ISO 55000 Refers to this the Asset Management System

8.4 Performance Measures

The effectiveness of this Asset Management Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the Long-Term Financial Plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate 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, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Alexandrina 2040 Strategic Plan
- Alexandrina Annual Business Plan and Budget

10.0 APPENDICES

Appendix A Acquisition Forecast

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2022	\$300,000	\$0	\$0
2023	\$300,000	\$0	\$0
2024	\$300,000	\$0	\$0
2025	\$300,000	\$0	\$0
2026	\$300,000	\$0	\$0
2027	\$300,000	\$0	\$0
2028	\$300,000	\$0	\$0
2029	\$300,000	\$0	\$0
2030	\$300,000	\$0	\$0
2031	\$300,000	\$0	\$0

Appendix B Operation Forecast

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	\$3,990,912	\$13,980	\$3,990,912
2023	\$4,096,683	\$13,980	\$4,096,683
2024	\$4,208,648	\$13,980	\$4,208,648
2025	\$4,327,146	\$13,980	\$4,327,146
2026	\$4,448,256	\$13,980	\$4,448,256
2027	\$4,572,044	\$13,980	\$4,572,044
2028	\$4,698,578	\$13,980	\$4,698,578
2029	\$4,827,925	\$13,980	\$4,827,925
2030	\$4,960,157	\$13,980	\$4,960,157
2031	\$5,095,345	\$13,980	\$5,095,345

Appendix C Maintenance Forecast

Table C2- Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2022	\$484,868	\$1,710	\$484,868
2023	\$497,730	\$1,710	\$497,730
2024	\$511,344	\$1,710	\$511,344
2025	\$525,752	\$1,710	\$525,752
2026	\$540,478	\$1,710	\$540,478
2027	\$555,529	\$1,710	\$555,529
2028	\$570,913	\$1,710	\$570,913
2029	\$586,640	\$1,710	\$586,640
2030	\$602,716	\$1,710	\$602,716
2031	\$619,152	\$1,710	\$619,152

Appendix D Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2022	\$542,603	\$875,600
2023	\$292,436	\$505,700
2024	\$309,359	\$583,200
2025	\$595,805	\$452,900
2026	\$491,300	\$461,500
2027	\$260,075	\$579,100
2028	\$1,384,841	\$579,100
2029	\$171,876	\$579,100
2030	\$390,986	\$579,100
2031	\$755,264	\$579,100

Appendix E Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	\$550,000	\$3,990,912	\$484,868	\$875,600	\$0	\$5,901,380
2023	\$300,000	\$4,082,703	\$496,020	\$505,700	\$0	\$5,384,423
2024	\$300,000	\$4,180,688	\$507,924	\$583,200	\$0	\$5,571,812
2025	\$300,000	\$4,285,206	\$520,622	\$452,900	\$0	\$5,558,728
2026	\$300,000	\$4,392,336	\$533,638	\$461,500	\$0	\$5,687,474
2027	\$300,000	\$4,502,144	\$546,979	\$579,100	\$0	\$5,928,223
2028	\$300,000	\$4,614,698	\$560,653	\$579,100	\$0	\$6,054,451
2029	\$300,000	\$4,730,065	\$574,670	\$579,100	\$0	\$6,183,835
2030	\$300,000	\$4,848,317	\$589,036	\$579,100	\$0	\$6,316,453
2031	\$695,500	\$4,969,525	\$603,762	\$579,100	\$0	\$6,847,887

Recreation & Open Space Asset Management Plan



Document Control	Asset Management Plan
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Document ID :

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	17/11/2020	First Draft	Man Assets	Nil	Nil

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure is financially sustainable.

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 2022 to 2031 year planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

The Recreation & Open Space network comprises:

- Open Space furniture
- Park Equipment
- Irrigation
- Structures

The above infrastructure assets have significant total renewal value estimated at \$28,784,504.

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

1.4 Future Demand

The main demands for new services are created by:

- Population growth
- Climate change
- Legislative Change
- Changes in Technology

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Recreation & Open Space is estimated as \$53,168,900 or \$5,316,890 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is \$50,915,604 or \$5,091,561 on average per year as per the Long-Term Financial plan or Planned Budget. This is 95.76% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The informed decision making process depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for [Enter Asset Group] leaves a shortfall of \$-225330 average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

Forecast Lifecycle Costs and Planned Budgets

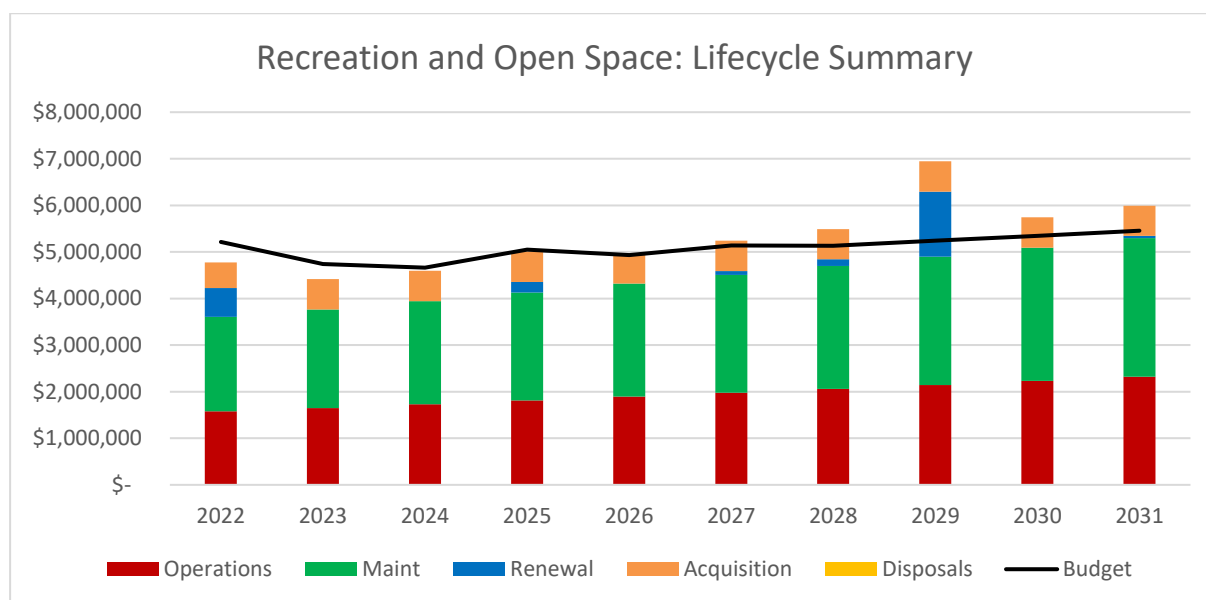


Figure Values are in current dollars.

We plan to provide Recreation & Open Space services for the following:

- Operation, maintenance, renewal and upgrade of open space furniture, park equipment, irrigation and structures to meet service levels set by in annual budgets.

1.6.2 Managing the Risks

Our present budget levels are sufficient to continue to manage risks in the medium term.

The main risk consequences are:

- Confidence in asset data and condition compared
- Ability to deliver projects on time and within allocated budget
- Reactive projects

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

- Ongoing data and condition verification to better inform forward works planning and scheduling.
- Detailed project scopes and cost estimates for all programs
- Tight controls on budget, scope creep and variations during program delivery

1.7 Asset Management Practices

Our systems to manage assets include:

- Synergy (migrating to Tech 1 in July 2021)
- MyData (migrating to Tech 1 in July 2021)

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs, this is done using the acquisition year and the useful life;
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

- Asset Information System (improve data and condition capture)
- Risk Management (review, refine, expand and link with Council's risk management plan)
- Predictive Modelling (unit rates, project costing, forward works planning)
- Levels of Service definition (develop, finalise and adopt agreed levels of service across all asset classes)

2.0 Introduction

2.1 Background

This Asset Management Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

The Asset Management Plan is to be read with the Long Term Financial Plan. This should include the Asset Accounting Policy along with the Alexandrina 2040 Strategic Plan

Comment on the current status of Asset Management in the Organisation.

The infrastructure assets covered by this Asset Management Plan include Recreation & Open Space. For a detailed summary of the assets covered in this Asset Management Plan refer to Table in Section 5.

The infrastructure assets included in this plan have a total replacement value of \$28,784,504.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Alexandrina Council Elected Body	<ul style="list-style-type: none"> ■ Represent needs of the community, ■ Allocate resources to meet planning objectives in providing services while managing risks, ■ Ensure service is sustainable.
CEO	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan.
General Manager Environment	Ensure services are sustainable and that Environment department delivers in accordance with the adopted plan on time and within budget.
General Manager Resources	Ensure services are sustainable and that Administration delivers in accordance with the adopted plan. Facilitates the funding of the plan.

2.2 Goals and Objectives of Asset Ownership

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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are;

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 ¹

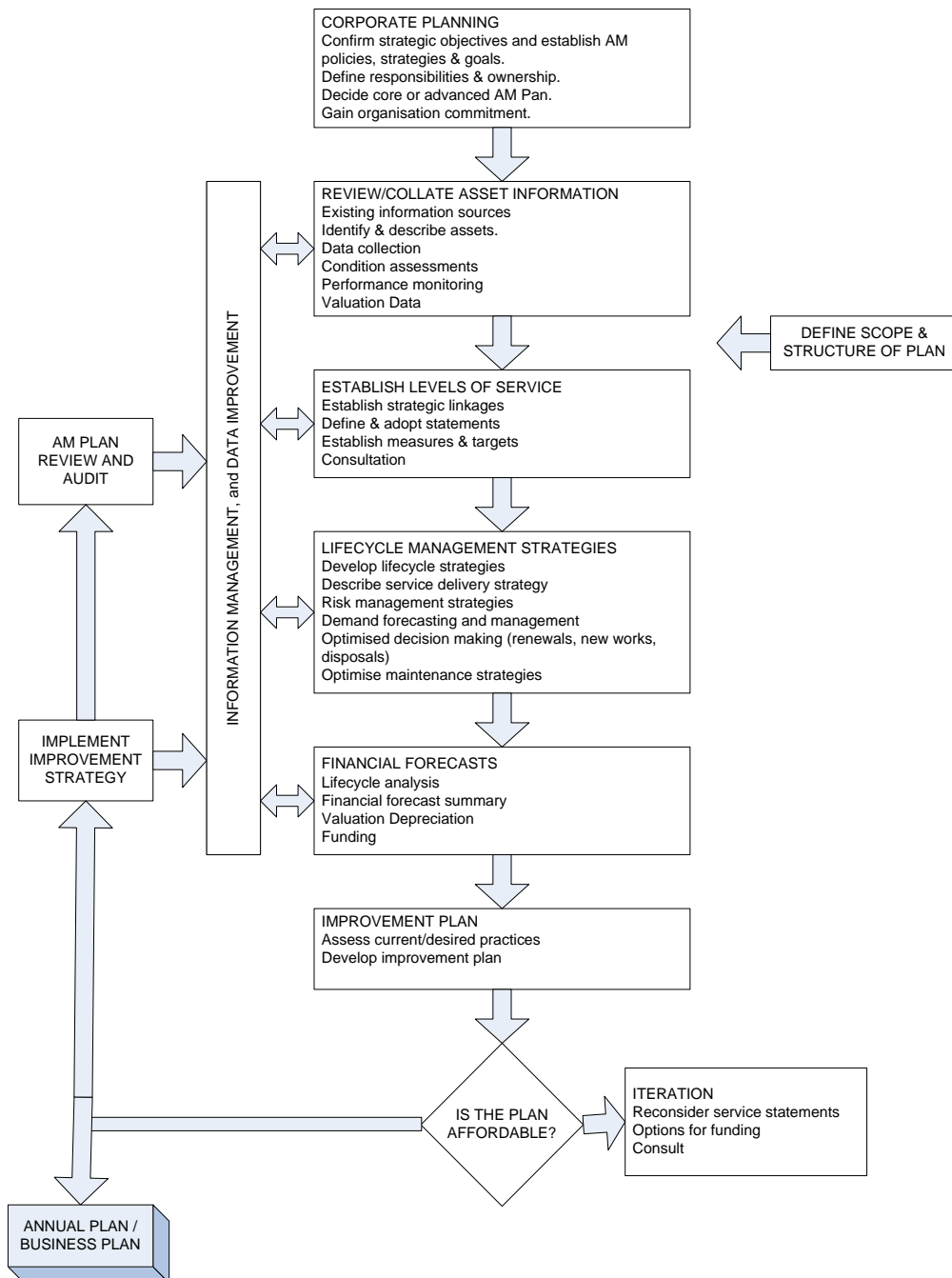
¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

■ ISO 55000²

A road map for preparing an Asset Management Plan is shown below.

Road Map for preparing an Asset Management Plan

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



² ISO 55000 Overview, principles and terminology

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by the Alexandrina Council's Elected Members. Future revisions of the Asset Management Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Alexandrina Council's Elected Members and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the Alexandrina Council's vision, mission, goals and objectives.

Our mission is:

Be Involved

Living an inspiring Vision - Inspired employees go the extra mile

Communicating our strategies and goals - A clear strategy points employees in the right direction

Developing our people - High performing people drive organisational results

Recognising our people - saying thanks makes a big difference

Caring for our people - Demonstrating that we care

Listening and adapting to our Customers' needs - Creating long term customer relationships

Continually improving our systems - appropriate systems support performance

Strategic goals have been set by the Council. At the time of writing the plan, Council is considering its new Strategic planning document (Alexandrina 2040). This section will be updated prior to final endorsement by the Council.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the Recreation & Open Space service are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
Civil Liability Act	Liability of road authorities. Section 42, May 2004 inclusion into the Act to provide a replacement for the non-feasance defence consequence to the May 2001 High Court judgement
Coastal Protection Act	The responsibilities and powers of Council in protecting the quality of the coastal environment.
Disability Discrimination Act	The responsibilities and powers of Council in providing equitable access for persons with a disability.
Environmental Health Act	The responsibilities and powers of Council in maintaining public health.
Environmental Protection Act	The responsibilities of Council in protecting the environment.
Highways Act	Sets out the legislative framework for roads and road authorities in South Australia.

Local Government Act	The role, purpose, responsibilities and powers of Council including the preparation of a long-term financial plan supported by the IAMP for sustainable service delivery.
Native Vegetation Act	The responsibilities and powers of Council in providing protection for native vegetation.
Landscape South Australia Act (and plans)	The role, purpose, responsibilities and powers of local government in controlling the use of natural resources.
Occupational Health, Safety and Welfare Act	The responsibilities of Council in providing safe work practices and worksites.
River Murray Act	The responsibilities and powers of Council in protecting the quality of the river flows.
Road Traffic Act 1961	The responsibilities of Council in traffic matters.
Other relevant State and Federal Acts and Regulations	As appropriate

3.4 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality How good is the service ... what is the condition or quality of the service?

Function Is it suitable for its intended purpose ... Is it the right service?

Capacity/Use Is the service over or under used ... do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Quality, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

These are measures of fact related to the service delivery outcome e.g. number of occasions when service is not available, condition %'s of Very Poor, Poor/Average/Good, Very Good and provide a balance in comparison to the customer perception that may be more subjective.

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Data validation	To be developed	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Function	Hierarchy of Assets	Has supporting documentation (policies, procedures etc.)	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)
Capacity	Program delivery	Programs / Project completed on time and budget	What is the current performance	Comment on Expected Trend
	Confidence levels		Medium (Professional judgement supported by data sampling)	High (Professional Judgement supported by extensive data)

3.5 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc).
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs).
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement).

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	New assets to provide improvement services to community	Projects driven by community feedback and verified data sources	LTFP informs acquisition, but limited knowledge on why	The Acquisitions that we would like to do as per the Lifecycle Forecast include verified data and community input.
Operation	To operate existing assets as intended	Assets kept at an acceptable operating service level	Managing within approved budgets	Continue to manage within approved budgets
Maintenance	Maintain assets in accordance with appropriate levels of service	Assets being maintained before failing. Appropriate Intervention levels	Managing within approved budgets	Continue to manage within approved budgets
Renewal	Renew existing Assets in accordance with AM practices and appropriate intervention levels	Programs completed in fullness on time and within budget	Programs being delivered with some savings	Continue to review scopes, unit rates, programs to ensure appropriate expenditure being spent correctly in accordance with appropriate intervention levels

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

³ IPWEA, 2015, IIMM, p 2|28.

4.0 FUTURE DEMAND

4.1 Demand Drivers

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

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

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

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 can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this Asset Management Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Maintenance and Upgrade	Medium	High	Potential lack of budget to manage maintain both existing and new assets	Ensure appropriate budgets are adopted that consider additional O&M costs for new assets
Safety	Medium	High	How will the change impact the service	How do you plan to manage the demand?
Asset Program Review	Low	Medium	Asset Management in new system will deliver greater outcomes	Ensure, procedures, policies, data and condition tasks are completed, documented to improve asset management within the Council

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Recreation & Open Space Asset Management Plan to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process, climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

At the time of writing this report, Council was in the early stages of reviewing climate change and the impacts on infrastructure. It is expected that the outcomes of this work will heavily influence the Asset Management Practices into the future.

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Buildings resilience will have benefits:

- Assets will withstand the impacts of climate change
- Services can be sustained
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

The impact of climate change on assets is a new and complex discussion and further opportunities will be developed in future revisions of this Asset Management Plan.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the Council plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5.1.1.

Table 5.1.1: Assets covered by this Plan

Asset Category	Dimension	Replacement Value
Open Space Furniture	932 individual assets	\$127,268
Park Equipment	91 individual assets	\$2,974,581
Structures	986 individual assets	\$25,650,935
Irrigation	26 individual assets	\$860,937

All figure values are shown in current day dollars.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. At the time of writing, there were no known deficiencies in service performance that would be attributed to the adoption of this plan.

5.1.3 Asset condition

Condition is currently monitored using Assetic MyData and cyclic condition audits to inform our works planning and management.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

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. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

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

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.

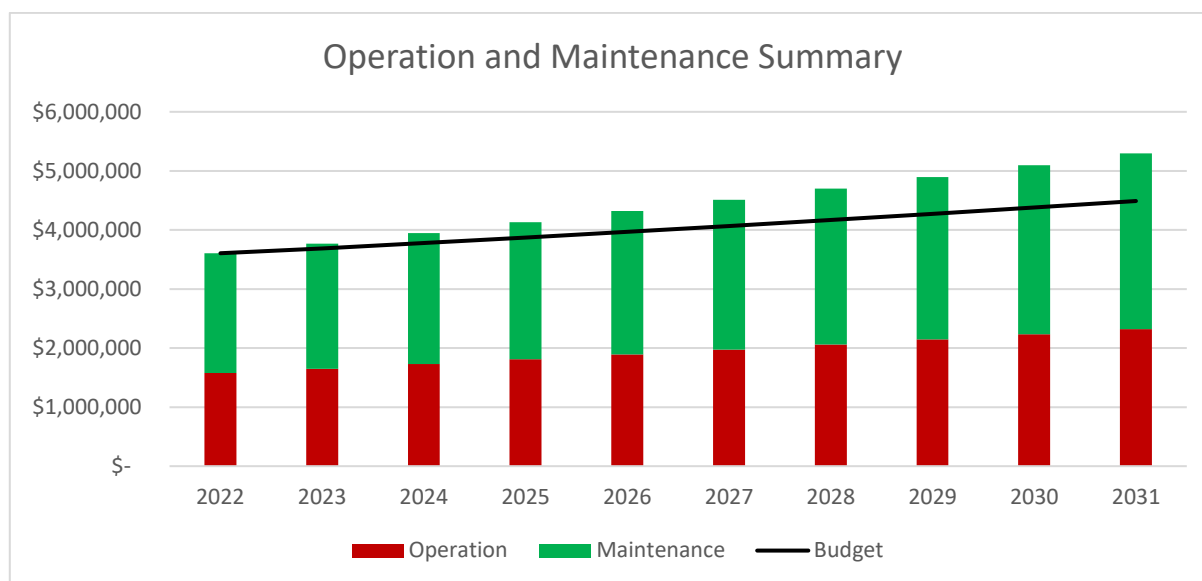
At the time of writing this plan, Council had commenced migration to the Technology1 system. As part of the migration, a complete Asset Hierarchy review will take place.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If

assets are disposed of, the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Open Space Furniture	Between 15 and 50 years.
Park Equipment	15 years
Structures	Between 20 and 50 years
Irrigation	50 years

The estimates for renewals in this Asset Management Plan were based on the asset register or an alternate Method.

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. replacing a bridge that has a 5 t load limit), or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a playground).⁴

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.⁵

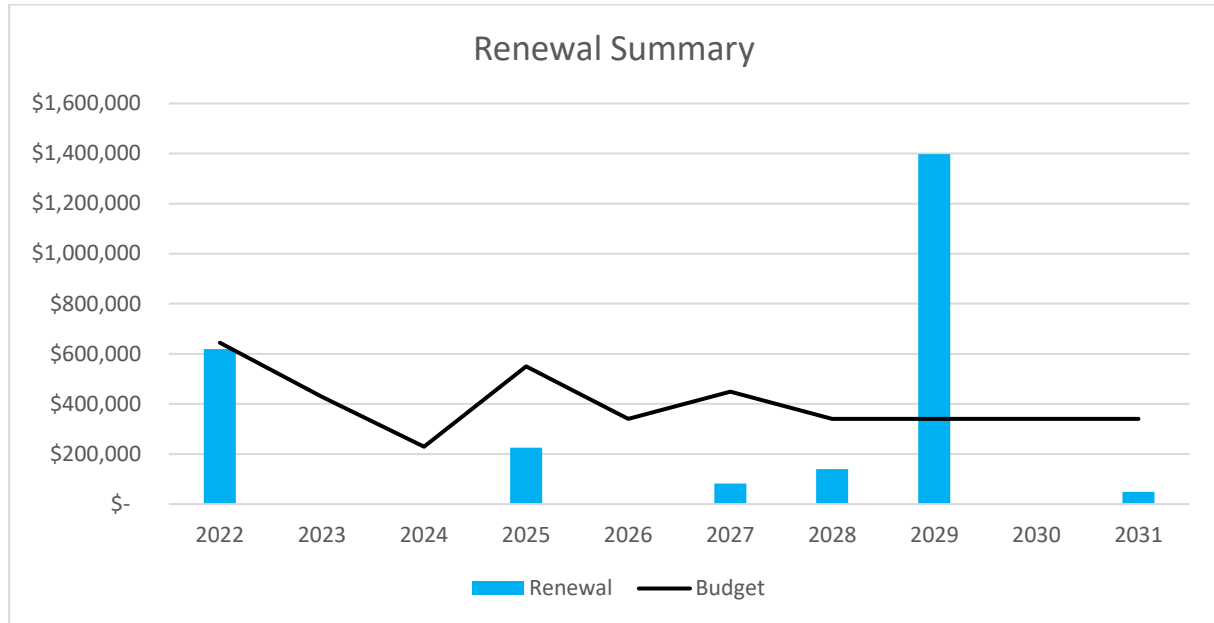
5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4. A detailed summary of the forecast renewal costs is shown in Appendix D.

⁴ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

⁵ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

Figure 5.4: Forecast Renewal Costs



All figure values are shown in current day dollars.

5.5 Acquisition Plan

Acquisition reflects is new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Recreation & Open Space Asset Management Plan.

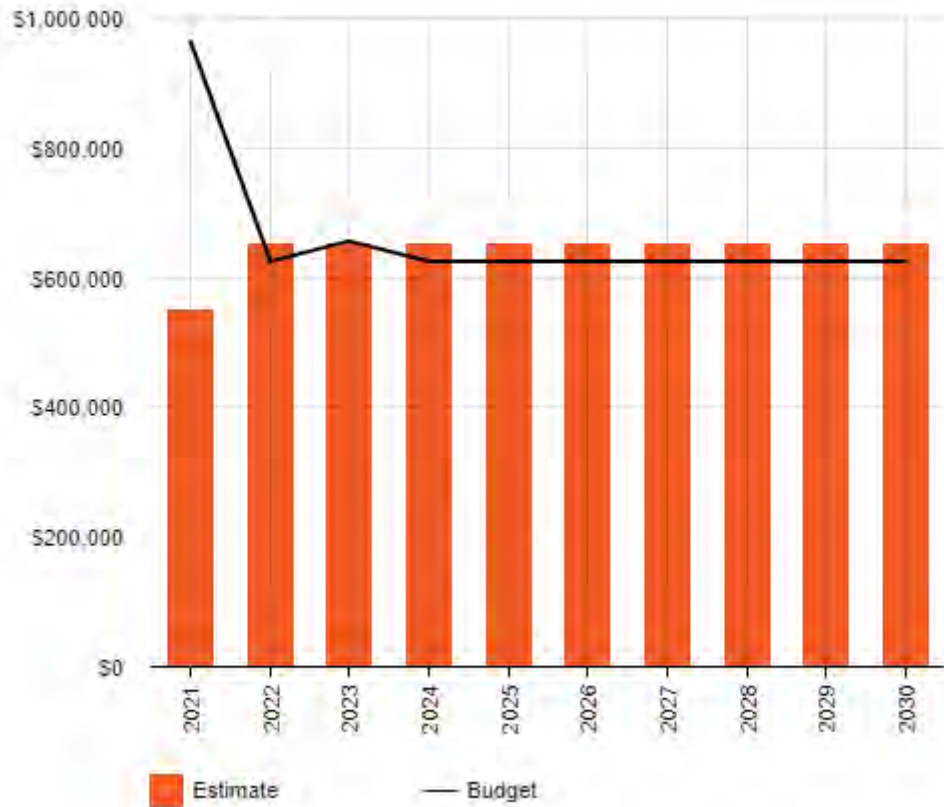
5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Entities needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.4.1.

Summary of future asset acquisition costs

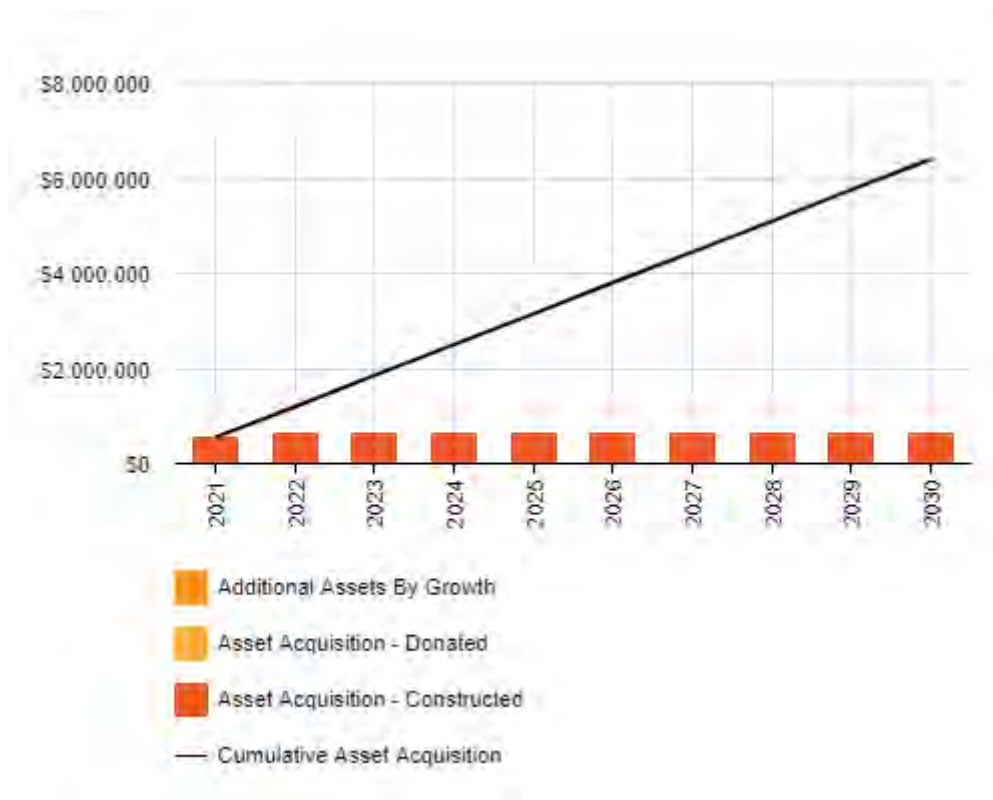
Forecast acquisition asset costs are summarised / summarised in Figure 5.5.1 and shown relative to the previously planned budget. The forecast acquisition capital works program is shown in Appendix A.

Figure 5.5.1: Acquisition (Constructed) Summary



All figure values are shown in current day dollars.

When the Council commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Council. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.



All figure values are shown in current dollars.

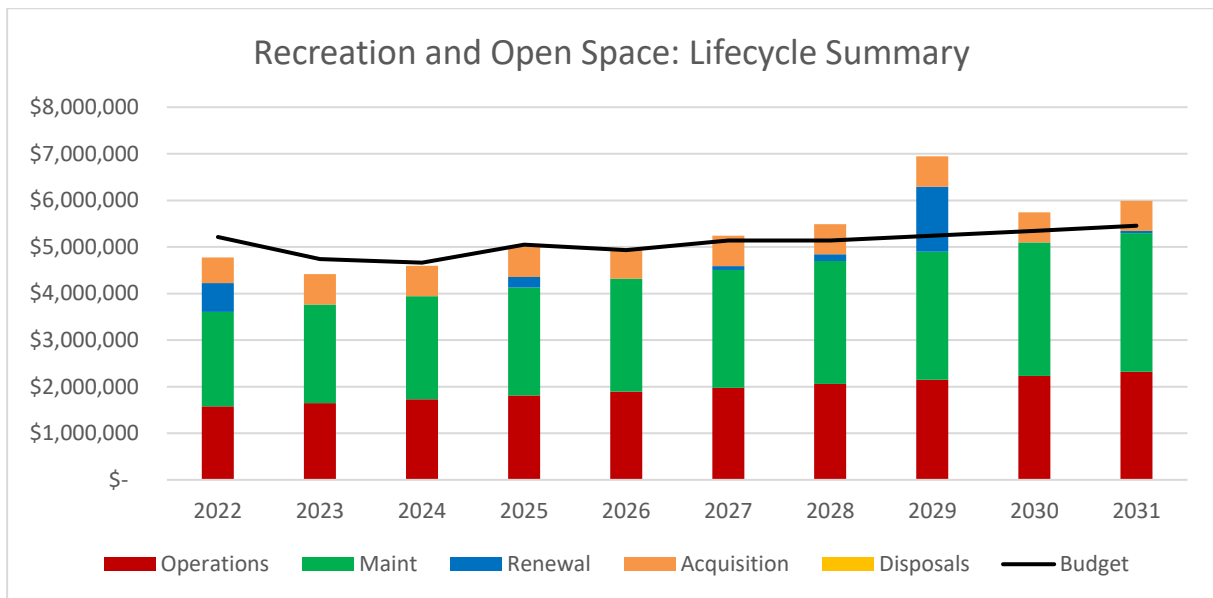
Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the previously proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The previously proposed budget line indicates the estimate of available funding. The gap between the forecast work and the previously proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary



All figure values are shown in current day dollars.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: ‘coordinated activities to direct and control with regard to risk’⁶.

An assessment of risks⁷ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a ‘financial shock’, reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets need to be identified and along with their typical failure mode, and the impact on service delivery. This work will be completed for the next iteration of the plan.

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

⁶ ISO 31000:2009, p 2

⁷ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

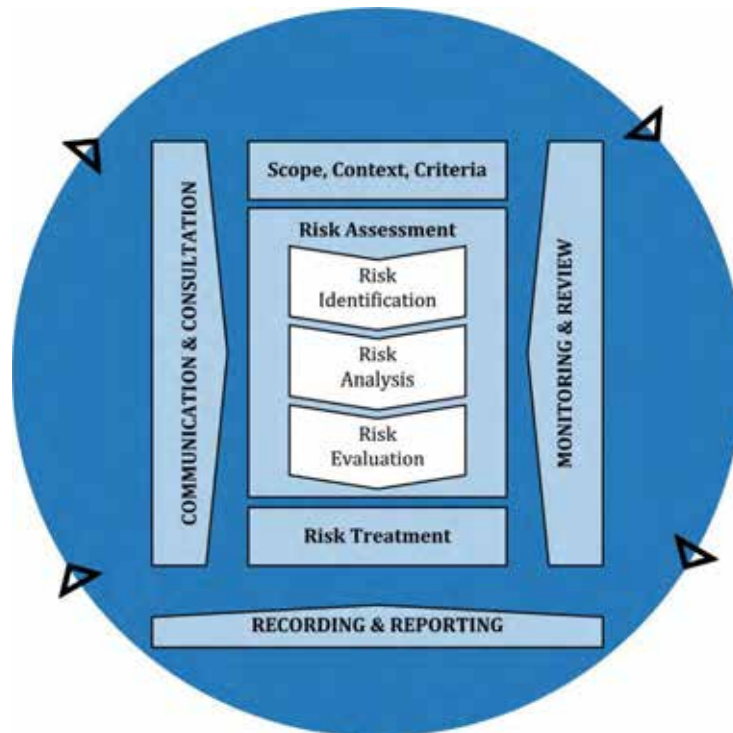


Fig 6.2 Risk Management Process – Abridged

Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Council's Risk Management Framework

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0032/192668/Risk-Management-Framework.pdf

Council's Risk Management Policy

https://www.alexandrina.sa.gov.au/_data/assets/pdf_file/0023/193046/Risk-Management-Policy.pdf

6.3 Infrastructure Resilience Approach

We do not currently measure our resilience in service delivery. This will be included in future iterations of the Asset Management Plan.

7.0 FINANCIAL SUMMARY

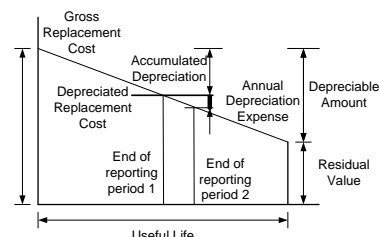
This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below.

Current (Gross) Replacement Cost	\$28,784,504
Depreciable Amount	\$28,784,504
Depreciated Replacement Cost ⁸	\$18,808,248
Depreciation	\$882,148.0



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the Asset Management Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁹ 159.38%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 159.38% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10 year financial planning period

This Asset Management Plan identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is \$4,676,890 on average per year.

The proposed (budget) operations, maintenance and renewal funding is \$4,429,471 on average per year giving a 10 year funding shortfall or funding excess of \$-247,420 per year. The funding shortfall is the result of a greater understanding of the asset base, their condition, maintenance requirements and levels of service. This excludes acquired assets. This excludes acquired assets.

⁸ Also reported as Written Down Value, Carrying or Net Book Value.

⁹ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 1.0 for the first year of the Asset Management Plan and ideally over the 10 year life of the Long-Term Financial Plan.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Table 7.1.3 shows the forecast costs (outlays) for the 10 year long-term financial plan.

Forecast costs are shown in 2022 dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Forecast Acquisition	Forecast Operation	Forecast Maintenance	Forecast Renewal	Forecast Disposal
2021	\$550,000	\$1,580,034	\$2,025,482	618,422	\$0
2022	\$650,000	\$1,650,090	\$2,115,298	\$0	\$0
2023	\$650,000	\$1,728,728	\$2,216,118	\$0	\$0
2024	\$650,000	\$1,809,952	\$2,320,253	225,656	\$0
2025	\$650,000	\$1,892,211	\$2,425,714	\$0	\$0
2026	\$650,000	\$1,975,530	\$2,532,534	82,219	\$0
2027	\$650,000	\$2,059,936	\$2,640,748	139,714	\$0
2028	\$650,000	\$2,145,456	\$2,750,389	1,397,759	\$0
2029	\$650,000	\$2,232,118	\$2,861,495	\$0	\$0
2030	\$650,000	\$2,319,950	\$2,974,101	48,996	\$0

7.2 Funding Strategy

The proposed funding for assets is outlined in the Council's budget and Long-Term financial plan.

The financial strategy of the Council determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

Asset values are forecast to remain consistent as additional assets are added or removed from service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this Asset Management Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this Asset Management Plan are:

- That available data was accurate
- Financial data is accurate

7.5 Forecast Reliability and Confidence

The forecast costs, previously proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale¹⁰ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed 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 7.5.1: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	B	Further improvements during next planning cycle
Growth projections	B	Further improvements during next planning cycle
Acquisition forecast	B	Further improvements during next planning cycle
Operation forecast	B	Comfortable with data.
Maintenance forecast	B	Comfortable with data.
Renewal forecast		
- Asset values	B	Comfortable with data.
- Asset useful lives	B	Comfortable with data.
- Condition modelling	B-C	Looking to improve as part of Tech1 rollout
Disposal forecast	E	NA

The estimated confidence level for and reliability of data used in this AM Plan is considered to be a B – reliable.

¹⁰ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹¹

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The Councils current Corporate Information system is Synergy. Council will migrate to Technology1 from July 2021.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is Assetic MyData. Council will migrate to Technology1 from July 2021.

8.2 Improvement Plan

It is important that the Council recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Asset Management Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Specific community Levels of Service unknown.	Environment Division	Internal	Within 4 years
2	Impacts of the economic downturn on growth predictions.	Resources and Environment Divisions	Internal	Within 4 years
3	Simplistic and restrictive financial analysis available from on-line templates.	Resources and Environment Divisions	Internal and external support	Within 2 years
4	Detailed assessment of risks awaiting production of the Risk Management Plan.	Environment Division	Internal	Within 4 years
5	Create an asset review program that considers data collection & validation; unit rate and valuations review; useful lives; predictive modelling update; forward works program; and AMP review. Aiming to undertake a review of two asset classes per year.	Environment Division	Internal	2 Asset Classes per year

8.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of each Council election.

¹¹ ISO 55000 Refers to this the Asset Management System

8.4 Performance Measures

The effectiveness of this Asset Management Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the Long-Term Financial Plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate 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, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 1.0).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2008, 'NAMS.PLUS Asset Management', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/namsplus.
- IPWEA, 2015, 2nd edn., 'Australian Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/AIFMM.
- IPWEA, 2015, 3rd edn., 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2012 LTFP Practice Note 6 PN Long-Term Financial Plan, Institute of Public Works Engineering Australasia, Sydney
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Alexandrina 2040 Strategic Plan
- Alexandrina Annual Business Plan and Budget

10.0 APPENDICES

Appendix A Acquisition Forecast

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2022	\$550,000	\$0	\$0
2023	\$650,000	\$0	\$0
2024	\$650,000	\$0	\$0
2025	\$650,000	\$0	\$0
2026	\$650,000	\$0	\$0
2027	\$650,000	\$0	\$0
2028	\$650,000	\$0	\$0
2029	\$650,000	\$0	\$0
2030	\$650,000	\$0	\$0
2031	\$650,000	\$0	\$0

Appendix B Operation Forecast

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	\$1,580,034	\$33,715	\$1,580,034
2023	\$1,650,090	\$39,845	\$1,650,090
2024	\$1,728,728	\$39,845	\$1,728,728
2025	\$1,809,952	\$39,845	\$1,809,952
2026	\$1,892,211	\$39,845	\$1,892,211
2027	\$1,975,530	\$39,845	\$1,975,530
2028	\$2,059,936	\$39,845	\$2,059,936
2029	\$2,145,456	\$39,845	\$2,145,456
2030	\$2,232,118	\$39,845	\$2,232,118
2031	\$2,319,950	\$39,845	\$2,319,950

Appendix C Maintenance Forecast

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2022	\$2,025,482	\$43,230	\$2,025,482
2023	\$2,115,298	\$51,090	\$2,115,298
2024	\$2,216,118	\$51,090	\$2,216,118
2025	\$2,320,253	\$51,090	\$2,320,253
2026	\$2,425,714	\$51,090	\$2,425,714
2027	\$2,532,534	\$51,090	\$2,532,534
2028	\$2,640,748	\$51,090	\$2,640,748
2029	\$2,750,389	\$51,090	\$2,750,389
2030	\$2,861,495	\$51,090	\$2,861,495
2031	\$2,974,101	\$51,090	\$2,974,101

Appendix D Renewal Forecast Summary

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2022	\$618,422	\$644,335
2023	\$0	\$428,200
2024	\$0	\$229,200
2025	\$225,656	\$550,500
2026	\$0	\$340,700
2027	\$82,219	\$449,000
2028	\$139,714	\$340,700
2029	\$1,397,759	\$340,700
2030	\$0	\$340,700
2031	\$48,996	\$340,700

Appendix E Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	\$964,600	\$1,580,034	\$2,025,482	\$644,335	\$0	\$5,214,451
2023	\$625,100	\$1,616,375	\$2,072,068	\$428,200	\$0	\$4,741,743
2024	\$656,200	\$1,655,168	\$2,121,798	\$229,200	\$0	\$4,662,366
2025	\$625,000	\$1,696,547	\$2,174,843	\$550,500	\$0	\$5,046,890
2026	\$625,000	\$1,738,961	\$2,229,214	\$340,700	\$0	\$4,933,875
2027	\$625,000	\$1,782,435	\$2,284,944	\$449,000	\$0	\$5,141,379
2028	\$625,000	\$1,826,996	\$2,342,068	\$340,700	\$0	\$5,134,764
2029	\$625,000	\$1,872,671	\$2,400,619	\$340,700	\$0	\$5,238,990
2030	\$625,000	\$1,919,488	\$2,460,635	\$340,700	\$0	\$5,345,822
2031	\$625,000	\$1,967,475	\$2,522,151	\$340,700	\$0	\$5,455,325

Wastewater & Water Supply Asset Management Plan



Wastewater treatment lagoon, Strathalbyn

Document Control		Asset Management Plan			
Document ID :					
Rev No	Date	Revision Details	Author	Reviewer	Approver
V2.0	October 2020	Complete review and restructure	GL	SR	Council

This Asset Management Plan may be used as a supporting document to inform an overarching Strategic Asset Management Plan.

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

Asset management planning is a comprehensive process ensuring delivery of services from infrastructure, is financially sustainable.

This Asset Management Plan (AM Plan) details information about infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required over the planning period. The Asset Management Plan will link to a Long-Term Financial Plan which typically considers a 10 year timeline.

This plan covers the Wastewater & Water Supply infrastructure assets that provide sewerage and recycled water services to the region.

1.2 Asset Description

Primarily Wastewater and Water Supply assets comprises:

- Electrical & Automation
- Wastewater Treatment Plants (WWTP)
- Conveyance Networks
- Pumping Stations
- Pressure Networks
- Biosolids Processing
- Recycled water networks
- Irrigation infrastructure
- IT & Instrumentation
- Plant
- Buildings & Structures

The above infrastructure assets have significant total renewal replacements value estimated at \$65.3M.

1.3 Levels of Service

Our present funding levels are sufficient to continue to provide existing services at current service levels in the medium term.

If recommendations are not adopted the main service consequences of the Planned Budget are:

- Non-compliant and unpredictable critical infrastructure.
- Risk of increased future and acute maintenance expenditure.
- Increased risk to staff, public health, environment and service reliability.
- Higher asset lifecycle costs with reduce future demand and growth planning.
- Damage to reputation.
- Higher probability of acute organisational financial damages.

1.4 Future Demand

The main demands for new services are created by:

- Regional population growth
- Customer Expectations
- Regulatory Compliance

- Changes in required skillsets
- Technical Obsolescence
- Aging Assets
- Environment Impacts (Climate change)

These demands will be approached using a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

- Development of 30 Year Infrastructure Masterplan.
- Scope the installation of improved communication and monitoring solutions.
- Strategic recruitment and training to cover capability gaps.
- More consistent renewal programs that compliment available resourcing levels.
- Integrate climate change adaptation into design thinking.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10 year total outlays, which for the Wastewater and Water Supply business unit is estimated at \$96.9M or \$9.7M on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available revenue for the 10 year period is \$76.6M or \$7.7M on average per year as per the Long-Term Financial plan or Planned Budget. This represents an additional \$20.3M in loan borrowings over the term of the LTFP. The differential is driven by capital funding requirements and is sustainably managed via internal depreciation costs.

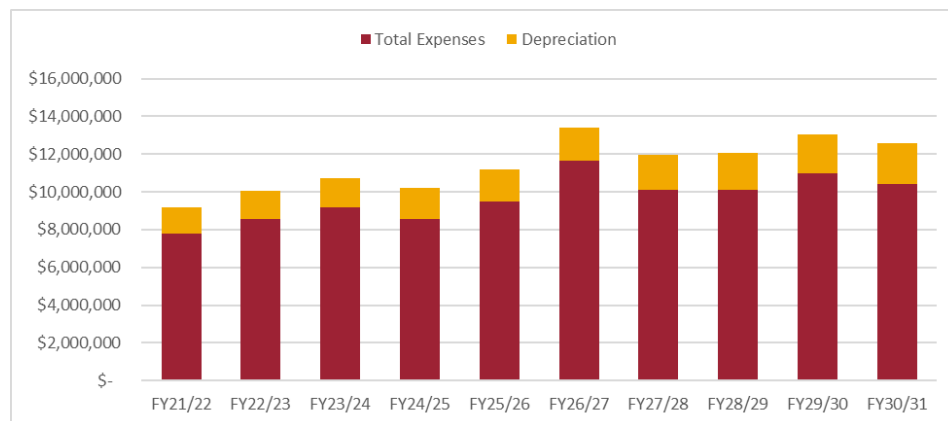
The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

All values have been calculated using present day dollars with estimated indexation and growth over the term.

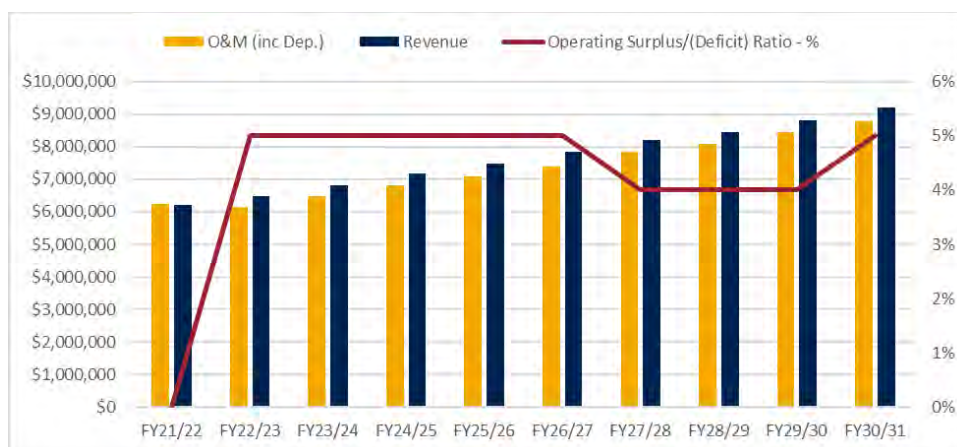
Forecast Lifecycle Costs and Planned Budgets (Excl. depreciation)



The total expenses chart below includes all overheads that are directly and/or indirectly charged back to the utility.



When applying depreciation costs to overall expenditure the Operational Surplus/(Deficit) ratio can be used to understand the financial sustainability over the term of the plan. The below chart highlights that the proposed growth percentage will be able to fund the current AMP and its associated risks.



1.6.2 What we cannot do

We currently do **not** allocate enough budget to explore more expansive works beyond core needs and compliance. Works and services that may be impacted under present funding levels are:

- The holistic impact that large strategic projects may have on the entire wastewater utility financial and asset management position. This will need to be scoped as part of those initiatives.
- The true impact of aging assets on O&M over the term of the long-term financial plan. This should be reviewed annually.
- Limited capability to predict and/or control unexpected failure and cost implications of critical infrastructure.
- Improvement plan items that have not been endorsed and/or cannot be absorbed into existing resources and budgets.
- The 'real world' impacts of what the Coorong Quays wastewater scheme expansion will have on resources and O&M expenditure.

1.6.3 Managing the Risks

Our present budget levels are projected to be sufficient to continue to manage risks in the short term.

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

- Delivery of the proposed short-term infrastructure plan.
- Using existing O&M budgets to provide more objective information and planning.
- Govern support and develop business cases for improvement plan and strategic initiatives.
- Continue to prioritise O&M daily and manage reactive workloads based on highest risk.
- Look at improved governance models to find opportunities and efficiencies.

1.7 Asset Management Practices

Our systems to manage assets include:

- Corporate SynergySoft system (Financials).
- Assetic MyData software (Assets).

Assets requiring renewal/replacement are identified from either the asset register or an alternative method. These methods are part of the Lifecycle Model.

- If Asset Register data is used to forecast the renewal costs this is done using the acquisition year and the useful life,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems (such as Pavement Management Systems) and may be supplemented with, or based on, expert knowledge.

The alternate method was used to forecast the renewal life cycle costs for this Asset Management Plan.

1.8 Monitoring and Improvement Program

The next steps resulting from this AM Plan to improve asset management practices are:

Task	Task	Benefit
1	Asset recognition and renewal of regional communications and monitoring assets.	Renewal of technically obsolescent communications and monitoring infrastructure. Replacement with contemporary system that allows remote monitoring and objective data for O&M and infrastructure planning.

2	Infrastructure resilience with construction of critical spares for rapid installations.	Service, organisational, public and environmental risk reduction. Resilience planning for major failures and reestablishment of essential services to customers.
3	Development of a sector specific Business Continuity Plan and Risk Management Plan.	Organisational capability and governance development. Better understanding of service and organisational risk for appropriate prioritisation and management of resources.
4	Support for technical integration and digital transformation (instrumentation & analytics)	Digital transformation for data driven decision making. Leverage data to optimise all aspects of the service from risk governance, O&M optimisation, infrastructure planning and climate change adaptation.
5	Water business unit Policy development.	Improved organisational governance and support. Will ensure that other internal policies do not create high risk change on the essential service. Improve customer understanding and education.
6	Demand & Growth Planning Improvement via 30 Year Wastewater Infrastructure Masterplan	Regional integrated and infrastructure planning. Improve asset demand management and potential optimisation opportunities within the region. Improved financial sustainability and reduce step change cost implications to future customers.
7	Active monitoring of isolated and out-of-hours workers.	Reduce risk to staff and organisation while providing the service.
8	Development of Technical Standards documentation.	Reduce complexity within the system for improved quality assurance. Should aim to provide consistent infrastructure during renewal and expansion projects. Improve consistency and expectation from developers when engaging the business. Will help reduce the impact of low quality and cost infrastructure being gifted through development.
9	Restructure and audit assets to improve data and planning integrity.	Improve the credibility of financial projections and asset management planning. Understand gaps in asset information and opportunities for improvement. Overall this will ensure strategies for service sustainability and costs are based on the best possible information.
10	Installation of critical infrastructure to meet current capacity & compliance standards.	Holistic risk reduction to organisation and the service. Reduce reactive workloads due to reduction in acute system failures.
11	Utility governance review.	Explore independent review of current utility governance and internal service models. Investigate options & opportunities to improve key strategic focus area of 'stakeholder understanding and support'.

2.0 Introduction

2.1 Background

This Asset Management Plan (AMP) communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the long term planning period.

The Asset Management Plan is to be read with the Alexandrina Community Strategic Plan and Long-term Financial Plan (LTFP) planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Alexandrina Strategic Community Plan
- Environmental Action Plan
- Climate Adaptation Plan
- Economic Development Plan
- Alexandrina Risk Framework
- Asset Accountancy Policy
- Water – Data Strategy and Project Plan
- Wastewater 30 Year Masterplan (under development)

The infrastructure assets covered by this Asset Management Plan include all assets covered by the Council owned Wastewater and Water Supply independent business unit. This includes all asset classes that are centrally managed by Alexandrina Council but are utilised and costed to the business unit. For a detailed summary of the assets covered in this Asset Management Plan refer to Section 5.

Council also run a small non-potable water scheme in Finnis. Council purchases water directly from a SA Water water-main before piping it via an 8 kilometre Council owned 50mm water main to the township of Finnis. This private water main supplies low pressure non-potable water to approximately 23 properties within the township. Council 'buys' water from SA Water at commercial rates and then on-charges residents. In addition to the cost to purchase the water, charges include maintenance and operating costs for maintaining Council owned pipe works, water meters and water meter readings.

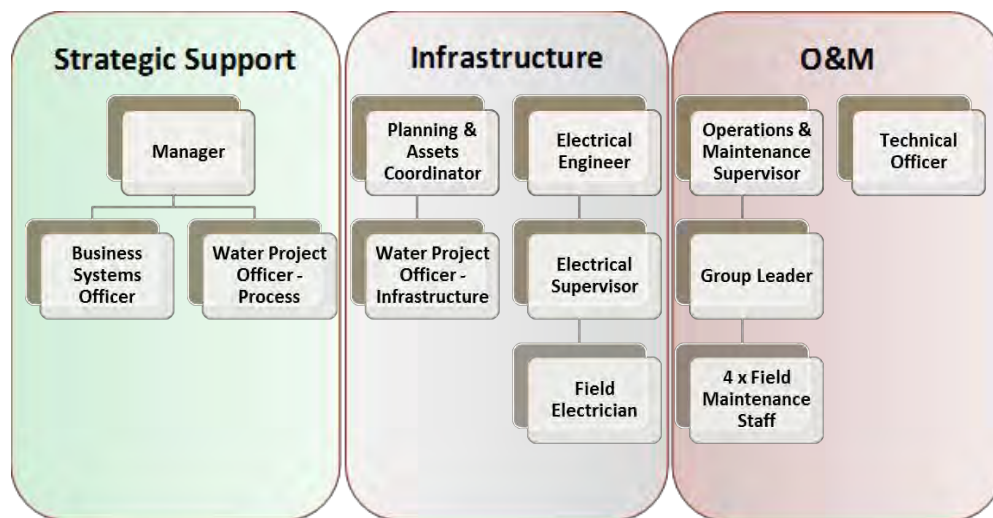
Primarily the assets are used to provide essential wastewater services to the entire region. The infrastructure assets included in this plan have a total current replacement value of insert \$65.3M.

Key stakeholders in the preparation and implementation of this Asset Management Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Elected Members (Board)	<ul style="list-style-type: none"> Represent needs of community/shareholders, Allocate resources to meet planning objectives in providing services while managing risks, Ensure service sustainability.
CEO/Executive	Governance oversight and endorsement.
Sustainable Resources Team [CWMS]	Wastewater and Water Supply infrastructure management & delivery. Operational and maintenance compliance. Asset management plan authors and owners
State & Federal Regulators	Regulatory governance for the safe and reliable service delivery.
Internal Services	Proficient delivery of internal services to support the AMP deliverables.

Our current organisational structure for the holistic service delivery is detailed below. This structure includes a number of permanent and specialised project officer roles (contracted) & yet to be appointed positions.



The Manager of the Wastewater Utility Reports to the General Manager of Wellbeing. The GM of Wellbeing subsequently reports directly to the CEO.

Operationally the above resources are also allocated across waste management and stormwater operations, maintenance and management responsibilities.

The service also accesses internal services and this is charged back an activity based cost (ABC). The following internal service provisions are listed below. This arrangement is further explained in the financial section of this plan.

Finance General	Main Office Floorspace
Audit	HR
Procurement	Payroll
Strategy	WHS
Risk	IT
Communications	Records Management
Governance	Customer Service
Creditors	Debtors

2.2 Goals and Objectives of Asset Ownership

Our goal in managing 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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are;

- Levels of service – specifies the services and levels of service to be provided,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2015 ¹
- ISO 55000²

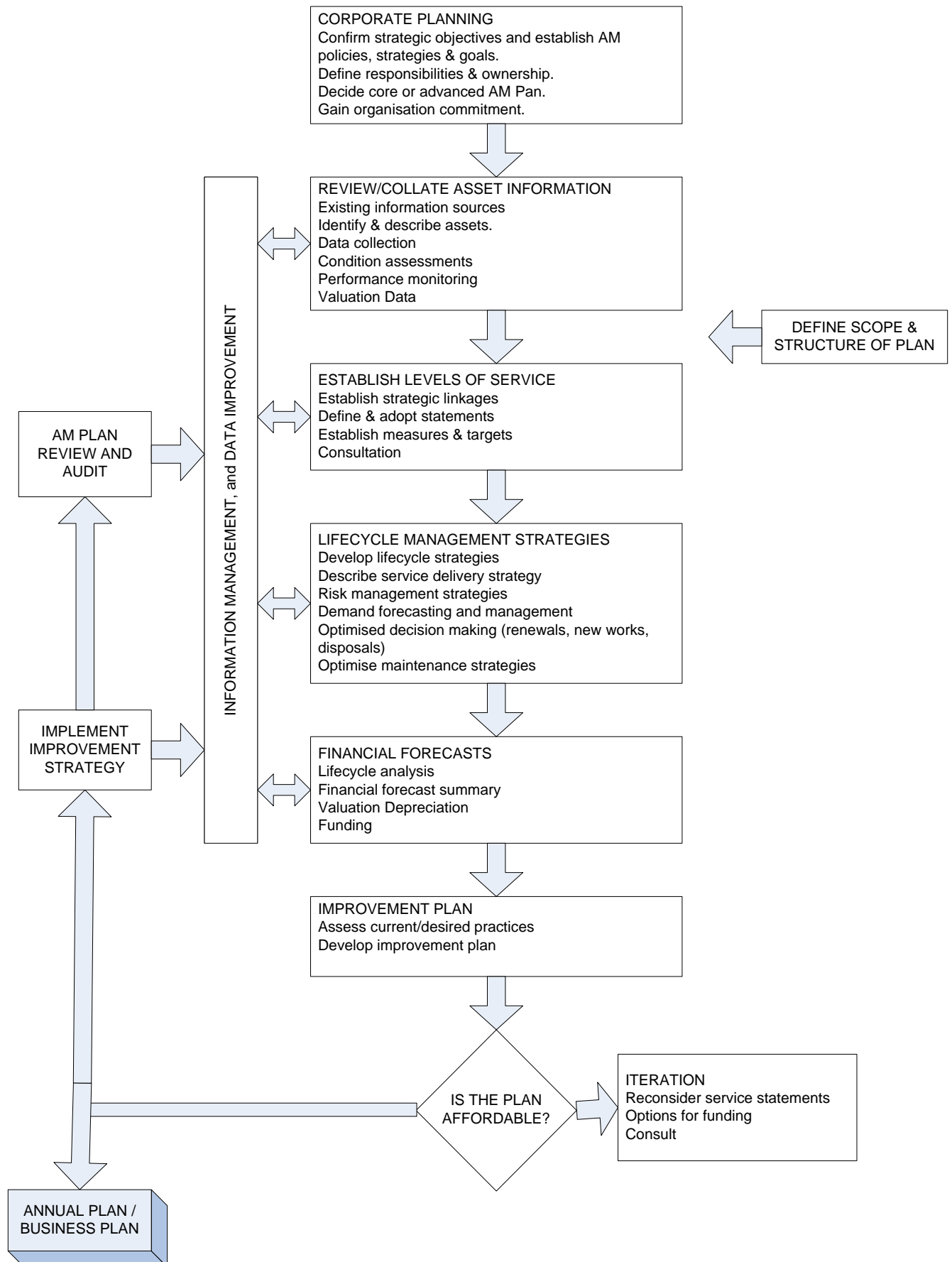
A road map for preparing an Asset Management Plan is shown below.

Road Map for preparing an Asset Management Plan

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

¹ Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2 | 13

² ISO 55000 Overview, principles and terminology



3.0 LEVELS OF SERVICE

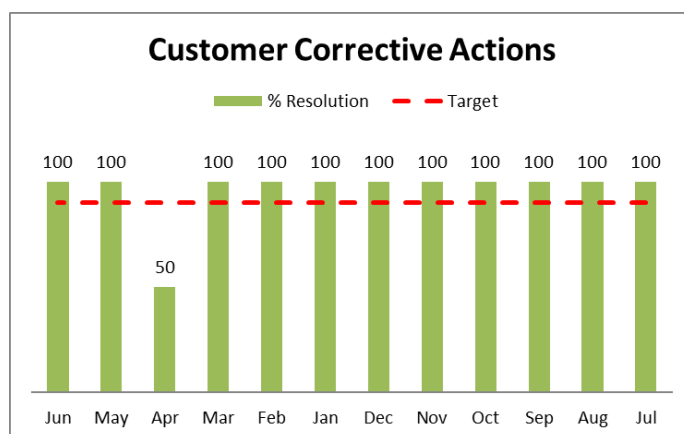
3.1 Customer Research and Expectations

This Asset Management Plan is prepared to facilitate consultation prior to adoption of levels of service by the Elected Body. Future revisions of the Asset Management Plan will incorporate stakeholder consultation on service levels and costs of providing the service. This will assist the Elected Board and stakeholders in matching the level of service required, service risks and consequences with the customer's ability and willingness to pay for the service.

Understanding the detail of customer service expectations within an essential service is quite unique. The service and its access must be reliable at all times. This creates endemic high demands that must be achieved for compliance and regulatory requirements. Meeting the minimum legal requirements should be considered a natural function of the utility.

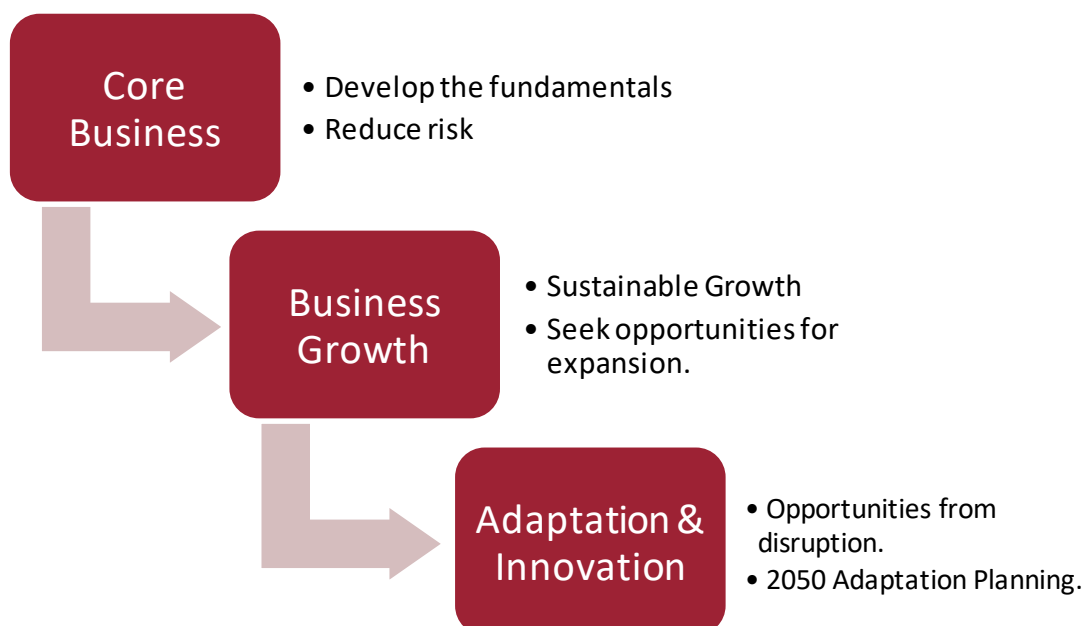
This does not limit the requirement to constantly improve the reliability and affordability of the service. There are very few customer complaints raised about the service provision, so the current assumption is that customers are quite satisfied at the present time.

The team currently tracks customer requests and resolutions via a manual process. The below chart highlights the performance for the financial year 2019/20 against agreed targets.



3.2 Strategic and Corporate Goals

This Asset Management Plan is prepared under the direction of the utility's vision, mission, goals and objectives. The intent of this document is to focus on the 'effective management' and the development of the water utility. To support the improvement within the utility a 3 tiered horizon model has been established. This execution plan focuses on developing core competencies as a foundation to launch business growth and innovation.



Our vision is:

Lead the regional provision of long-term secure and sustainable wastewater and recycled water services.

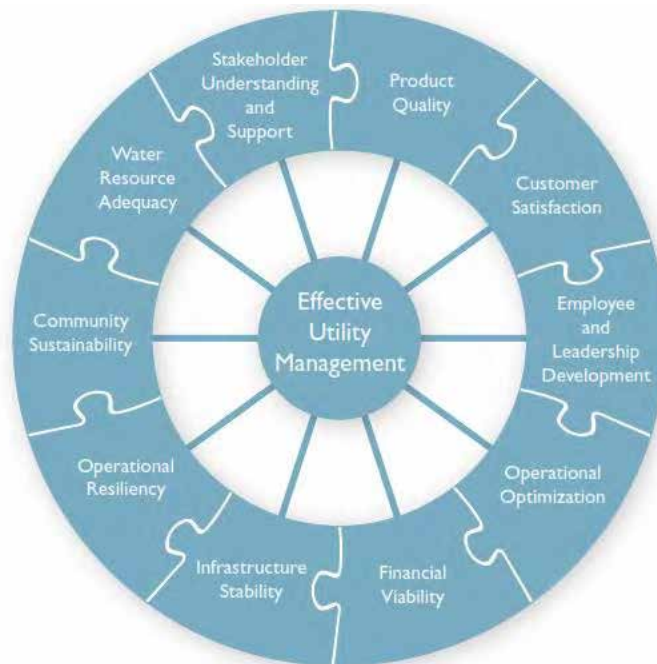
Our mission is:

Provide a reliable, responsive, affordable and low impact service.

Strategic Goals – Core Business:

Effective Utility Management

To build a framework for assessment, the functional delivery requirements for a water utility must first be understood. Water utilities scale from high level corporate entities to remote small rural businesses. Despite this, the key attributes regarding required service delivery remain largely unchanged, even if the 'economy of scale' differences provide unique challenges for each. It could be argued that prioritisation & planning is more critical for small to moderately sized organisations, due to the resourcing restraints that are endemic to these utilities.



Effective Utility Management (EUM): United States Environmental Protection Agency

The above attributes represent key aspects which could be used to gauge the current service level delivery and resource prioritisations for a water utility. This adaptation has come from international reviews on looking at the performance criteria and governance of water industries.

The intent of the framework is to provide a more balanced approach to effectively manage the utility as it draws on broader operational considerations and supportive governance requirements. The appropriate and strategic use of resources is fundamental to managing risk and sustainability in a moderately sized organisation. By utilising an industry specific framework we can apply a service review structure that is more likely to provide relevant techniques that are more consistent with the industry and customer expectations.

Maturity Assessment

The following assessment is based on the listed attributes that have been determined as key performance indicators for effectively managing a water utility. A more detailed assessment and justifications for the below outcomes have been included in section 3.5 Custom Service Levels as part of the AMP.

Water Business Unit – Attribute Rankings

Based on resourcing restraints we need to develop sustainable growth and prioritisation methodologies. This will ensure that our customer base is not dealing with 'step change' cost increases and/or increased risk to service

reliability. The attributes that indicate effectively utility management have been listed and ranked below. All of these attributes are critically important but focus areas must be established to allow for organisational and industry prioritisation over the short-term.

Rating Higher Achievement →	1	Aspirational Target									
	2	Customer Satisfaction									
	3				Employee & Leadership development		Financial Viability	Product Quality	Water Resource Adequacy		
	4		Stakeholder Understanding and Support	Infrastructure Stability	Operational Optimisation		Operational Resilience				Community Sustainability
	5										
		1	2	3	4	5	6	7	8	9	10
← Planning & Resource Focus						Future Focus →					
Ranking											

Strategic goals have been set by the utility based on the attributes for effective utility management highlighted within the maturity assessment. The relevant goals and objectives and how these are addressed in this Asset Management Plan are summarised and prioritised in Table 3.2.

Table 3.2: Goals and how these are addressed in this Plan

Goal	Ranking	How Goal and Objectives are addressed in the AM Plan
Customer Satisfaction	1	<i>The Asset Management Plan will use these principles to drive holistic improvement and sustainability of service for all our customers.</i>
Stakeholder Understanding & Support	2	<i>Acceptance of initiatives and improvement plan/s will show collective support.</i>
Infrastructure Stability	3	<i>Sound Asset Management Planning and addressing known deficiencies will improve the stability of our infrastructure.</i> <i>Planned technological integration will improve our system and process knowledge for increased reliability.</i>
Operational Optimisation	4	<i>Initiative within the asset management plan will enable and support ongoing optimisation and continuous improvement.</i> <i>Technical integration to ensure data driven decision making.</i>
Employees & Leadership Development	5	<i>Asset Management Plan adoption will provide strategic support for the recruitment of skillsets and supporting existing staff in their development.</i>
Operational Resiliency	6	<i>Support initiatives for data driven decision making for more predictive analysis.</i>

		<i>Stakeholder education to improve risk based prioritisation between Leaders and Operations.</i> <i>Ensure that strategic focus is maintained on Core Business growth to reduce uncontrolled change.</i> <i>Advocate for improvements in critical infrastructure planning and risk governance.</i>
Financial Viability	7	<i>Asset management plans in place but significant errors in foundation data which impacts predictive models.</i> <i>Risks exist with long-term (>10 years) cost exposure to unknown infrastructure demands and expansion.</i>
Product Quality	8	<i>Resource technical gaps in assets and people.</i> <i>Support the integration of technology to better control process and empower continuous improvement.</i>
Water Resource Adequacy	9	<i>Resource technical gaps in assets and people.</i> <i>Support the integration of technology to better control process and empower continuous improvement.</i>
Community Sustainability	10	<i>Support the development of the Wastewater 30 Year Masterplan and its recommendations.</i> <i>Develop >10 years planning cycles to ensure sustainability of service and opportunities from future disruptions.</i>

Although the Asset Management Plan has a short-term delivery focus the importance of aligning this with future design and planning principles is essential. This is covered within the demand planning section of this plan and covers key principles that should be adopted to ensure that business growth and 2050 Adaptation is supported.

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the wastewater electrical infrastructure services are outlined below.

Water Industry Act 2012

The Water Industry Act 2012 and its associated regulations provide a legislative framework to ensure that South Australian consumers have safe, reliable and quality water supplies, sewerage services and installations. The Act helps plan water supply and demand and provides guidance for the water industry through:

- licensing
- price regulation
- regulating customer service standards
- informing technical standards for water and sewerage infrastructure, installations and plumbing
- performance monitoring of the water industry
- other measures relevant to using and managing water.

Water Industry Regulations 2012

The [Water Industry Regulations 2012](#) define licensing, technical and safety requirements for water industry entities. The regulations also address the protection and use of water and sewerage infrastructure and equipment, and water conservation measures.

Water and sewerage infrastructure technical standards

The Technical Regulator publishes technical standards for people who design, install, inspect, alter, repair, maintain, remove, disconnect or decommission water and sewerage infrastructure, as defined by the Water Industry Act 2012.

Infrastructure Standard

The Technical Regulator has published an [Infrastructure Standard](#) which adopts the [Water Services Association of Australia \(WSAA\) codes](#) as the principle minimum Standard for water and sewerage infrastructure.

The intent is not for legacy assets to be updated, but that going forward, WSAA codes, supplementary notices and supporting documents which are equivalent to or exceed WSAA requirements shall be used for any design, installation, inspection, alteration, repair, maintenance, removal, disconnection or decommissioning of water and sewerage infrastructure.

The WSAA codes complement standards, codes and guidelines in current legislation – a copy is available for viewing at the Office of the Technical Regulator.

By formalising the WSAA codes as the Infrastructure Standard, the Office of the Technical Regulator (OTR) recognises that the WSAA codes have gone through a peer-review process and are widely accepted for the requirements of water and sewerage infrastructure.

If utilities produce supplementary notices and supporting documents which are equivalent to or exceed WSAA requirements, then these will be recognised as suitable as part of this standard.

Alexandrina Council Water Industry Entity complies with the requirements of all applicable legislation, including but not limited to;

- *Work Health and Safety Act 2012 and Regulations 2012*
- *Workers Rehabilitation and Compensation Act 1986*
- *South Australia Public Health Act 2011 and Regulations (Wastewater) 2013*
- *Water Resources Act 1997*
- *Natural Resources Management Act 2004 and associated Regulations*
- *Local Government Act 1999*
- *Environment Protection Act 1993*
- *Environment Protection (Water Quality) Policy 2015*
- *Dangerous Substances Act 1979 and associated Regulations 2008*
- *South Australian Community Wastewater Management System (CWMS) Design Criteria 2019*

With a complex and rapidly changing compliance environment Alexandrina Council will continue to work with regulators and stakeholders to improve or remediate any compliance gaps in its management and/or operation of the water entity.

Strategically the water entity is managing growth and has specific roles in the immediate future which will transition the utility to improved compliance.

3.4 Customer Values

Service levels are defined in three ways, customer values, customer levels of service and technical levels of service.

It is also important to understand the definition of a customer within an essential service environment. These customers have been described below and how they differ. These groups are not mutually exclusive and can have profound positive and negative impacts on each other.

Service User	<i>The customer paying for and using the service.</i>
Service Governance	<i>The external and internal customers that ensure regulatory compliance.</i>
Service Impacts	<i>The community and the environment that can receive passive, indirect and direct impact from the service.</i>

It is important to make this distinction because essential services are highly regulated environments. This can create circumstances where those utilising the service do not understand the true cost of the service.

Customer Values indicate:

- what aspects of the service is important to the customer,
- whether they see value in what is currently provided and
- the likely trend over time based on the current budget provision

Table 3.4: Customer Values

Customer Values	Measure	Current Performance	Expected Trend Based on Planned Budget
Reliable	# Customers that have service interruptions. Customer Actions resolution (%)	Effectively zero cases of total service loss.	With aging infrastructure the likelihood is for a decrease in service reliability without active intervention.
Affordable	Cost per Property Unit. O&M Cost per \$ of asset	Price comparable with other utilities. Excellent considering the scale differences between some businesses.	To meet demands from expansions and compliance it is expected cost will increase. This is an industry sector assumption.
Limited Environmental Impacts	# of overflows. Complex and multifaceted.	Low number of incidents. Limited technical sophistication to indirect measure impacts.	Expected to increase. Gaps in technical levels of service and aging assets will increase this probability if no intervention.
No public Health impacts	# of overflows. # treatment monitoring	Low number of incidents. Consistent exceedances at treatment plants re water quality.	Expected to increase. Gaps in technical levels of service and aging assets will increase this probability if no intervention.
No adverse impacts on community	# complaints % resolution # of overflows	Low number of incidents.	Expected to increase. Gaps in technical levels of service and aging assets will increase this probability if no intervention.

Responsive	# Out of hours Callouts # of overflows % customer resolution	Team is very responsive and service issues that impact the customer are rare.	With aging infrastructure the likelihood is for a decrease in service reliability and hence an increase in reactive workloads.
Safety	# incidents # Lost time injuries	Low reportable incidents. However high consequence risks remain endemic in the governance model.	Infrastructure is high risk. It is expected that internal Council systems will need to mature and this will remain constant and/or improve.
Sustainable	Long-term financial planning	High confidence in short term planning (<5 years) but lower confidence in long term planning (>10 years) and/or acute failure or risks	With aging asset this will need to be addressed to deal with increased renewal forecasting and expansion demands from growth. Inaction could materially increase costs to future customers.

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Quality	<i>Indicators that would determine that a high quality service is delivered.</i>
Capacity/Condition	<i>The current analysis of the service delivery for this particular attribute.</i>
Maturity	<i>Score rating based on the current condition</i>

Rating	Description
1.	Effective, systematic approach and implementation; consistently achieve goals.
2.	Workable systems in place; mostly achieved goals.
3.	Partial systems in place with moderate achievement but could improve
4.	Occasionally address this when specific needs arises.
5.	No system for addressing this.

In Table 3.5 under each of the service measures types (Quality, Capacity/Condition, Maturity) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current funding level.

Table 3.5: Customer Level of Service Measures

Attribute	Quality	Capacity/Condition	Maturity Ranking (1-5)
Product Quality	Treated water in full compliance with customer expectations, public health and environmental needs.	Some variations and above threshold results for water quality testing. Generally root cause of variation is unknown due to a lack of available process data. This can create issues with end users but impacts are generally low. Public Health KPIs are the only focus. Operational plant monitoring and	3

		environmental KPIs not well understood and have not been implemented.	
Customer Satisfaction	Reliable, responsive and affordable service. Meets customer service expectations on timely feedback and emergency responsiveness.	Generally limited impact to customer. This is and has been a historical strength of the utility. Resources are quickly diverted to repair or contain issues. Work conditions are reactive and planning is difficult. Some technical gaps in supply chain management and total impacts on customer. Cost comparable to larger utilities so considered very affordable based on the economy of scale differences between the companies.	2
Employee and Leadership Development.	Recruits and retains staff that are competent, adaptive and autonomous. Established collaborative organisation dedicated to continual learning and improvement. Knowledge is retained and improved upon through succession planning. Pathways for professional progression and development. Integrated and well-coordinated senior leadership team.	Strong internal culture regarding development opportunities. Small but autonomous group that works well together, especially in emergency conditions. Business unit level collaboration is sound with opportunities to contribute and develop through pragmatic and opportunistic learning. Some challenges with knowledge retention and succession planning due to high level workloads and exposure to senior staff. Significant opportunities for development. Technical gaps still remain due to the complexity of the service and the scale of the business unit. There is limited domain interaction & knowledge gaps exist in broader governance and internal service areas.	3
Operational Optimisation	Timely, cost-effective, reliable. Minimises resource use, loss and impacts. Awareness of information and technical developments to support timely adoption of improvements.	Workloads are fundamentally focused on planned preventative maintenance checks and reactive break/fix requirements. Legacy processes and aging assets continue to place pressure on resources which limits improvement opportunities. Operations lack fundamental data to understand current state, predict failures and to optimise resourcing. Limited ability to assess and/or adopt new systems or technology. The team is largely forced into maintaining operational resiliency but this is not sustainable.	4
Financial Viability	Understands full life-cycle cost of the utility. Maintains effective balance b/w long-term debt, asset values operation and maintenance costs and total revenue. Predictable service charges. Plans and invests for future needs.	Strong historical financials but life-cycle assessments limited due to foundation data and/or systems. Utility is in a strong financial position but will need to prioritise growth and initiatives to ensure step change of costs does not impact future customers. LTFP has steady and predictable service charges with no allowance for O&M expansion with new assets. Unknown asset conditions or process failure could impact significantly.	3

		<p>Asset management plans in place but significant errors in foundation data which impacts predictive models.</p> <p>Risks exist with long-term (>10 years) cost exposure to unknown infrastructure demands and expansion.</p>	
Community Sustainability	<p>Aware and attentive to long-term future impacts on community.</p> <p>Drives to protect the natural environment and indirect impacts from its operations.</p> <p>Explicitly considers a variety of pollution prevention and public health impact as part of an overall strategy.</p> <p>Enhances ecological and community sustainability</p>	<p>Operational and project focus.</p> <p>Limited opportunity and resourcing to dedicate to broader strategic endeavours.</p> <p>Has potential to have high levels of impact on community growth and development but these have not been incorporated into strategic plans.</p> <p>Risk management and governance is relatively immature. Policies are in place for business continuity planning (BCP) but poorly developed for the critical infrastructure sector.</p>	4
Infrastructure Stability	<p>Understands the condition and costs of critical infrastructure.</p> <p>Sustainably maintains and enhances the condition of all assets to the lowest life-cycle cost.</p> <p>Maintains acceptable risk consistent with customer, community and regulations.</p> <p>Anticipates growth to reduce life-costs and ensure reliability.</p> <p>Ensures asset renewal and repair are coordinated to minimise disruption.</p>	<p>Sound asset management structures and strategies in place organisationally. Gaps exist in its application within the water utility.</p> <p>Projects and work is reactive and lag initiated. This places upward pressure on design and project delivery timelines.</p> <p>Risks are high and not well understood.</p> <p>Instability causes resourcing inefficiencies with reactive and emergency workloads.</p> <p>Customer is largely unaffected but this will change with aging asset base.</p> <p>Plan versus actual capital programs are largely reactive and priorities change constantly.</p> <p>Critical control points and contingency planning is not highly considered by the organisation.</p> <p>There are limited to no long-term growth strategies.</p>	4
Operational Resiliency	<p>Utility leadership and operations work collaborative to avoid problems.</p> <p>Proactively identifies, assesses and establishes process tolerances to effectively manage business risks.</p> <p>Resources are part of critical contingency planning and prioritisation.</p>	<p>High levels of collaboration within business unit but limited collaboration from organisation on imposed change that can impact 'Business as Usual' (BAU).</p> <p>Small teams are impacted by quite minor process changes at the organisational level.</p> <p>This with increased statutory compliance (Water industry) increases risk substantially.</p> <p>Organisational BCP and risks are not well understood. This can create uncontrolled downward pressure on the service which places the customer, public and environment at high risk.</p> <p>Currently operational teams absorb all strategic and risk decision making, workload prioritisation and emergency response requirements.</p>	4

Water Resource Adequacy	<p>End user water availability is high quality and consistent.</p> <p>Current and future needs are incorporated into LTFP.</p> <p>Demand analysis and storage adequacy is maintained.</p>	<p>Regular quality thresholds are exceeded which can impact end user.</p> <p>Water storages are pragmatically managed to ensure availability. Nevertheless end use is of lower risk and operations are rarely interrupted. This could change if more diversified reuse options are explored.</p> <p>Due to technical resourcing gaps very limited transparency exists on environmental indicators and impacts.</p> <p>Long-term planning is limited to strategic projects focused on legacy issues.</p> <p>There is limited data or modelling for future development.</p>	3
Stakeholders Understanding and Support	<p>Understanding and support from oversight bodies.</p> <p>Collaborative and supportive change management to reduce risk implications to service levels, costs, regulatory and current improvement programs.</p> <p>Active involvement in decisions that impact BAU.</p>	<p>Organisational change is seldom delivered based on the utility customer but internal personal/compliance needs.</p> <p>Change is rarely implemented through formal change management and risk frameworks, which places downward pressure on the utility. Organisational prioritisation is not conducted based on highest risk to the organisation but rather single points of compliance and/or siloed service improvements.</p> <p>Federal & State regulatory bodies tend to be more collaborative and supportive despite higher risks to service and/or organisation. These stakeholders tend to have better understanding regarding the challenges and risks.</p> <p>There is some level of collaboration and support by those vertically responsible for the utility.</p>	4

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service or a new service that did not exist previously.
- **Operation** – the regular activities to provide services.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life.
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided.

Service and asset managers plan, implement and control technical service levels to influence the service outcomes.³

Table 3.6 shows the activities expected to be provided under the current Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

³ IPWEA, 2015, IIMM, p 2 | 28.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
Acquisition	To meet the current and future capacity demands.	LTFP Project Delivery	Reactive based on network capacity drivers. Break/fix methodology.	<i>Move from a reactive to predictive planning model. Support development and regular reviews of regional Master planning.</i>
	24/7 service reliability to customers.	Customer complaints or service incidents.	Historically low confidence in LTFP predicted asset acquisition planning due to lack of data and information integrity.	<i>Support the digital transition strategy to drive data driven decision making.</i>
	Support regional development and expansion.	New development applications and asset delivery. (Gifted Assets)	Improved planning methodology for this asset management plan.	<i>>80% compliance with LTFP modelling.</i>
	Ensure efficiency & optimal performance with fit-for-purpose technology (Technical Obsolescence)	Industry engagement and availability of critical spares.	Good with high levels of support for new development and infrastructure delivery.	<i>Improvements in growth (acquisition) planning as part of this Asset Management Plan review.</i>
	To meet current and future compliance.	Design infrastructure for climate resilience.	Low with key assets reaching technical obsolescence.	<i>Renew outdated communications and monitoring infrastructure and processes with contemporary technology.</i>
	Climate adaptation		Gaps between existing infrastructure and contemporary compliance requirements.	<i>Acquisition of instrumentation to support data driven decision making</i>
			Lack of data that could inform risk management prioritisation regarding infrastructure and process.	
Operation	To reduce likelihood of asset and process failure.	Scheduled asset & operational service inspections.	Full compliance with operational and maintenance inspections. However checks have limited diagnostic ability for sophisticated process and asset assessments.	<i>Installation of contemporary remote monitoring capability (SCADA) within communications assets.</i>
	Ensure processes and assets meet contemporary industry efficiency and optimisation requirements.	Manual fault diagnostics.	Immature data acquisition systems. Currently not at an industry acceptable standard.	<i>Need to reduce working in isolation and out-of-hours work for field services.</i>
		Service outage incidents		
	Ensure service reliability to all customers.	Compliance monitoring.		<i>Planned renewal of outdated communications and monitoring infrastructure/processes with contemporary technology.</i>
		Compliance with Operational &		

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	<p>To meet all regulatory and compliance responsibilities.</p> <p>To reduce risk to organisation.</p>	Maintenance Planner.	Reliability is very good but risk is being transferred to staff and 'out of hours' responsibilities.	<p><i>Acquisition of instrumentation to support data driven decision making.</i></p> <p><i>Development of documented Operational and Maintenance Plans.</i></p>
Maintenance	<p>To replace and/or repair assets to ensure service reliability.</p> <p>Increase the Useful life of water assets.</p>	<p>Scheduled asset & operational service inspections.</p> <p>Renewal rates in-line with LTFP projections.</p> <p>Compliance with Operational & Maintenance Planner.</p>	<p>Full compliance with operational and maintenance inspections.</p> <p>Out-of-hours service provisions to meet maximum allowable downtime.</p> <p>Asset life increases has started to impact O&M costs.</p> <p>Prediction models are immature and reactive.</p> <p>Maintenance increases are not linked to asset acquisitions.</p>	<p><i>Transition from high risk and low frequency onsite inspections. This should be supported via renewal of technical obsolescent communications infrastructure.</i></p> <p><i>Reduce maintenance cost increases will improve asset renewal planning.</i></p> <p><i>>90% Assets reach Useful Life</i></p> <p><i>Renewal models to be prioritised and meet available resourcing levels.</i></p> <p><i>Asset acquisitions should have % O&M growth component included.</i></p>
Renewal	<p>Ensure assets are able to provide the required service reliability.</p> <p>Ensure assets meet contemporary industry efficiency and optimisation requirements.</p>	<p>LTFP Project Delivery.</p> <p>Industry engagement and availability of critical spares</p>	<p>Reactive based on failure rates and/or inspection and escalation reports.</p> <p>Asset valuations are low compared to contemporary pricing and there are automation assets that are not even recognised in the register.</p> <p>Key assets reaching technical obsolescence.</p> <p>Limited planning based on data.</p>	<p><i>Move from a reactive to predictive planning model. Support development and regular reviews of regional Master planning.</i></p> <p><i>Utilise alternate renewal model and structure to ensure functional support for wastewater renewal programs.</i></p> <p><i>Adjust infrastructure unit rates to align better with contemporary replacement costs.</i></p> <p><i>>80% compliance with LTFP modelling.</i></p> <p><i>Renew outdated communications and monitoring infrastructure and processes with contemporary technology.</i></p>

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
				<i>Support Asset Class investigation and assessments to improve data integrity for renewal modelling.</i>
Disposal	<p>Ensure compliance with all relevant regulators.</p> <p>Asset disposal does not impact process or service reliability.</p> <p>Ensure best financial outcome for our customers.</p>	<p>Regulatory compliance and approvals.</p> <p>Service interruptions.</p> <p>Decision making at the event level.</p>	<p>Aligned with LTFP.</p> <p>Usually resulting from asset upgrades and expansion.</p> <p>Sale and or appropriate disposal at the time.</p>	<p><i>Improved modelling with upgrade and expansion that includes asset disposal financial implications.</i></p> <p><i>Utilise historical averages for LTFP.</i></p>

Note: * Current activities related to Planned Budget.

** Forecast required performance related to forecast lifecycle costs.

It is important to monitor the service levels provided regularly as these will change. The current performance is influenced by work efficiencies and technology, and customer priorities will change over time.

4.0 FUTURE DEMAND

4.1 Demand Drivers

The current and future demands within the water industry are very broad and with limited ability to forecast implications.

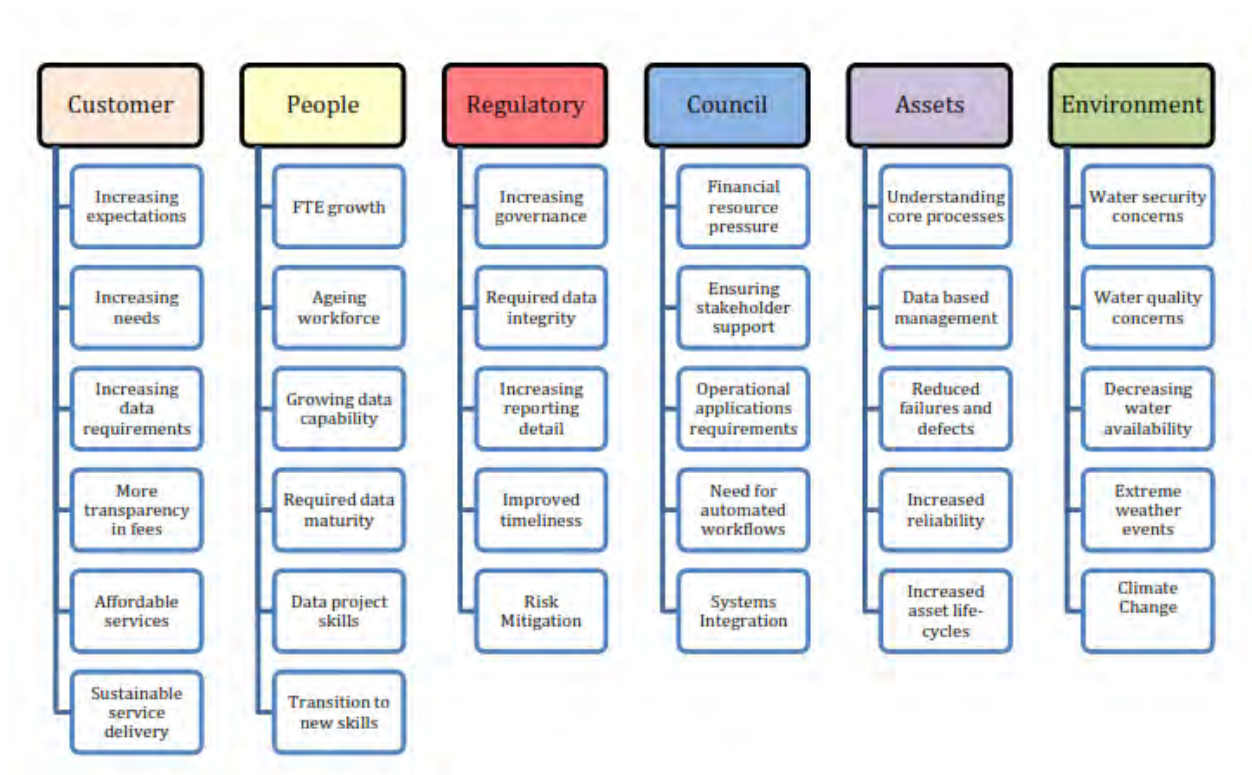
For the purposed of this plan the key demand drivers have been recognised as but not limited to;

- Regional population growth
- Technological advancements.
- Customer Expectations
- People Management
- Regulatory Environments
- Organisational Challenges
- Aging Assets and Asset Management
- Environment Impacts

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

This environment will be highly volatile and adaptation will be critical to meeting these changes. For simplicity the following table was created to highlight some but not all of the expected demands placed on the utility.



4.3 Demand Impact and Demand Management Plan

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

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 can include non-asset solutions, insuring against risks and managing failures.

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this Asset Management Plan.

Table 4.3: Demand Management Plan

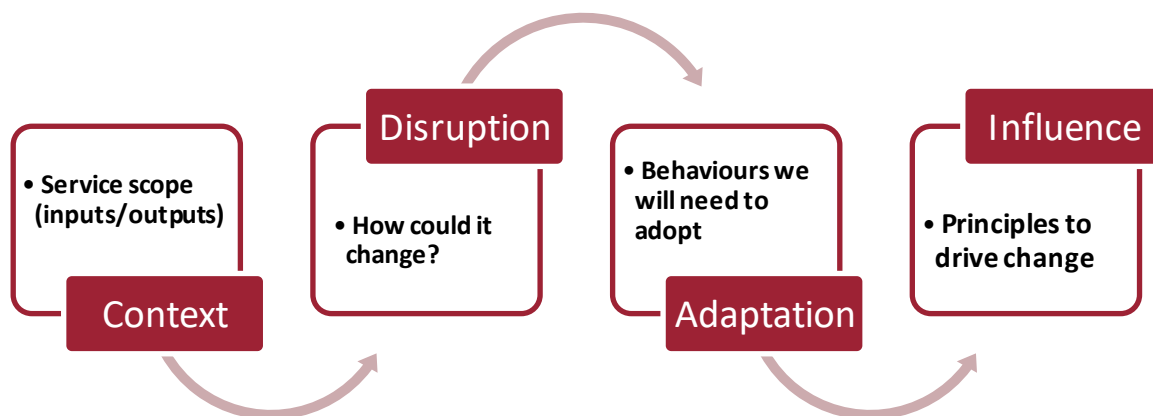
Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population Growth	Reactive to individual developer assessments. Limited projections based on regional planning.	1.3% regional growth.	Sporadic expansions based on reactive drivers. More complex networks and assets with limited asset rationalisation.	Develop a Wastewater 30 Year Infrastructure masterplan. Implementation of contemporary monitoring and data capturing technology. Live capacity modelling.
Acquisitions	History of acquiring privately owned wastewater schemes. Recently acquired Coorong Quay's system. Assessments have been made with resources allocated.	15% growth in regional infrastructure (~12 months)	May impact on regional service levels with resources spread over more services. Unknown system issues which could create reactive capital and O&M expenditure. This is rapid growth over short timelines. This can create downward pressure on the service.	Complete required integration engineering. Recruit additional team resources. Integrate asset management business systems. Train staff in new scheme O&M. Additional O&M funding included early in the LTFP as risk mitigation measure.
Technical Obsolescence	Aging electrical infrastructure. Manage through high inventory stocks. No strategy for transition.	High risk to service and organisation	Lower levels of optimisation and higher O&M costs. Higher risk with aging infrastructure with lower resilience. Reactive and excessive demands on capital projects with break/fix models.	Improved and staged renewal planning. Implementation of contemporary monitoring and data capturing technology.
Climate Change	No formal strategic management	High risk to service and organisation.	Extreme events will damage essential	Develop a Wastewater 30 Year Infrastructure masterplan. Including

	adopted for the utility.		<p>service infrastructure.</p> <p>Lower resilience in existing infrastructure.</p> <p>Lower useful lives of assets.</p> <p>Increase costs to customers.</p>	<p>impacts from climate change and a adaptation measures.</p> <p>Develop improved analytics for better predictive models.</p> <p>Integration of climate adaptation in design thinking.</p>
Customers	Meeting current service expectations.	Increased access and transparency.	Increase demands and expectations	<p>Utilise technology to drive optimisation across assets and process.</p> <p>Develop and have the ability to track customer value KPIs.</p>
Water Security	<p>Low demand and low costs for water.</p> <p>Long-term existing agreements in place.</p>	Increased water demands and revenue.	Opportunities for commercial development and revenue intake.	<p>Long-term considerations based on existing agreements.</p> <p>Look to improve water quality and options to expand markets into the future.</p>
Regulations	Improvement required to meet all contemporary compliance expectations.	Increased regulatory control with more technical complexity.	<p>Technical development will be required to meet expectations.</p> <p>Increased demand on technical and sensory integration.</p>	<p>Ensure that people development and change management is supported by the organisation.</p> <p>Implementation of contemporary monitoring and data capturing technology.</p>
Decentralisation	No strategy in place.	Micro system installation at the community level.	<p>Higher costs to existing customers for transition lines.</p> <p>Private ownership of essential service assets.</p>	Prepare for increased complexity in systems via implementation of regional networks and IOT infrastructure.
Carbon & water Reduction	No policy or strategy in place	Reduce carbon and water footprints.	<p>Regulated and social pressure to decarbonise.</p> <p>Increase demands on alternative energy production.</p>	Develop a Wastewater 30 Year Infrastructure masterplan. Including impacts from climate change and a adaptation measures.

				Ensure that people development and change management is supported by the organisation.
Exponential growth in renewal in the long-term.	No strategic plan to manage impact.	Skewed growth across the LTFP. Holistic and truncated renewal beyond 2050.	Risk to the sustainability of the service beyond 2050	Development of significantly longer demand planning processes. Digital transition strategy to provide more reliable and predictive analysis. Improvements in asset structure and data integrity to improve long-term modelling.

To provide more rigour into this process the business unit is currently undertaking a broader and longer term view at asset management planning with the initiation of a Wastewater 30 Year Masterplan process. Significant modelling has already been completed to date with a focus on immediate needs to integrate with the LTFP process (<10 years). This has been a clear driver for the acquisition of new assets in the lifecycle analysis to meet current capacity limitations within the region.

In addition the utility also developed a strategic workshop to understand the impacts of a 2050 future. The focus of this workshop was to develop some key strategic principles that would structure decision making to ensure the path of adaptation is supported.



To adapt to a 2050 world the following strategic principles have been drafted to support a adaptation.



These principles will drive a strategic framework for future decision making. When coupled with long-term infrastructure planning (30 years) the scale will allow for more structured adaptation to a 2050 world.

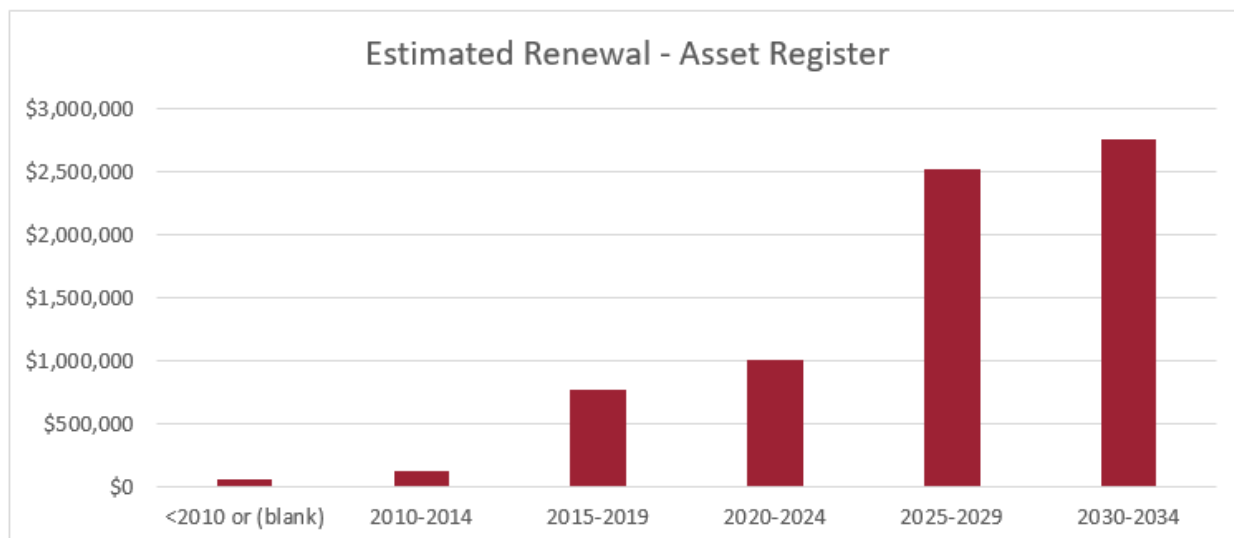
4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

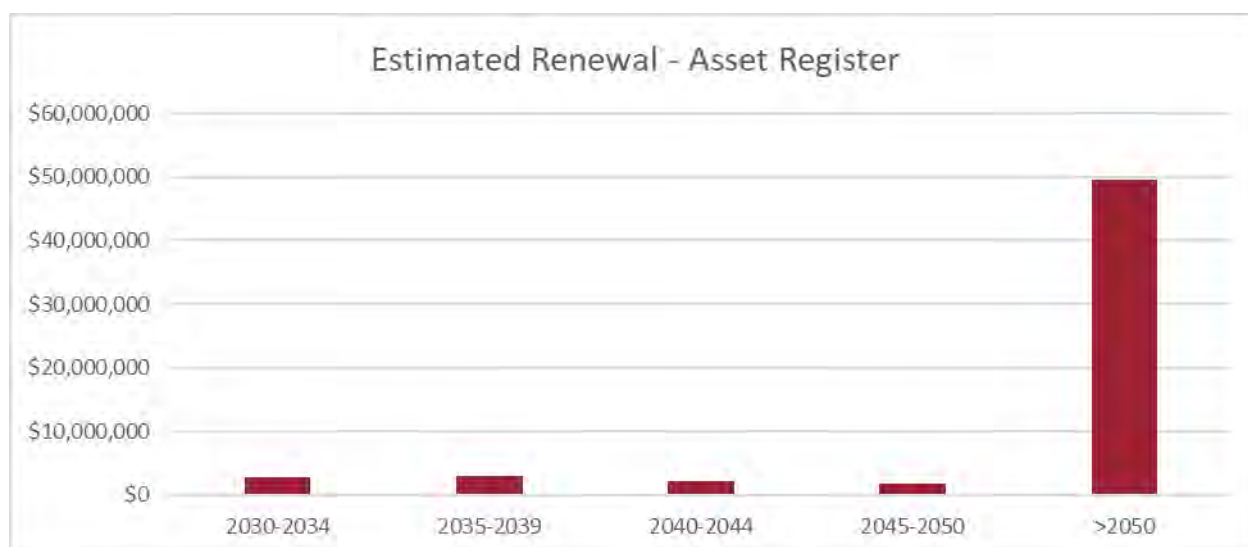
Historically Alexandrina Council has not applied a growth component on new asset acquisitions. This can place downward pressure on resources as the business continues to grow. The lifecycle analysis within this asset management plan has still not addressed this. A percentage increase in O&M should be applied for newly acquired assets based on the per dollar value of maintaining existing assets. This will ensure that growth does not continue to increase risk to people, service, community and the organisation.

Future demands will also increase with skewed and exponential growth in renewal programs.



The asset lifecycle analysis has addressed this in the short-term with an alternative renewal model. This approach has taken into account a realistic delivery model over the term of the LTFP. With roles and responsibilities being diverse this will ensure that the program does not impact customer service while delivering a structured asset renewal program.

Additional infrastructure demand is expected to increase significantly beyond 2050. Strategically this will be addressed via the integration of technology and more advanced modelling as we progress into the future. Based on future uncertainty for timescales of this magnitude, it is considered low risk currently.



4.5 Climate Change and Adaption

The impacts of climate change can have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.

As a minimum we should consider both how to manage our existing assets given the potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

Opportunities identified to date for management of climate change impacts on existing assets are shown in Table 4.5.1

Table 4.5.1 Managing the Impact of Climate Change on Assets

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Decarbonise	Community and Regulatory expectation to reduce carbon footprint.	Will require more technical and advanced understanding of processes and assets. May include the integration of new technology with specialisation and capability requirements.	Develop a Wastewater 30 Year Infrastructure masterplan. Including impacts from climate change and adaptation measures. Ensure that people development and change management is supported by the organisation.
Extreme weather events	Increased ferocity and frequency of extreme weather events.	Increased rainfall events will impact peak flows throughout the system. This may lead to increased	Develop a Wastewater 30 Year Infrastructure masterplan. Including

		<p>overflows and community impacts.</p> <p>Storm surge may impact the infrastructure integrity of costal assets.</p> <p>Higher heat could impact the integrity of electrical componentry.</p>	<p>impacts from climate change and a adaptation measures.</p> <p>Improved in-situ monitoring will highlight organisational risk based on particular events.</p> <p>Integrate climate change adaptation into infrastructure design thinking and monitoring.</p>
Water Availability	Water scarcity will create increased demand on recycled water systems.	<p>There will be more demand for the product which may increase revenues.</p> <p>The water quality and consistency requirements will demand the installation of new and more advance technology.</p>	<p>Improved in-situ monitoring will highlight organisational risk based on particular events.</p> <p>Develop a Wastewater 30 Year Infrastructure masterplan to explore options reports for future advancement.</p>
Groundwater	Sea levels could impact ground water levels within the region.	Rising ground water could impair in-ground assets.	No established plan. 30 year infrastructure planning will help monitor impacts.

5.0 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how the utility plans to manage and operate the assets at the agreed levels of service (Refer to Section 3) while managing life cycle costs.

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this Asset Management Plan are shown in Table 5.1.1.

These assets are a critical component of the autonomous operation and 24/7 reliability of the wastewater utility. The assets are spread over an 1800 km² area and represented within 5 separate wastewater schemes. This is represented by more than 70 separate automation systems across the region.

The utility is currently looking at the restructure of assets. To support this transition the information below includes the new structure to be integrated by FY21/22. For complete transparency a reference chart has been included to highlight the changes from historical structures.

The water industry also includes assets that are governed and charged back to the utility by the Council. These asset classes have also been included below to highlight the true costs to the business unit.

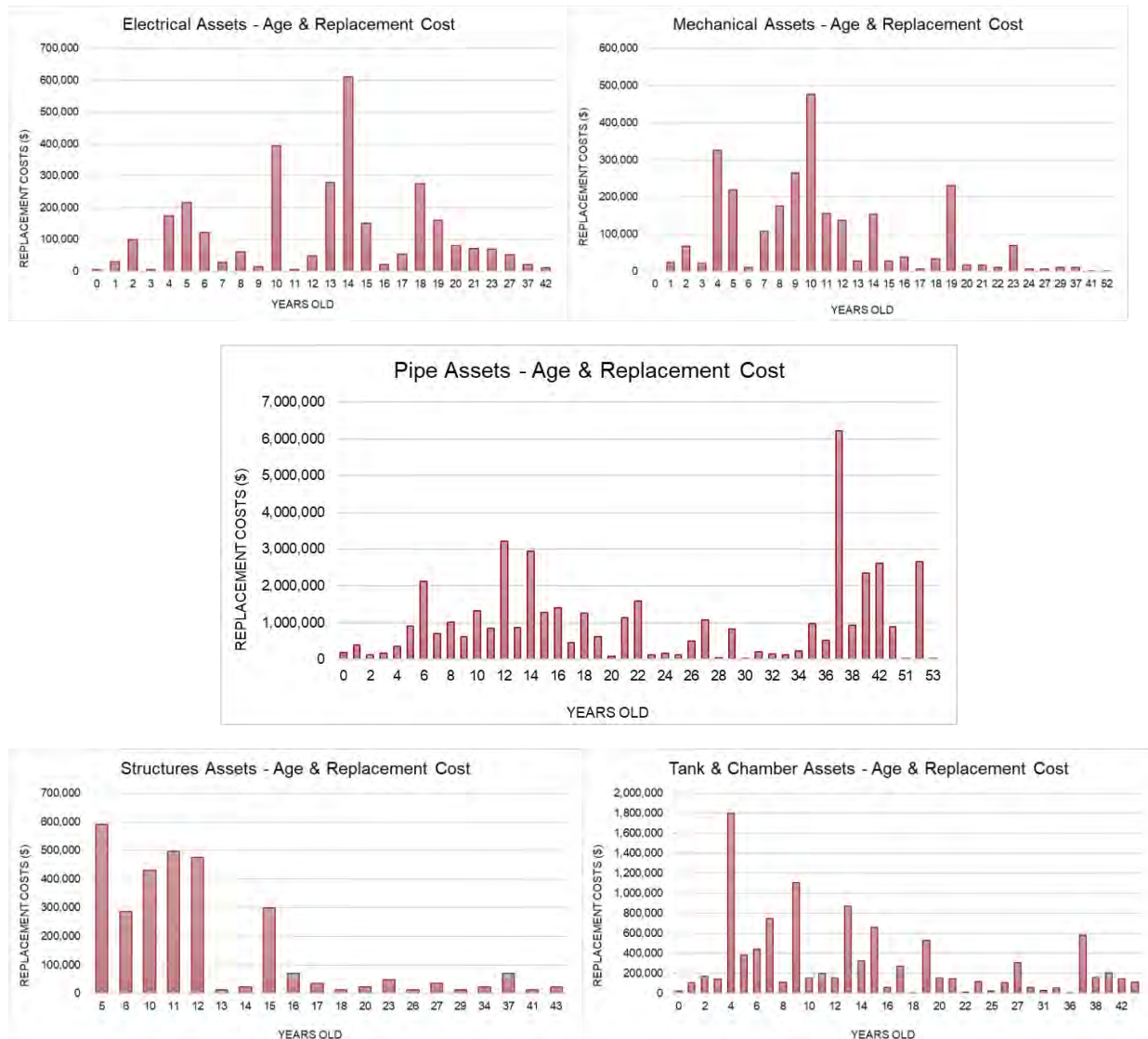
Table 5.1.1: Assets covered by this Plan

New Asset Class	Current Asset Class	Asset Type	Number	CRC
Electrical	Sewer Treatment & Pumping	Power and Process Control	68	\$ 2,250,153
		Electrical Cabinets	66	\$ 352,892
		Power Control	2	\$ 23,411
		Process Control	5	\$ 488,267
		Distribution Board	1	\$ 5,267
		Flowmeters (to Instrumentation).	20	\$ 77,948
Tanks & Chambers	Sewer Treatment & Pumping	Balance Tank	3	\$ 1,094,520
		Decant Tank	1	\$ 413,524
		Reactor Tank	7	\$ 2,231,564
		WAS Tank	3	\$ 252,633
		Chlorine Contact Tank	2	\$ 14,733
		Septic Tank	16	\$ 694,819
		Leak Detection Pit	3	\$ 40,852
		Pump Station Chamber	80	\$ 2,424,940
		Storage Tank (inc Holding Tanks)	14	\$ 153,059
		Supernatant Tank	1	\$ 72,704
		Vacuum Collection Pit	23	\$ 300,588
		Valve Pit	101	\$ 807,526
	Manholes	Manhole	334	\$ 2,252,056
Mechanical	Sewer Treatment & Pumping (ST&P)	Aerator	17	\$ 435,883
		Air Liquid Separator	1	\$ 13,539
		Pump	167	\$ 1,210,647
		Solids Separator Screw	1	\$ 8,172
		Vacuum Pump	2	\$ 56,822
		Actuated Valves (Valves)	20	\$ 49,439
		Irrigation Pivot	6	\$ 414,851

		Chlorination Unit	3	\$ 151,055
		Odour Filter	15	\$ 34,100
		Polymer Mixing Unit	1	\$ 9,659
		Solids Separator	1	\$ 50,531
		Treated Water Filter	1	\$ 19,064
		Vacuum Sewer Collection Tank	1	\$ 115,528
		V-Fold Belt Press	2	\$ 256,341
Pipes	Pipes	Manifold	3	\$ 726,387
		Maintenance Shafts	237	\$ 331,896
		Valve	331	Not Valued
		Connection Point	6544	\$ 6,088,628
		Flushing Point	2349	\$ 3,289,548
		Rising Main	83 km	\$ 12,599,152
		Vacuum Main	3.1 km	\$ 465,653
		Gravity Drain	109 km	\$ 15,825,022
		Gravity Main	41 km	\$ 6,116,939
Structures	ST&P	Lagoon Liner	6	\$ 2,614,185
	ST&P	Vent Pipe	40	\$ 477,175
Lagoons	Land	Lagoons	17	Not Valued
Dump Ezy	Council Asset	Dump Ezy	TBC	\$ 56,669
			TOTAL	\$ 65,319,045
Water Assets – Indirect Charges.				
Structures		Catwalk (Platform)		\$ 35,065
		Fencing		\$ 462,636
Buildings		Buildings		\$ 911,613
Roads		Roads		\$ 19,254
Stormwater		Stormwater		\$ 6,916
Plant		Plant		TBC
			TOTAL	\$ 1,435,484
Coorong Quays		To be integrated in FY21/22	Est.	\$ 4,000,000

Asset age profiling is relevant to the useful life of each particular asset type. To improve how this information is represented assets have been charted based on grouping into the proposed new structure. These assets tend to have similar useful lives which can provide inference when assessing age profiles.

Figure 5.1.1: Asset Age Profiles



All figure values are shown in current day dollars.

It is recommended that the renewal funding and project delivery is more evenly distributed to allow internal expertise to prioritise asset renewal on an annual basis.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

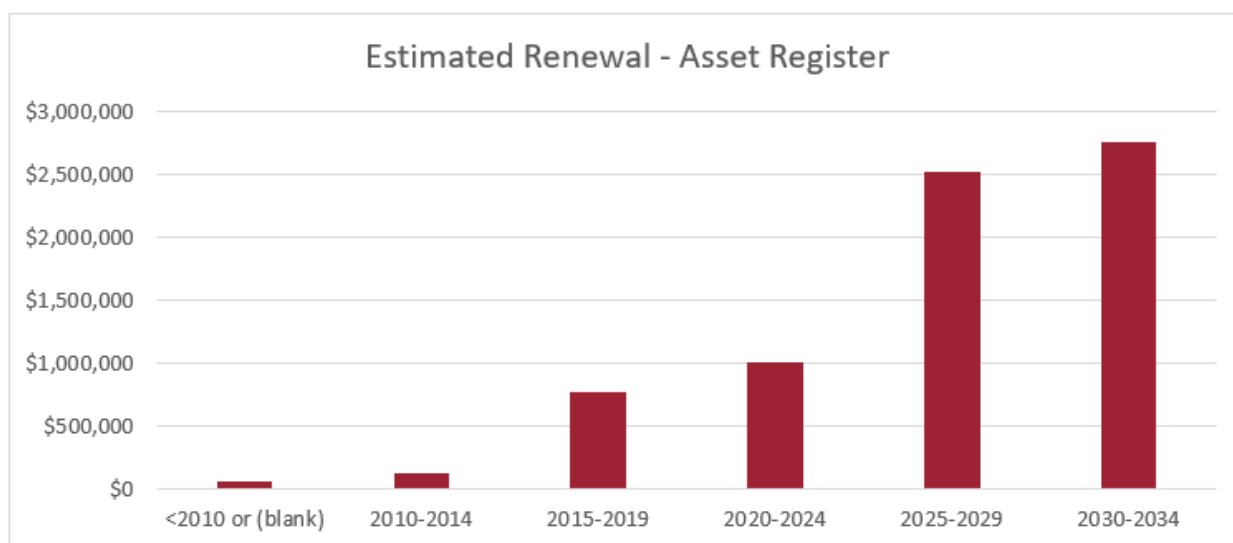
Location	Service Deficiency
Communications	Technological obsolescent communications componentry and infrastructure.
Asset Renewal	Need a strategic approach that matches available resources to ensure infrastructure remains optimal. Improved data will increase certainty.

Capacity Demands	Lack of long-term infrastructure planning. Assets replaced/upgraded based on reactive measures.
People	Single points of failure in people and gaps in our technical capabilities. We will need to actively look at succession planning for future deliverables.
Data Integrity	The asset data base is incomplete and inconsistent. Missing assets and incorrect data make the register problematic to use. It is suspected that the total CRC valuation for the utility is undervalued.
Risk	Limited maturity in risk governance for critical infrastructure. This will need to be addressed to ensure appropriate support for the service.
Pipe Network/s	Historical design deficiencies mean that gravity and pressure networks in certain areas can't be access for appropriate maintenance. This situation is not sustainable and investment is required to systematically improve the system.
Operations & Maintenance	Continuous improvements in programmed O&M will highlight deficiencies between quality expectations and O&M budgets.
Finance	Currently there are no increases in financial allocations to O&M with the construction of new assets. This produces a scenario where existing budgets are forced to be spread over a growing asset base. This could produce downward pressure on O&M increasing the risk of service failure.

5.1.3 Asset condition

Condition is currently monitored via regular and routine inspections. Condition is not currently monitored in a formal way. This has been included into the asset management improvement plan.

The current methodology is to use a linear condition based on the age of the asset compare to the Useful Life. Variations to this methodology can be made by internal specialists that may indicated a faster rate of consumption than indicated.



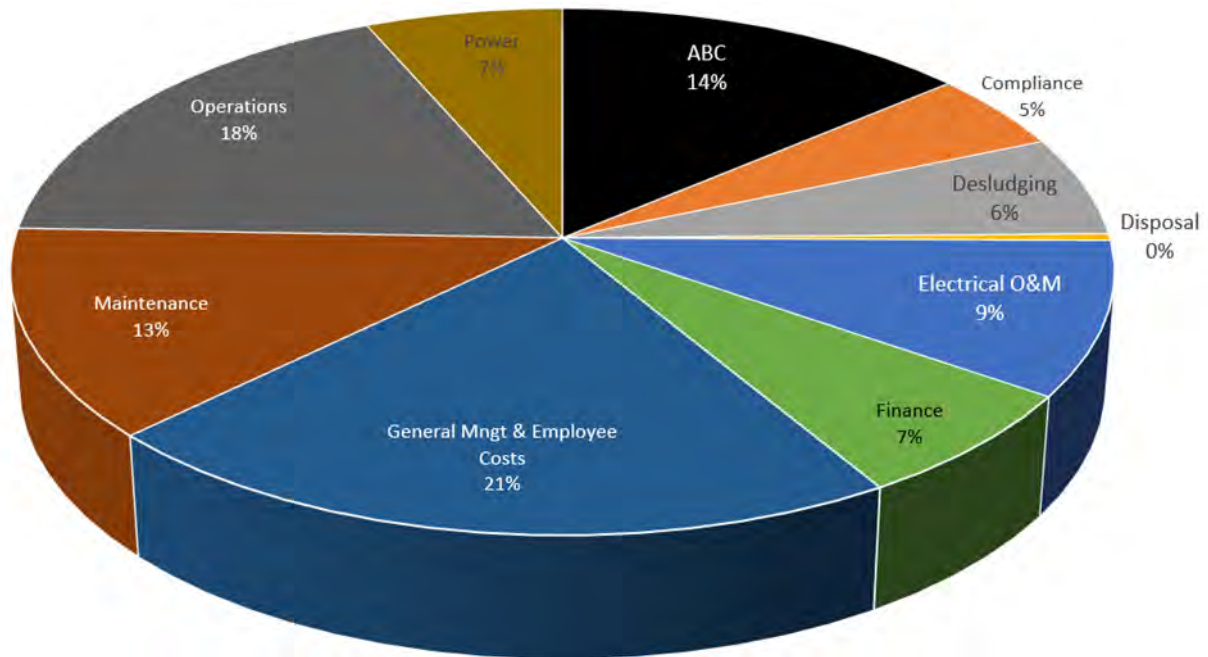
As highlighted within the age profile of assets there is a trending for renewal works in the not too distant future. Developing strategies to be able to deliver this on-ground will be a key requirement moving forward.

As a matter of priority funding has been directed to a schedule program of works, with allocations to assets with shorter useful lives. Establishing a dedicated annual investment while improving underlying data should be considered a pragmatic and logical methodology to manage risks and improvement performance.

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include asset inspections, housekeeping, process diagnostics and utility costs. In addition to these costs the utility is charged back ABC costs for internal services, assets and loan financing. Chart 5.2.1 includes an indication of the utilities cost breakdown. When looking for efficiencies this has been flagged as an opportunity with nearly 14% of total expenditure being indirectly charged by internal services that sit outside the management of the utility.

Chart 5.2.1: Operational & Maintenance Expenditure Breakdown



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.

This includes 24 hour a day, 7 days a week service requirements. Including all contractual and out of hours responsibilities to ensure the essential service remains reliable.

The trend in maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget \$
FY21/22	\$1.27M
FY22/23	\$1.31M
FY23/24	\$1.35M

Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan. The aforementioned assumptions are based on the realisation of currently supported projects that will improve regional communications and monitoring systems. A retraction of this strategic approach would increase the risk to service levels and increase maintenance costs.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement. Daily workgroup meetings across services areas are conducting daily to ensure that communications are escalated immediately and cross-functionally.

Table 5.2.2: Operational Budget Trends

Year	Operational Budget \$
FY21/22	\$3.55M

FY22/23	\$3.38M
FY23/24	\$3.60M

Summary of forecast operations and maintenance costs

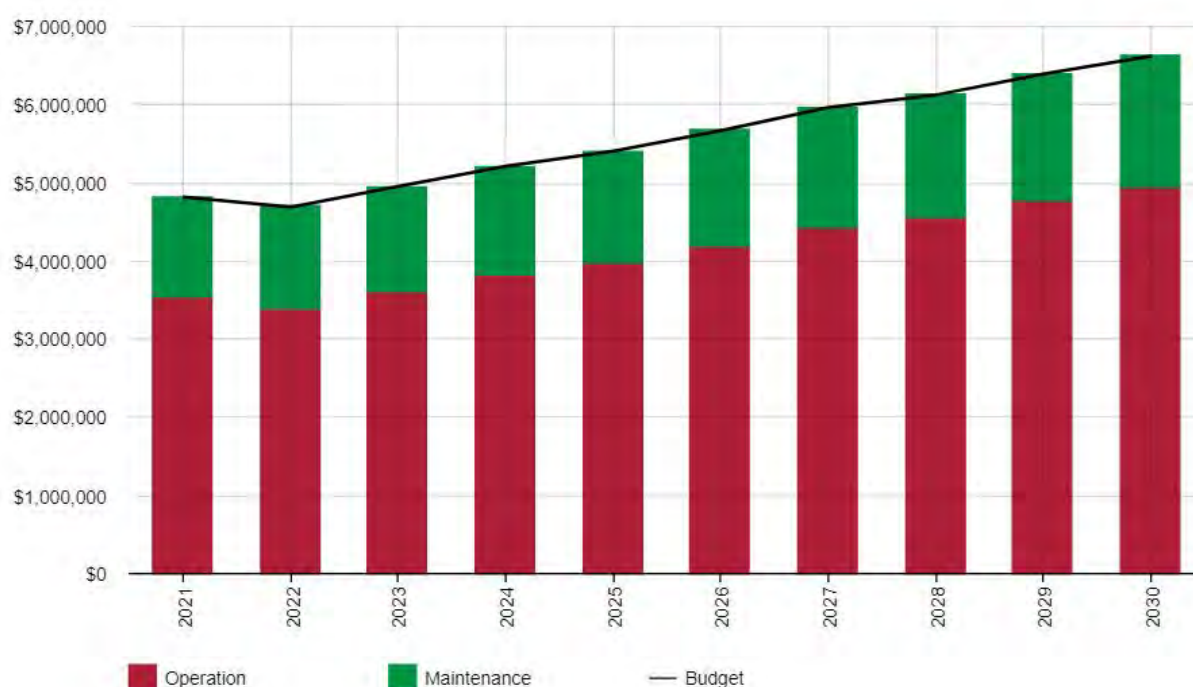
Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease.

Despite recognised gaps within the asset register and total CRC cost the O&M budget is considered adequate and this would simply change the growth percentage attributed to the acquisition of new assets. This is based on the assumption that the O&M costs are a reflection of 'true costs' and not a product of deficiencies in the asset register.

Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary

Total departmental spend for each expense area (Excl. depreciation).



Anticipated spend based on current recognised assets suggests a combined O&M budget increase of \$1.8M by 2030. This does not include consideration of a additional O&M expenditure from the acquisition of new assets.

With a number of strategic improvements suggested within the asset management plan actuals should be monitored closely to ensure that budget implications and resourcing are managed throughout the change. This should be considered annually to reduce risk to the service and organisation.

There has been no recommendation for deferred management due to the high organisational and community risk associated with these essential service assets.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above

restoring an asset to original service potential is considered to be an acquisition resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed in the 2017 financial year.

Table 5.3: Useful Lives of Assets

Asset Type	Existing Useful life	Proposed Useful Life
Power and Process Control	20-35	20
Electrical Cabinets	35	20
Power Control	50	35
Process Control	50	35
Distribution Board	50	35
Flowmeters (to Instrumentation).	25	15
Balance Tank	35	50
Decant Tank	35	50
Reactor Tank	35	50
WAS Tank	50	50
Chlorine Contact Tank	50	50
Septic Tank	30-35	50
Leak Detection Pit	20-25	50
Pump Station Chamber	30-50	50
Storage Tank	30-35	50
Supernatant Tank	50	50
Vacuum Collection Pit	30-50	50
Valve Pit	35	50
Manhole	50	50
Aerator	15-25	15
Air Liquid Separator	25	15
Pump	15-25	15
Solids Separator Screw	5	5
Vacuum Pump	15	20
Actuated Valves (Valves)	20	20
Irrigation Pivot	25	25

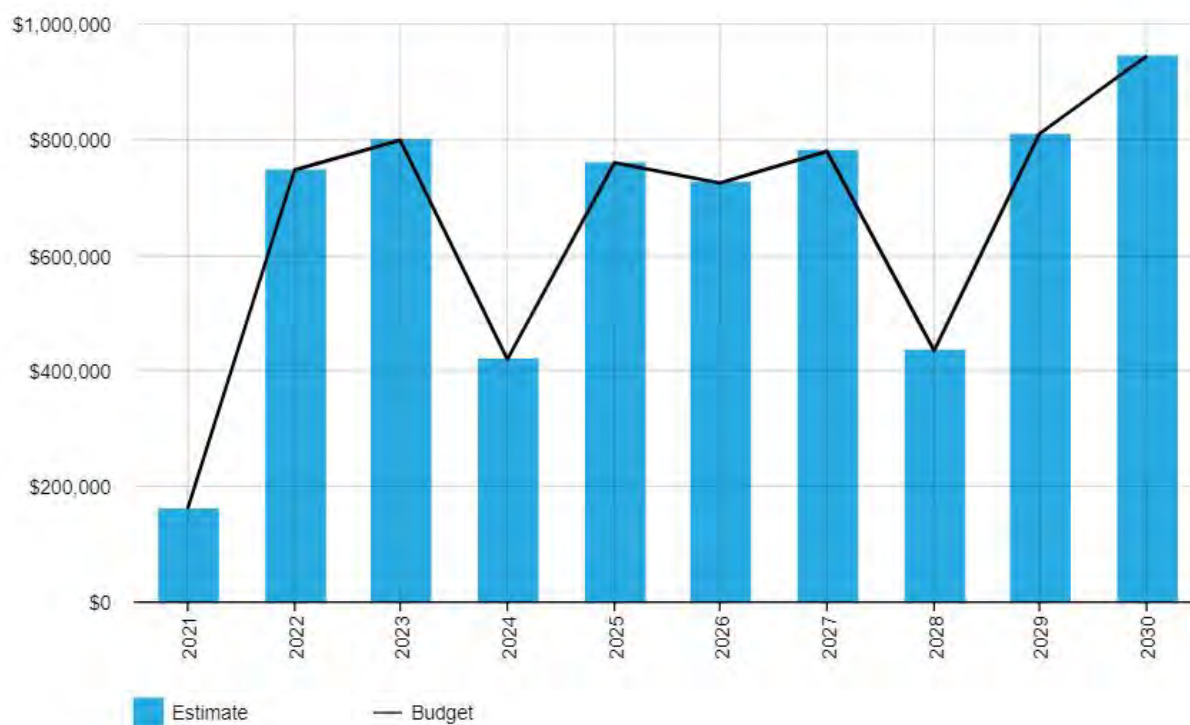
Chlorination Unit	25	25
Odour Filter	40	25
Polymer Mixing Unit	15	20
Solids Separator	20	20
Treated Water Filter	20	20
Vacuum Sewer Collection Tank	35	35
V-Fold Belt Press	25	25
Manifold	35	50
Maintenance Shafts	80	100
Valve	NA	NA
Connection Point	70	100
Flushing Point	80	100
Rising Main	80	50
Vacuum Main	80	50
Gravity Drain	80	100
Gravity Main	80	100
Lagoons	NA	100
Other Assets		
Catwalk	50	50
Fencing	25	25
Lagoon Liner	30	30
Vent Pipe	40	40

The estimates for renewals in this Asset Management Plan were based on an alternate methodology.

5.4 Summary of future renewal costs

The intent is not to defer any renewal moving forward and ensure that a consistent renewal program that complements annual funding and resources. For this reason an alternative renewal model has been established that has a more practical and pragmatic approach to ensuring risk is managed for the service and the organisation.

Figure 5.4.2: Forecast Renewal Costs – Alternate Model



The alternative model dedicates annual funding based on an average annual asset consumption rate. This will ensure that works can be completed as planned. This will allow for scheduled transition as improvements within the sector continue to develop at a rapid pace.

The alternative model also aligns capital works programs with the utility's finite resources. This allows for a more practical and achievable works program.

5.5 Acquisition Plan

Acquisition are new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Council from new development.

5.5.1 Selection criteria

Proposed upgrade of existing assets, and new assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the utility's needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria is detailed in Table 5.5.1.

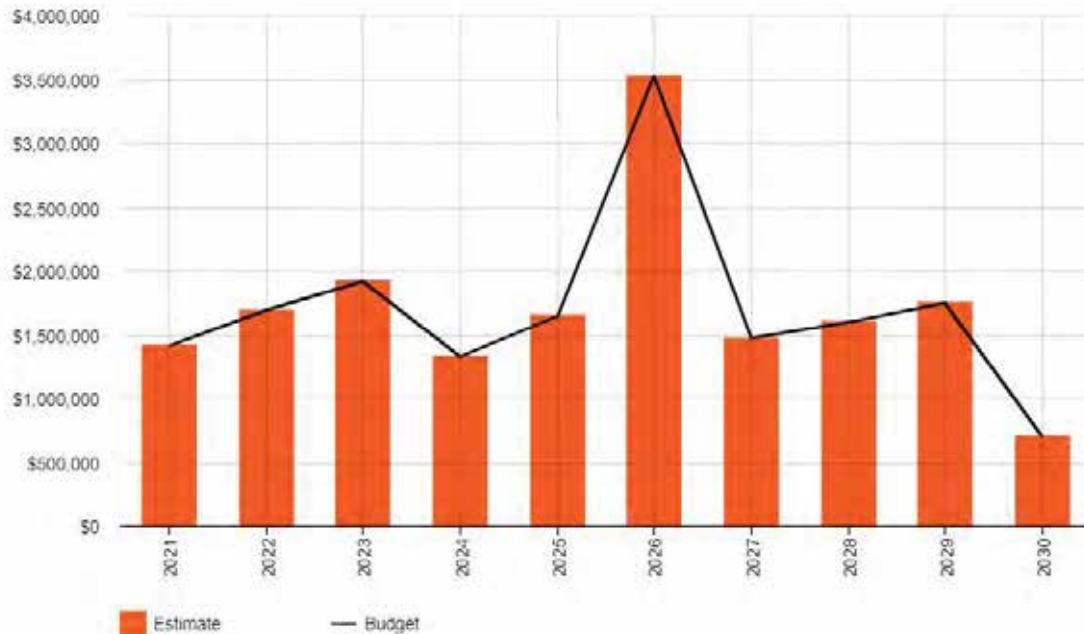
Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Ranking
Compliance & Capacity Issues	1
New development	1
Technical Obsolescence	1
Optimisation Opportunities	2
Climate Adaptation	3

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised /summarised in Figure 5.5.1 and shown relative to the proposed acquisition budget.

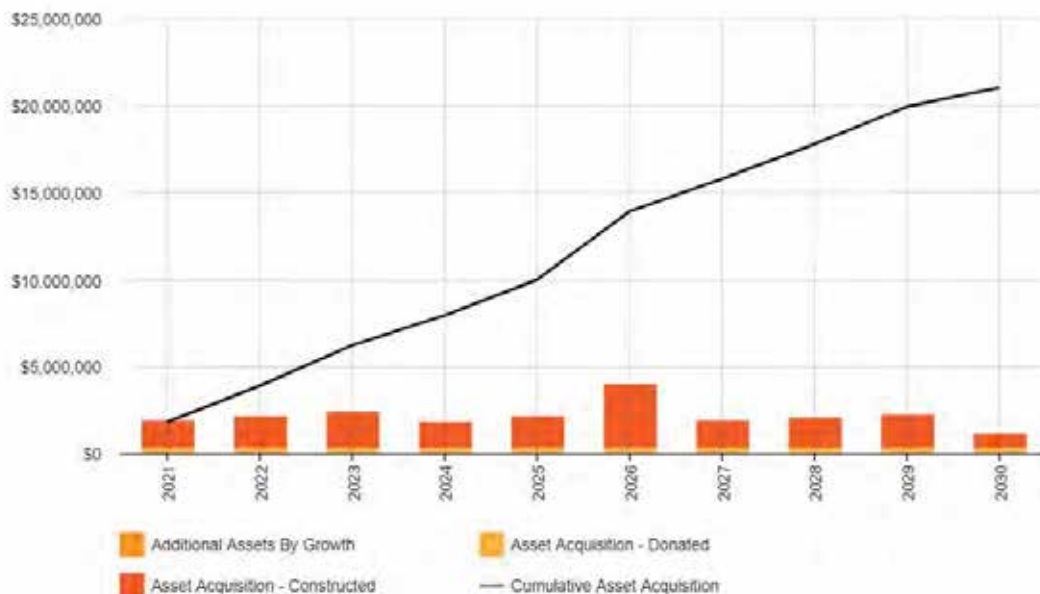
Figure 5.5.1: Acquisition (Constructed) Summary



The above chart does not include the 2021 integration of the Coorong Quays assets. Once ownership transition occurs in June 2021 the Council will need to assess and integrate these assets into the utility's asset management systems.

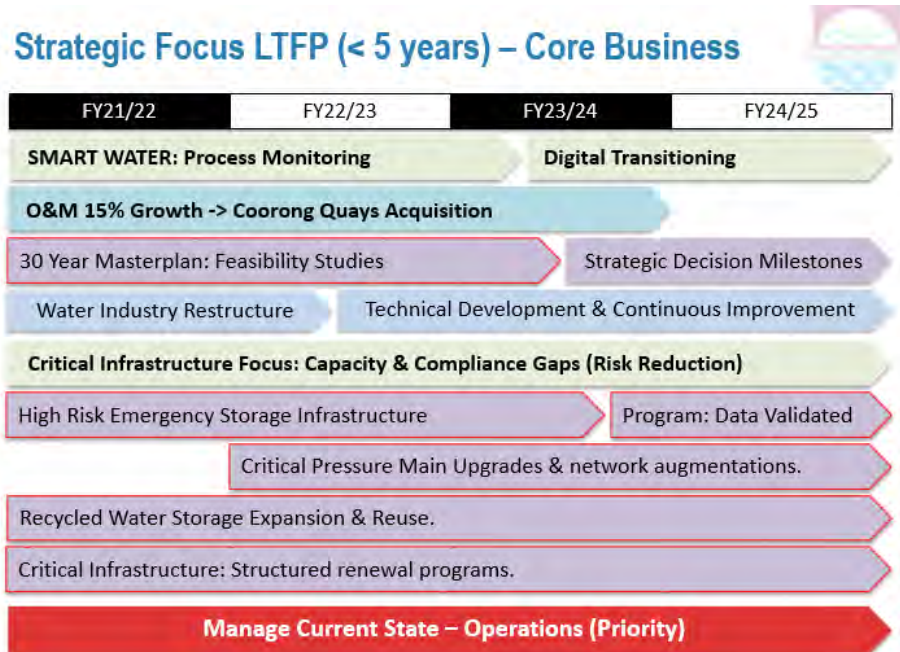
When an Entity commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of an asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



With the development of improved network modelling the infrastructure planning process highlighted numerous capacity and compliance issues that required immediate attention. Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan due to the high risk nature of this service and infrastructure. A high level wave plans summary has been included below to highlight the short term deliverables (<5 years).

Additionally new assets are typically driven by regional growth and development within the region. This can be sporadic and difficult to predict. To ensure information is credible regarding anticipated acquisitions a historical 7 year average has been established (\$0.4M p.a.). This is a marked improvement from historical planning when no allocations were forecasted for growth in this area.



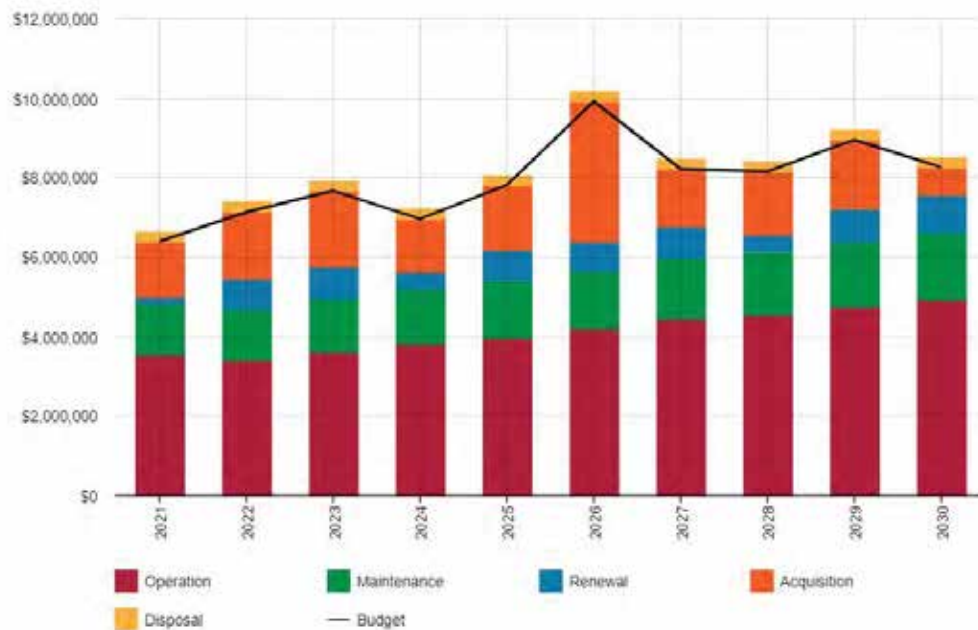
The above approach aligns with the strategic execution model to focus on core infrastructure and the effective management of the utility in the short to medium term. It is expected that more expansive endeavours will be explored for 10-30 year infrastructure planning as part of the wastewater 30 year Masterplan process.

Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.5.3. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.5.3: Lifecycle Summary - Asset Register



As previously mentioned the alternative model is considered the lowest risk approach for the short-term. This ensures consistent investment is made across high risk assets.

Increases in O&M costs have been based on historical costs and 1% attributed to regional growth impacts. This is considered the most credible approach as it uses historical data as a benchmark for future acquisitions and expected increases in managing those assets.

The budget has been determined based on current day dollars and allocations. Based on the lifecycle analysis it is recommended that a 1.5% p.a. increase above CPI & growth is factored into the budget to ensure ongoing sustainability.

There are also a number of strategic initiatives within the improvement plan which will impact the lifecycle and budgets for this asset class. It is an expectation of this plan that the impacts of those initiatives will be assessed as part of that process. This will ensure that projects and advancement can be sustainably funded. The Asset Management Plan should be updated annually to ensure timely changes can be made to support the service.

5.6 Disposal Plan

Assets are disposed of at the end of life. There are no disposal plans that exist presently but the AMP has used historical averages to assign an estimated cost.

6.0 RISK MANAGEMENT PLANNING

Alexandrina Council is committed to an integrated approach to risk management to protect its workers, assets, liabilities and community against potential exposures, to minimise uncertainty in achieving its objectives, and to maximise opportunities. Risk is inherent in the provision of crucial functions and services across the Council. The understanding and management of risk will provide greater certainty and security for stakeholders, workers and the community. Council will be better informed, more decisive and move with increased confidence to the achievement of its objectives.

The risk management process is not an isolated function and should be integrated as part of good management practice. Effective identification, assessment and evaluation of defined risks are critical to Council achieving its strategic objectives and meeting overall community expectations.

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'⁴.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

Tolerance

Not all risk types for Council are the same in terms of their acceptability. Once a risk has been analysed, it needs to be compared to Council's tolerance levels. Tolerance can be described as the amount of uncertainty that Council is prepared to accept, either in total or as it relates to a specific business unit, risk category or specific initiative.

If the assessed risk level is above the tolerable level for that category of risk then treatment may be required. If it is equal to, or below, the tolerable level for that category of risk then the risk can be accepted (after further controls are discussed). These limits are best set in quantitative terms that can be communicated to those responsible for them and then monitored for compliance.

Alexandrina Council's risk management framework defines the organisational risk appetite and tolerance. The framework focuses on the organisational risk tolerance and includes consequence tables for risks across, financial, infrastructure, people, reputational, environmental, regulatory and service delivery.

The latest copy of the Council Risk Framework can be located by [clicking here](#).

The current framework (2020) has the Council Risk Tolerance listed as;

Category	Tolerance
Financial/Infrastructure	Medium
People	Low
Reputation	Low
Environment	Medium
Legal/Regulatory	Low
Service Delivery	Medium

⁴ ISO 31000:2009, p 2

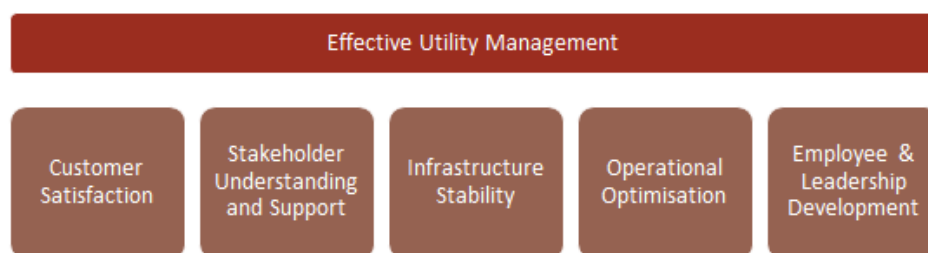
Risk Identification

The aim of risk identification is to develop an inclusive list of events that may occur and, if they do, are likely to have an impact on the achievement of Council's objectives, as stated in its Strategic Management Plans. Council identifies, assesses and treats risk in the following three groups:

Strategic	Risks associated with high level Goals that align to Councils Strategic, Annual and Business Plans. Strategic risks may affect the achievement of Council's corporate objectives
Operational	Risks associated with departmental functions and daily operations to deliver essential services.
Project	Risks associated with Project Management - that will affect milestones connected to delivering a specific project.

The delivery of the Infrastructure and Asset Management Plan (IAMP) and the Long-term financial Plan (LTFP) is considered one of Council's Strategic deliverables.

To support the above initiatives an internal service review looked at prioritising strategic focus areas as part of the assets management plan review. This strategic review was covered in Section 3 with business functions being assessed for maturity and service risk moving forward. The following areas were determined as the critical short-term areas for improvement.

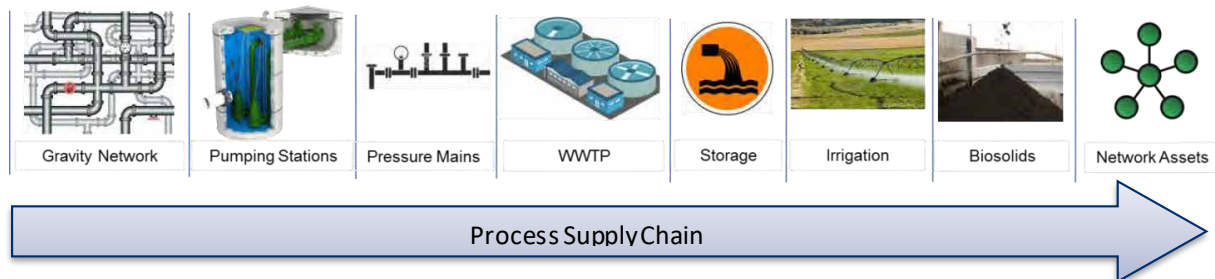


This risk approach has been developed to ensure that Project and Operational deliveries are structure under a strategic risk framework. This is considered integral to ensure that resources are focused on continuous improvements that will reduce the holistic risk to the service and the organisation

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

The water utility is considered an essential service and is part of a water supply chain that includes complex and integrated critical assets. The basic model below highlights how each component could create upstream and downstream risk on the process.



The below table includes grouped functional assets that contain complex and numerous single points of failure. Listing all componentry within the asset management plan is simply not practical but the complexity and risk should be communicated and understood by decision makers.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact**
Wastewater Pump stations	Physical failure, essential service interruptions, inadequate capacity.	Loss of essential service to section of the community.
Wastewater Treatment Facilities	Physical failure, essential service interruption/s, inadequate capacity.	Loss of essential service to an entire township/s.
Treated Water Storage	Physical Failure, inadequate capacity.	Environmental and Public Health impacts. Could have commercial and economic impact for customers.
Irrigation Infrastructure	Physical failure, inadequate capacity.	Could have commercial and economic impact for customers. Storage capacity issues.
Pressure Networks	Physical Failure, inadequate capacity.	Loss of essential service to section of the community.
Gravity Network	Physical Failure, inadequate capacity.	Loss of essential service to section of the community.
Communications Infrastructure	Physical failure, loss of essential service.	Environmental and Public Health impacts. Loss of essential service to section of the community.

Critical Asset(s)	Failure Mode	Impact**
Human Resources	Loss of capability, inadequate capacity.	Holistic impact on service and project delivery. Including potential to meet compliance expectations.
Software	Technical Obsolescence, loss of capability.	Holistic impact on service and project delivery. Including potential to meet compliance expectations.
Plant (mobile)	Physical failure, inadequate capacity.	Holistic impact on service and resilience.

** Loss of the essential service can be considered a potential catastrophic risk to community, reputation, financial, environmental and public health.

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

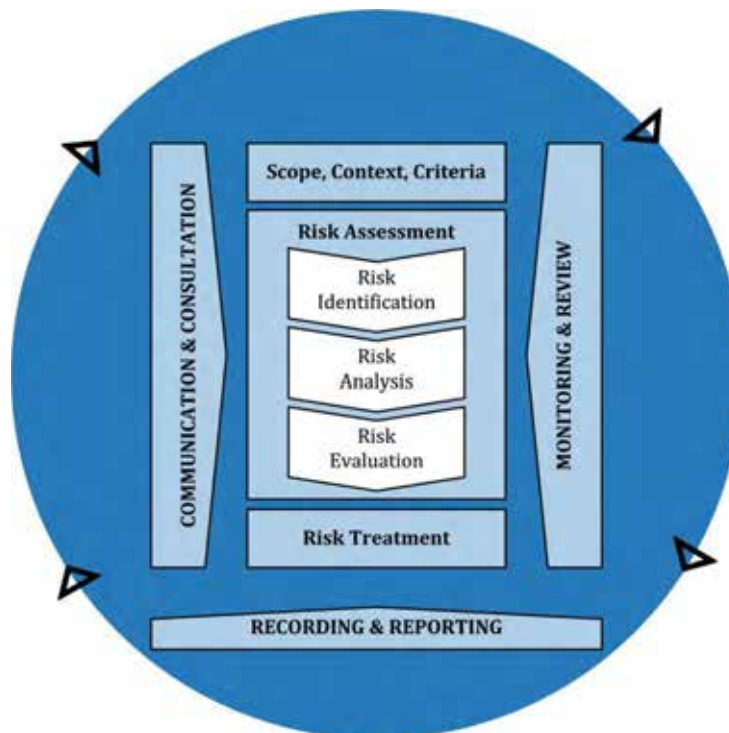


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks⁵ associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Extreme' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to Executives and the Council.

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *
Infrastructure Failure	<p>Failure of infrastructure due to physical or loss of essential service supply.</p> <p>Regional or localised loss of essential service.</p> <p>Overflows impacting environmental and public health.</p> <p>Potential for significant financial loss.</p> <p>Potential for significant impact on reputation.</p>	Extreme	<p>Renewal of communications infrastructure to an industry level standard.</p> <p>Inventory management and asset redundancy (spares).</p> <p>Improved governance via contingency planning and BCP assessments.</p> <p>Strategic advancement in analytics and digital transformation.</p> <p>Integration of sensory instrumentation</p> <p>Development of network sensory and instrumentation asset grouping to support resourcing.</p>	High
Communications & Monitoring Infrastructure	<p>Technical Obsolescence of Communications & Monitoring Infrastructure.</p> <p>Intermittent and unreliable communications & monitoring of high risk processes.</p>	Extreme	<p>Renewal of communications infrastructure to an industry level standard.</p> <p>Improved governance via contingency planning and BCP assessments.</p>	High

⁵ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

	<p>Regional or localised loss of essential service.</p> <p>Overflows impacting environmental and public health.</p> <p>Potential for significant financial loss.</p> <p>Potential for significant impact on reputation.</p>			
Service Affordability	<p>Reduced asset life due to poor construction and/or installation.</p> <p>Asset planning fails to predict demand requirements.</p> <p>Assets not maintained to maximise asset life.</p> <p>Exponential increases to O&M costs due to increases in reactive workloads.</p> <p>Potential for significant impact on reputation due to customer dissatisfaction.</p>	Extreme	<p>Essential service policy that strategically focuses on customer value and long-term sustainability.</p> <p>Long-term demand projections through regional Masterplan.</p> <p>Review service levels to resource appropriate levels of O&M.</p> <p>Increased optimisation opportunities via technical integration strategies.</p>	High
Staff Health & Safety (Service impact)	<p>Death and/or serious injury. 24/7 regional operational requirements with isolated work responsibilities at all hours.</p> <p>Frequent isolated work around high risk processes and assets.</p>	Extreme	<p>Renewal of communications infrastructure to an industry level standard. Remote access will reduce frequency of onsite inspections significantly.</p> <p>Improved isolated work systems and communications.</p>	High

Inadequate capacity throughout wastewater network (All Assets).	<p>Overflows impacting environmental and public health.</p> <p>Increase costs due to corrective actions.</p> <p>Potential for significant financial loss.</p> <p>Potential for significant impact on reputation.</p>	Extreme	<p>Develop long-term infrastructure Masterplan.</p> <p>Implement industry standard monitoring infrastructure.</p>	Moderate
Product Quality	<p>Treated water in not compliant with customer expectations, public health and environmental needs.</p> <p>Commercial impact for end users with water supply being unreliable.</p> <p>Climate change impacting influent water quality to point that it is no longer fit-for-purpose (i.e. salinity).</p>	High	<p>Improve internal monitoring program via Smart Water Project.</p> <p>Public Health KPIs are the primary focus. Operational plant monitoring and environmental KPIs not well understood and have not been implemented. Recruit Technical Officer to transition to full compliance.</p> <p>Strategic advancement in analytics and digital transformation. Integration of sensory instrumentation.</p> <p>Scope & delivery internal water testing laboratory.</p>	Moderate
<p>Note * The residual risk is the risk remaining after the selected risk treatment plan is implemented.</p> <p>** Loss of an essential service can be considered extreme for reputation, financial, community, environmental & public health.</p>				

It is important to highlight that many risks remain high for the industry even if the treatment plans were supported. This outcome is simply a product of the risk matrix and its endemic limitations. Risks remain high purely based on the consequence remaining constant. There would be significant decrease in the likelihood of this event occurring but even rare events register high if the consequence is catastrophic.

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service.

Resilience is built on aspects such as response and recovery planning, financial capacity, climate change and crisis leadership.

Our current measure of resilience is shown in Table 6.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 6.3: Resilience

Threat / Hazard	Current Resilience Approach
Infrastructure failure	Basic system callout systems, 24/7 staff member for inspection, generators, emergency plant and equipment, spares/inventory.
Communications Failure	No resilience with current technology.
Staff member seriously injured or killed.	No resilience approach established.
Service Affordability	Long-term infrastructure and financial planning, legislated strategic asset management planning. Changes need to occur in asset structure and proactive planning measures at a regional scale.
Climate Change impacts	No current resilience for extreme events and impacts.
Product Quality	Basic preventative maintenance and operational checks. No 'live' monitoring to predict quality impacts. Lag indicators dictate non-compliance.

There is a decent amount of resilience for managing event based issues regarding plant and people. However there is little resilience for preventative monitoring and/or communications. This creates a very reactive environment where event management becomes a constant requirement. This exposes the business to high infrastructure, people and service risks.

Organisationally there is low maturity in Business Continuity Planning within a critical infrastructure environment. This will need to be addressed into the future to improve the holistic resilience of the utility.

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we can do

If highlighted treatment strategies are not supported the organisation will have to accept an extreme risk tolerance. Improvements options include but are not limited to:

- The renewal of technically obsolescent communications infrastructure.
- Regional infrastructure planning over 30 year timeframes with the development of a regional Masterplan.

- Reducing risk to community, environment and organisation through process and infrastructure monitoring.
- Decrease risk to staff by reducing isolated work and callouts.
- Improve infrastructure capacity assessments based on actual data.
- Improve product and water quality treatment inconsistencies and non-compliance.
- Develop strategies to adapt to climate change.
- Improved governance of utility regarding organisational change implications.
- Inability to develop staff to industry standards and expectations.
- Optimise aging assets and reduce costs through increase useful lives and asset rationalisation opportunities.
- Improve business continuity and resilience with plans developed for specifically for critical infrastructure and services.
- Reduce governance inconsistency between Local Government and the Water Industry.

6.4.2 Service trade-off

As an essential service there is no trade-off regarding service failure. If the above strategies are not supported budgets that have O&M implications will need to be adjusted to maintain the current minimum standards.

If a reactive strategy is maintained these costs will be realised as actual events and budgets will be impacted accordingly.

The consequence of this with aging infrastructure could mean staff and resources are deferred to event recovery rather than existing preventative maintenance and operational inspections. This could increase the likelihood of process and infrastructure failure.

6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Increased risk to community and organisation due to overflows.
- Cost implications to customers based on reactive capital planning and corrective actions.
- Regulatory and litigation risk with treatment inconsistencies and process failures.
- Maintain current high risk to staff with excessive out-of-hours and isolated work demands.
- Increase likelihood of acute O&M budget blow-outs due to event based corrective actions.
- Increase long-term infrastructure investment due to reduction in asset useful lives.
- Staff not supported and developed to an industry standard.
- Low risk Local Government administrative tasks continue to be prioritised above high Water Industry risk.

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

7.0 FINANCIAL SUMMARY

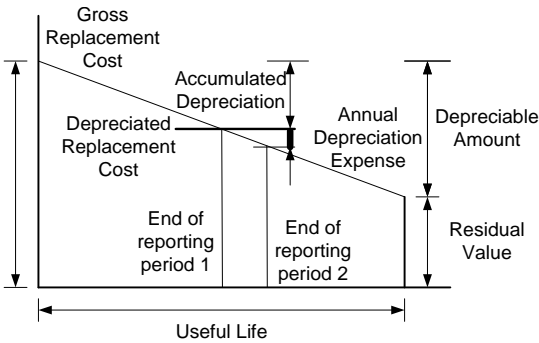
This section contains the financial requirements resulting from the information presented in the previous sections of this Asset Management Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Statements and Projections

7.1.1 Asset valuations

The best available estimate of the value of assets included in this Asset Management Plan are shown below. The assets are valued based on fair value for replacement using the alternative renewal model and to meet the current service demands.

Current (Gross) Replacement Cost	\$65.3 M
Depreciable Amount	\$65.3M
Depreciated Replacement Cost ⁶	\$39.9M
Depreciation	\$1.2M



7.1.2 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio⁷ 100%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 100% of the funds required for the optimal renewal of assets.

The budget for this asset management plan assumes renewal will be supported based on historical and projected investment. This assumption will need to be considered along with the entire Wastewater Infrastructure Asset Management plan. This will ensure that investment is made in the areas which will provide the greatest risk reduction and/or service benefit.

Medium term – 10 year financial planning period

This Asset Management Plan identifies the forecast operations, maintenance and renewal costs 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.

This forecast work can be compared to the proposed budget over the 10 year period to identify any funding shortfall.

⁶ Also reported as Written Down Value, Carrying or Net Book Value.
⁷ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

The forecast operations, maintenance and capital costs over the 10 year planning period is \$96.7M. The proposed (budget) operations, maintenance and capital funding is to be 100% allocated as highlighted in this plan.

No proportional increase per dollar of asset for new capital has been included in this plan. This should be considered a risk to ongoing O&M and monitored closely on an annual basis.

7.1.3 Forecast Costs (outlays) for the long-term financial plan

Chart 7.1.3 shows the forecast costs (outlays) for the 10 year long-term financial plan using an alternative renewal model and assuming existing budgets are supported.

Forecast costs are shown in 20/21 financial year dollar values.

Table 7.1.3: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year (FY Start)	Capital Renewal	Capital Acquisition	Operation cost of existing assets	Maintenance cost of existing assets	Operation costs of new assets	Maintenance cost of new assets	Disposal of surplus assets	Budget (excl. dep.)
2021	\$ 162,000	\$ 1,415,000	\$ 3,547,747	\$ 1,273,253	\$ -	\$ -	\$ 250,000	\$ 6,398,000
2022	\$ 748,000	\$ 1,695,000	\$ 3,384,369	\$ 1,307,631	\$ -	\$ -	\$ 250,000	\$ 7,135,000
2023	\$ 799,000	\$ 1,920,000	\$ 3,605,832	\$ 1,348,168	\$ -	\$ -	\$ 250,000	\$ 7,673,000
2024	\$ 420,000	\$ 1,330,000	\$ 3,822,691	\$ 1,391,309	\$ -	\$ -	\$ 250,000	\$ 6,964,000
2025	\$ 760,000	\$ 1,650,000	\$ 3,971,169	\$ 1,435,831	\$ -	\$ -	\$ 250,000	\$ 7,817,000
2026	\$ 725,000	\$ 3,530,000	\$ 4,184,223	\$ 1,481,777	\$ -	\$ -	\$ 250,000	\$ 9,921,000
2027	\$ 780,000	\$ 1,475,000	\$ 4,437,806	\$ 1,529,194	\$ -	\$ -	\$ 250,000	\$ 8,222,000
2028	\$ 435,000	\$ 1,600,000	\$ 4,548,871	\$ 1,578,129	\$ -	\$ -	\$ 250,000	\$ 8,162,000
2029	\$ 810,000	\$ 1,750,000	\$ 4,764,371	\$ 1,628,629	\$ -	\$ -	\$ 250,000	\$ 8,953,000
2030	\$ 945,000	\$ 700,000	\$ 4,942,255	\$ 1,680,745	\$ -	\$ -	\$ 250,000	\$ 8,268,000
Total	\$ 6,584,000	\$ 17,065,000	\$ 41,209,334	\$ 14,654,666	\$ -	\$ -	\$ 2,500,000	\$ 79,513,000

7.2 Funding Strategy

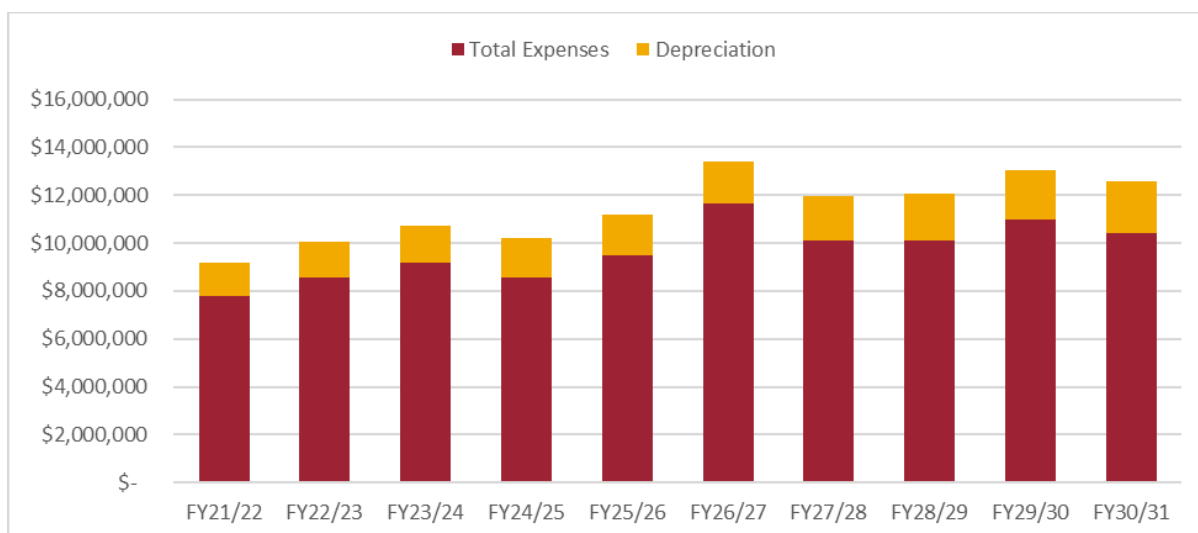
The proposed funding for assets is outlined in the entity's budget and LTFP.

The financial strategy of the entity determines how funding will be provided, whereas the Asset Management Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

As a regulated essential service the Long-term financial plan is funded by revenue generated primarily from users of the service. Ultimately the business unit is a non-for-profit utility that must legally ensure full cost recovery for the service.

Chart 7.2.1 depicts total outgoing expenditure including depreciation over the term of the LTFP. This indicates a total expenditure of \$96.7M.

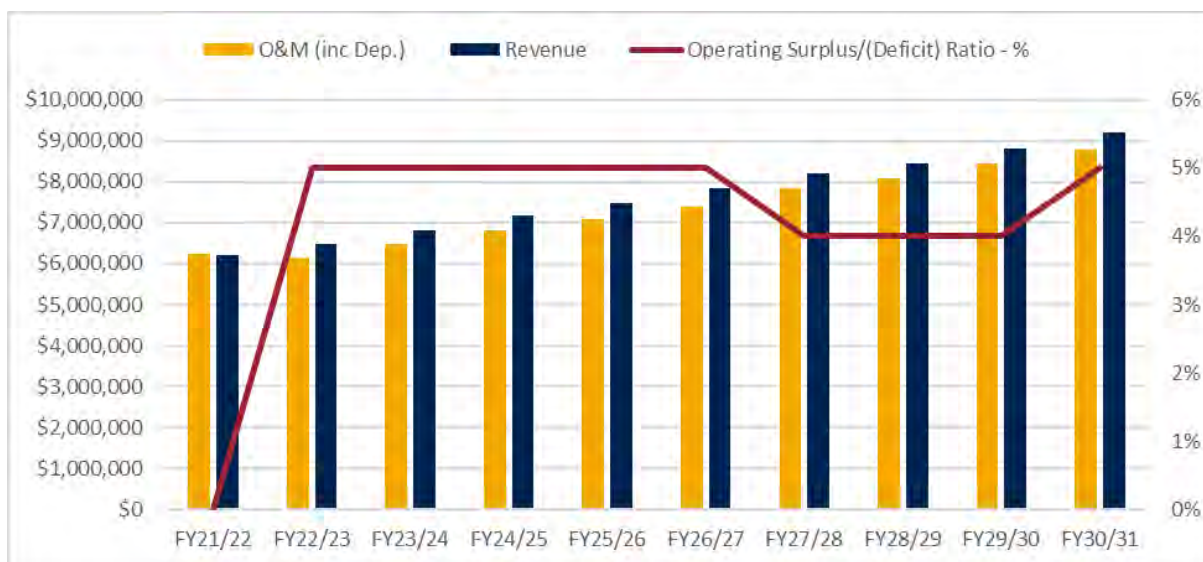
Chart 7.2.1: Total Expenditure including depreciation.



The current funding strategy is for a sustainability percentage of 1.5% above CPI and 1% regional growth to be included to revenue generation. This will allow for a sustained operating Surplus/(Deficit) Ratio at approximately 5% for the term of the plan. This will allow for financial risk reduction over the medium term to due to the acute change and critical nature of the utility infrastructure and O&M environment.

The first year of the plan will register a slight deficit with additional allocation of funds to manage acute issues associated with securing a sustainable recycled water disposal path.

Chart 7.2.2: Funding Strategy & Operating Surplus/(Deficit) Ratio.



7.3 Valuation Forecasts

Asset values are forecast to increase as additional assets are added from service.

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts. As highlighted within the above lifecycle forecast there has been no provision for additional O&M costs associated with new assets. This should be considered a high risk to the service and monitored annually to ensure ongoing support.

It is expected that significant increases in asset valuation will occur with the recognition of existing assets and the acquisition of new asset types as asset data is improved.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this Asset Management Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this Asset Management Plan are:

- Existing budgets will continue to be supported.
- That this plan will be integrated with holistic planning across the organisation.
- There are no major acquisitions and/or projects that will impact resourcing.
- That historical data represents sound predictions for future events.
- That existing resourcing levels can deliver the improvement plans.
- That internal services develop an improved partnership model.
- The Local Government compliance does not supersede Water Industry compliance.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale⁸ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Highly reliable	Data based on sound records, procedures, investigations and analysis, documented properly and agreed 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 7.5.2.

⁸ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Uncertain	Demand is generally driven by development and/or regulatory drivers. This can be reactive.
Growth projections	Uncertain	No regional forecasts with infrastructure impacts undertaken. This will need to be supported into the future.
Acquisition forecast	Reliable	This is demand and growth outcome. More rigour in modelling critical asset issues. The infrastructure planning is certain but can be impacted by unknown factors.
Operation forecast	Uncertain	Uncertainty in other areas has created uncertainty in O&M budgets. Improvements would expect this area to be maintained or decrease into the future.
Maintenance forecast	Uncertain	With uncertainty in asset register data reactive maintenance can occur. Historically this has been supported via acute increases in budget. No consideration for lifecycle costs of new assets places existing budget estimates at risk.
Renewal forecast - Asset values	Reliable	Recent and historical 'At Cost' and standardisation allow for a level of rigour in asset valuations.
- Asset useful lives	Uncertain	Some asset useful lives are high for technical infrastructure. This has been addressed in the alternative renewal model but there is still uncertainty that Useful Lives will be realised.
- Condition modelling	Uncertain	This is based on pragmatic methods and internal capability. Failure can still occur without any knowledge or predictive ability.
Disposal forecast	Reliable	This would be an output of a demand or growth impact. Applying historical averages provides improved certainty.

The estimated confidence level for and reliability of data used in this AM Plan is considered to be uncertain. This has been addressed and is a major driver for the below Improvement Plan.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices⁹

8.1.1 Accounting and financial data sources

This Asset Management Plan utilises accounting and financial data. The source of the data is from the Council Long-term financial plan, historical expenses with the Corporate System and the financials within the company asset register MyData.

8.1.2 Asset management data sources

This Asset Management Plan also utilises asset management data. The source of the data is from the Company asset register MyData. Alternative plans have been established based on anecdotal evidence from experienced and longstanding industry professionals.

8.2 Improvement Plan

It is important that an entity recognise areas of their Asset Management Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this Asset Management Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Timeline
1	Asset recognition and renewal of regional communications and monitoring assets.	Water Project Officer	2020-2022
2	Infrastructure resilience with construction of critical spares for rapid installations.	Electrical Engineer	2021 - On Approval
3	Development of a sector specific Business Continuity Plan and Risk Management Plan.	Governance	2022 - On Approval
4	Support for technical integration and digital transformation (instrumentation & analytics)	Water Manager	Ongoing
5	Wastewater business unit Policy development.	Governance	2021-22
6	Demand & Growth Planning Improvement via 30 Year Wastewater Infrastructure Masterplan	Water Manager	2020/21
7	Active monitoring of isolated and out-of-hours workers.	Water Operations Supervisor	2020 -21
8	Development of Technical Standards documentation.	Water Infrastructure Coordinator	2021
9	Restructure and audit assets to improve data integrity and planning integrity.	Water Infrastructure Coordinator	Ongoing
10	Installation of critical infrastructure to meet current capacity & compliance standards.	Water Infrastructure Coordinator	2021-2030
11	Utility governance review.	General Manager Wellbeing	2020-21

⁹ ISO 55000 Refers to this the Asset Management System

8.3 Monitoring and Review Procedures

This Asset Management Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, upgrade/new and asset disposal costs and proposed budgets. These forecast costs and proposed budget will be incorporated into the Long-Term Financial Plan.

The AM Plan has a maximum life of 4 years and is due for complete revision and updating within 2 years of each Council election. However it is expected that key performance information will be reviewed annually and adjusted accordingly based on the support for improvement plans and the subsequent impact on asset management moving forward.

8.4 Performance Measures

The effectiveness of this Asset Management Plan can be measured in the following ways:

- The degree to which the required forecast costs identified in this Asset Management Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate 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, risks and residual risks are incorporated into the Strategic Plan and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 100%).

9.0 REFERENCES

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