UPPER HUNTER SHIRE COUNCIL

Asset Management Plan

WATER

2025

Date adopted by Council	25 June 2025
Minute number	25/139
CM Ref	CD-26/25
Due for review	30 June 2026
Related documents	Asset Management Policy Asset Management Strategy Asset Management Plans Delivery Program and Operational Plan Community Strategic Plan 2032 Integrated Planning and Reporting requirements
Responsible officer	Manager Strategic Assets
Department/Section	Strategic Assets
Category	Financial & Asset Management
Community Strategic Plan Priority	**Goal 4** Quality Infrastructure
	SO 4.3 Provide safe and reliable water and sewerage services to meet the demands of current and future generations

Contents

1 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

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 10 year planning period. The AM Plan will link to a Long-Term Financial Plan which typically considers a 10 year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provide the water network. The primary objective for managing water services infrastructure is to provide safe and reliable water and sewerage services for the local community, businesses, industries, and visitors, both within the Council region and neighbouring areas.

The Water network comprises:

- Pipes
- Treatment Plants
- Reservoirs
- Pump Stations
- Bores/Wells
- Other infrastructure

The above infrastructure assets have replacement value estimated at $145,760,000.

1.3 Levels of Service

The allocation in the planned budget is insufficient to continue providing existing services at current levels for the planning period. When compared to depreciation, this plan will show a lower than 100% renewal ratio, which is a result of the conflict between asset management planning, and the prevailing accounting standards.

The main service consequences of the Planned Budget are:

- Reliant on grant funding to deliver new and upgraded water infrastructure
- Reliant on grant funding to deliver renewal and replacement water infrastructure assets
- Increased maintenance costs due to unfunded preventative practices
- Increased capital and renewal costs due to market demands
- Shortened asset lives due to Climate Change impacts (refer to Section 5.5)

1.4 Future Demand

The factors influencing future demand and the impacts they have on service delivery are created by:

- Increase in community expectations
- Changes in Technology
- Climate Change

These demands will be approached using a combination of managing existing assets, upgrading 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.

- Communication of services Council can sustainably deliver to community
- Implementation of changes to be assessed on merit and applied where a reduction in construction and maintenance costs, improved efficiency, quality and WH&S can be achieved
- Significant spending required to maintain access and condition (though generally funded)

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 water asset class is estimated as $6,466,031 on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is $4,663,961 on average per year as per the Long-Term Financial plan or Planned Budget. This is 72.13% 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 depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

Forecast Lifecycle Costs and Planned Budgets

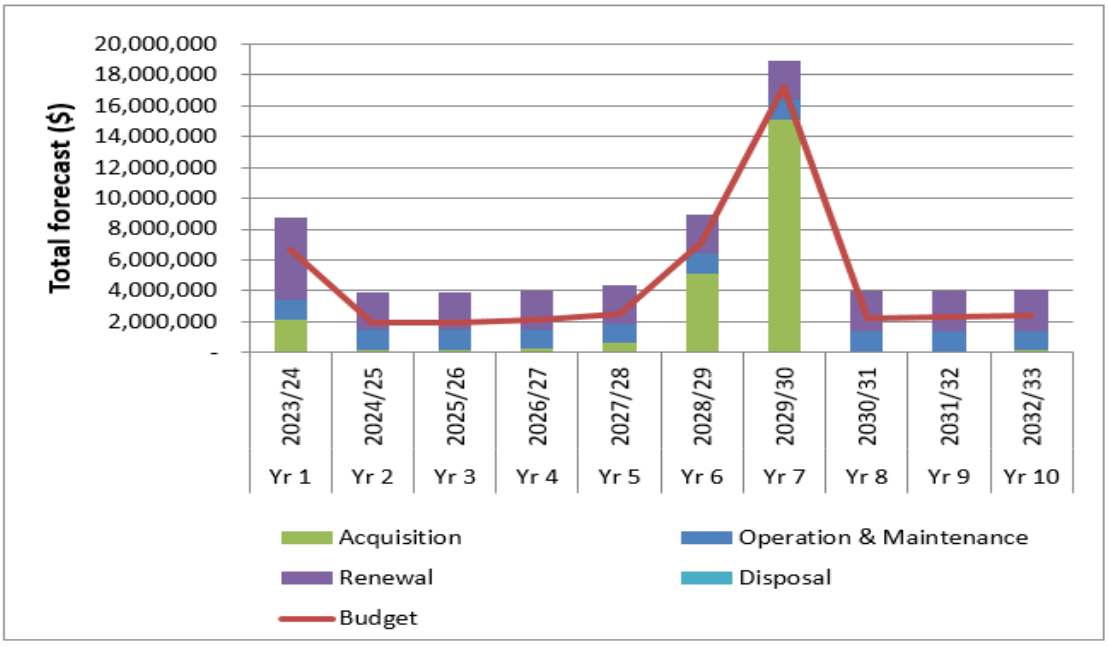


Figure Values are in current dollars.

We plan to provide water infrastructure services for the following:

- Operation, maintenance, renewal and acquisition of water infrastructure assets to meet service levels set by Upper Hunter Shire in annual budgets.

1.6.2 What we cannot do

We currently do not allocate enough budget to sustain these services at the proposed standard or to provide all new services being sought. Works and services that cannot be provided under present funding levels are:

- Provision of town water supply to any other village in Council's Local Government area at this stage
- Provision of town water supply to any currently rural zoned land
- Provision of town water supply to areas outside the supply areas mapped in the Development Servicing Plans

1.6.3 Managing the Risks

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

The main risk consequences are:

- Impacts from unpredictable external forces, such as climate change and drought
- Litigation from property damage
- Litigation from public injury/fatality

We will endeavour to manage these risks by:

- Undertaking proactive and regular analysis of the water main break history as good industry practice
- Updating our Drought Management and Emergency Response Plan for the critical water supply assets
- Completing the Integrated Water Cycle Management (IWCM) Plan, inclusive of 30 year long term financial modelling for water and sewerage infrastructure

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Council's current asset register is complete
- Current valuation data is accurate

Assets requiring renewal are identified from either the asset register or an alternative method.

- The timing of capital renewals based on the asset register is applied by adding the useful life to the year of acquisition or year of last renewal,
- Alternatively, an estimate of renewal lifecycle costs is projected from external condition modelling systems and may be supplemented with, or based on, expert knowledge.

The alternate method was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on a reliable level of confidence information.

1.8 Monitoring and Improvement Program

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

- Implement adequate resourcing and capability for updating the water services asset inventory, collection of asset repair data, and updating asset condition assessment records Undertake proactive and regular analysis of the water main break history as good industry practice
- Develop an Emergency Response Plan for the critical water assets
- Undertake proactive and regular analysis of the water infrastructure network
- Revise and improve the effectiveness of the current water renewal program

2 INTEGRATED PLANNING AND REPORTING FRAMEWORK

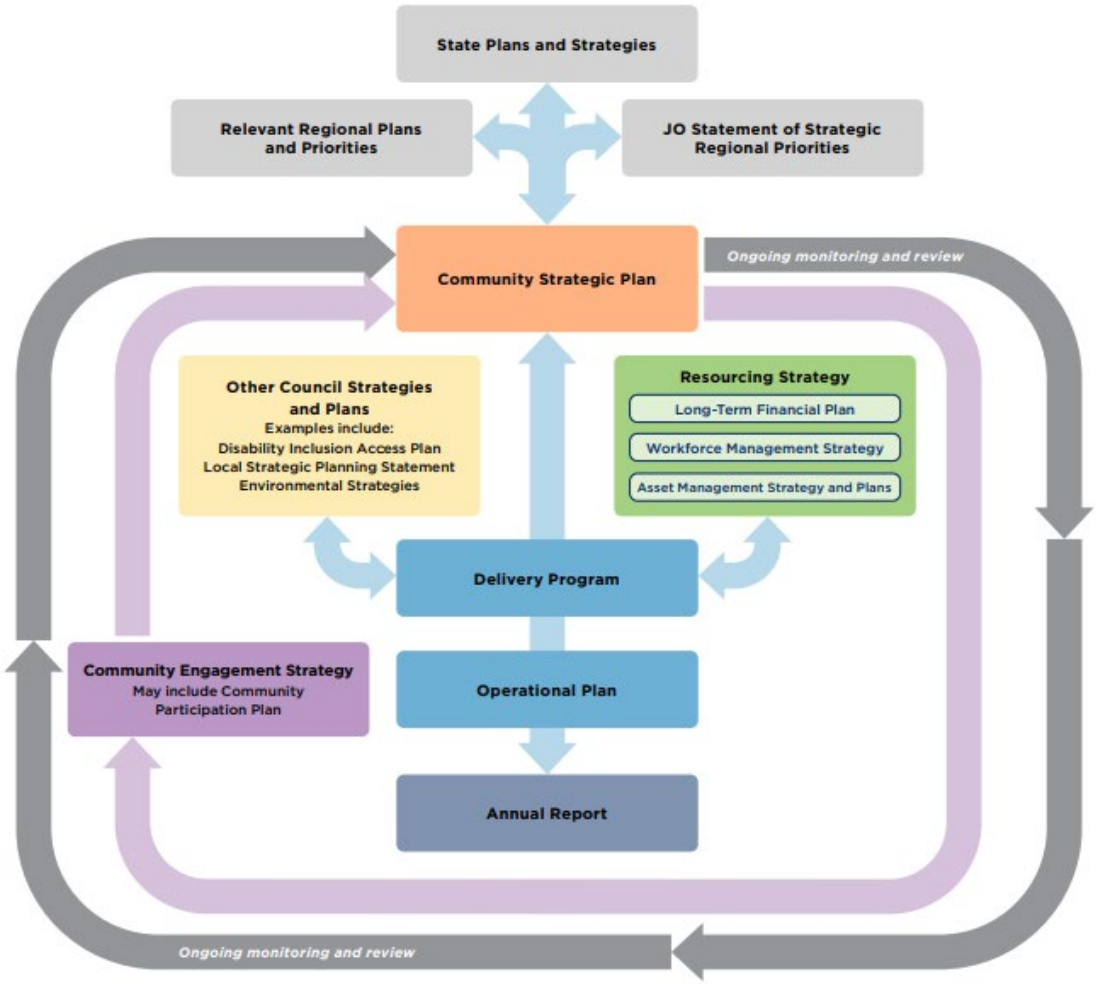
The Local Government Integrated Planning and Reporting (IP&R) Framework aims to ensure a more sustainable Local Government sector. The Local Government Act 1993 requires Council to work with the community to review the Community Strategic Plan and other documents within the Integrated Planning and Reporting Framework after the commencement of each four-year elected Council term.

Councils need to take a long term view and consider social, economic and environmental aspects and the needs of the current and future generations when making decisions. This underpins the Integrated, Planning and Reporting Framework. The importance of Civic Leadership and accountability and transparency in decision making should also underpin the Plan.

All NSW Councils are required to develop a Community Strategic Plan along with a Delivery Program (4 years) and Operational Plan (1 year). The CSP 2032 and its strategic objectives provide a foundation for our Delivery Program and Operational Plan. The Delivery Program and Operational Plan detail how each service addresses the CSP 2032 objectives, ongoing activities, priority projects and the strategies supporting this work.

These documents are informed by a Resourcing Strategy that is made up of a Long Term Financial Plan, Asset Management Plans and Workforce Management Plan. In order to achieve the integration envisaged by the IP&R Framework, there is an alignment between the CSP 2032, Delivery Program, Operational Plan and the other key documents. This is identified on the Upper Hunter Shire Integrated Planning and Reporting Framework.

The essential elements of the IP&R Framework are:



3 INTRODUCTION

3.1 Background

This AM 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 planning period.

The AM Plan is to be read with the Upper Hunter Shire Council planning documents. This should include the Asset Management Policy and Asset Management, along with the following key planning documents:

- Community Strategic Plan 2032
- Long Term Financial Plan 2020-2030
- Delivery Program 2022-2025 and Operational Plan 2023-2024
- Workforce Management Strategy 2022-2025

The infrastructure assets covered by this AM Plan include a water services network comprising of water treatment plants, a dam, service reservoirs, trunk mains, and reticulated water mains in the towns of Aberdeen, Merriwa, Murrurundi, Scone and the villages in the local government area as shown in Figure 1.

The infrastructure assets included in this plan have a total replacement value of $145,760,000.

Figure 2: Map of Upper Hunter Shire Towns

Key stakeholders in the preparation and implementation of this AMP are shown in Table 3.1.

Table 3.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	• Represent needs of community/shareholders • Endorsement of the asset management policy and plans • Allocate financial resources to meet planning objectives in providing services while managing risks • Ensure service is sustainable
General Manager	• Provide leadership and coordination for the implementation of asset management across the business units • Raise awareness and provide education of asset management across Council
Director Infrastructure Services	• Allocate human resources to meet planning objectives in providing services while managing risks • Ensure all staff are educated in asset management and that responsibilities are communicated to staff
Manager Strategic Assets	• Develop, review and oversee the Asset Management Policy and Asset Management Plans • Implement the improvement activities identified within the plan • Ensure that all asset data is kept up to date and inspections are undertaken in accordance with the agreed levels of service • Develop 10 year Capital Works plans and budgeting
Manager Works Delivery and Manager Water and Sewer	• Operations and maintenance management to meed agreed service levels • Liaison internally with Senior Management with regard to asset prioritisation and planning
UHSC Staff	• Verify the size, location and condition of assets • Provide local knowledge detail on all infrastructure assets • Capital Works, Operations and Maintenance management to meet agreed service levels • Liaison with Managers with regard to asset condition, prioritisation and planning
Community	• Be aware of service levels and costs • Participate in consultation processes • Provide feedback on services • End user of the assets

3.2 Goals and Objectives of Asset Management

Our goal for 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,
- Risk Management
- 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:

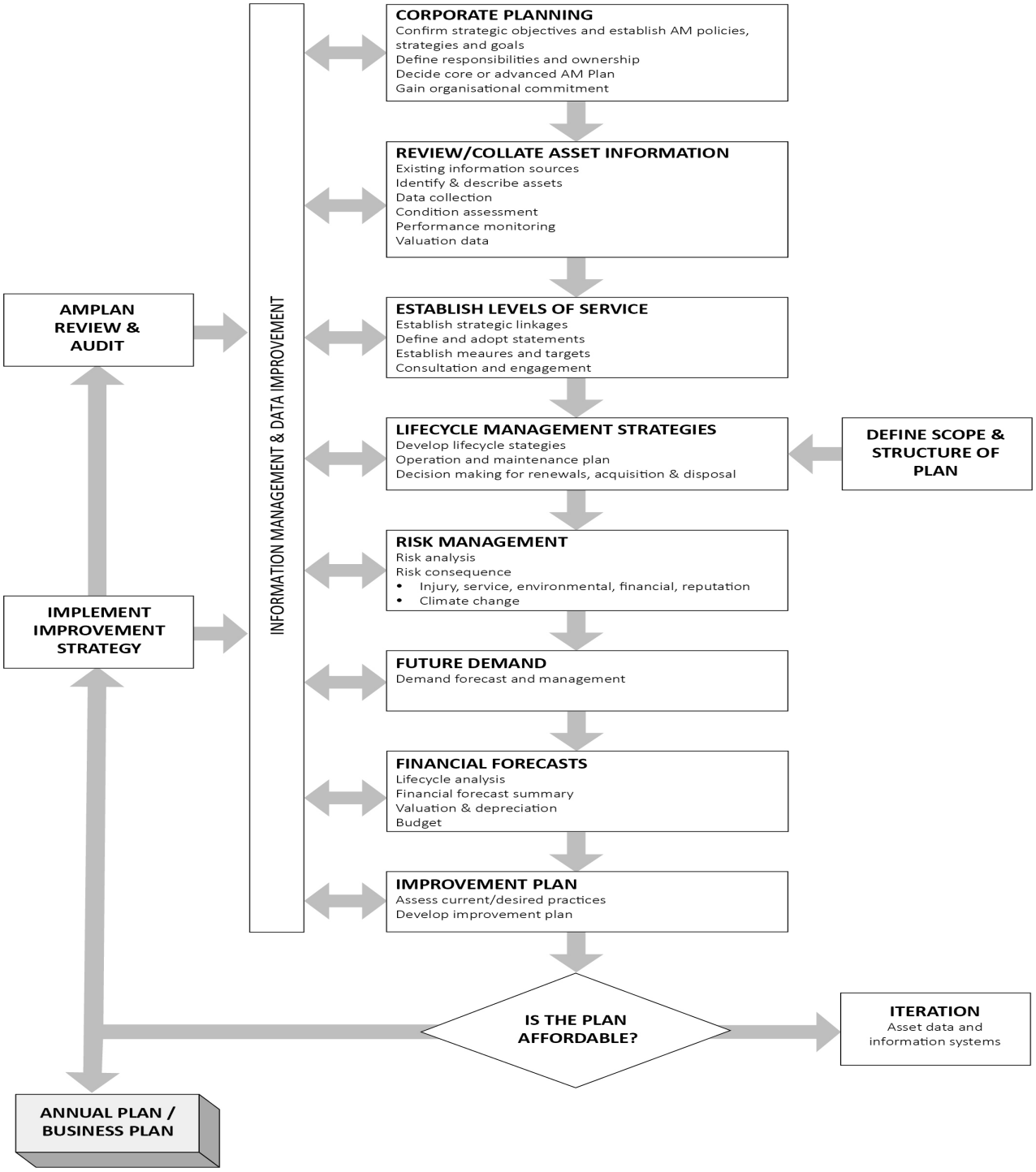
- International Infrastructure Management Manual 2015[1]
- ISO 55000[2]

[1] Based on IPWEA 2015 IIMM, Sec 2.1.3, p 2| 13
[2] ISO 55000 Overview, principles and terminology

A road map for preparing an AM Plan is shown below.

Road Map for preparing an Asset Management Plan

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



4 LEVELS OF SERVICE

4.1 Customer Research and Expectations

This AM Plan is prepared to facilitate consultation prior to adoption of levels of service by the Council. Future revisions of the AM Plan will incorporate customer consultation on service levels and costs of providing the service. This will assist the Council 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.

In a broader attempt to assess the priorities and service expectations of our wider community, across all areas of performance, Council has commissioned detailed surveys through the company Micromex Research Consultants.

This survey concentrated on establishing the community's assessment of the importance of, and their satisfaction with, a number of services (52 in total). A scale of 1 to 5 was used in all rating questions where 1 was the lowest importance or satisfaction, and 5 was the highest importance or satisfaction.

Separately, comprehensive community surveys were undertaken in 2010, 2013, 2015 and 2017 using a mix of phone and face to face surveys. Table 4.1 summarises the results from our Customer Satisfaction Survey.

Table 4.1: Customer Satisfaction Survey Levels

YEAR	IMPORTANCE	SATISFACTION	PERFORMANCE GAP
2010	4.45	3.41	1.04
2013	4.52	3.78	0.74
2015	4.39	3.81	0.58
2017	4.39	4.16	0.23

Source: Community Research, Micromex Research (November 2017)

4.2 Strategic and Corporate Goals

This AM Plan is prepared under the direction of the Upper Hunter Shire Council vision, mission, goals and objectives.

Our vision is:

"A quality rural lifestyle in a vibrant, caring and sustainable community" Our values are:

- Mutual respect for all people and cultures
- Ensure staff and community safety
- Efficient, effective and reliable service
- Honest, open and accountable
- Deliver on our commitments
- Improved Environmental Responsibility

Strategic goals have been set by the Upper Hunter Shire Council Community Strategic Plan 2032. The relevant goals and objectives and how these are addressed in this Asset Management Plan are summarised in Table 4.2.

Table 4.2: Goals and how these are addressed in this Plan

Goal	Strategic Objective	How Goal and objectives are addressed in the AM Plan
Quality Infrastructure Maintaining and developing our infrastructure network to meet the ongoing needs of our population	**4.3** Provide safe and reliable water and sewerage services to meet the demands of current and future generations	By providing for the cost effective development, upgrade, renewal and maintenance of water service assets in the Shire, and by ensuring that they are effectively managed to deliver the required services
		By proactively surveying the asset condition of our water network we will understand and make long term plans for a sustainable infrastructure
		By measuring the achievement of our service levels to our communities to ensure adequate water services provision

4.3 Legislative Requirements

Council has to adhere to many Australian and State legislative requirements which are noted in Table 4.3.

Council has to meet many legislative requirements including Australian and State legislation and State regulations as shown in Table 4.3.

Table 4.3: Legislative Requirements

Legislation	Requirement
Local Government Act 1993 and Local Government (General) Regulation 2021	Sets out the role, purpose, responsibilities and powers of local governments including the preparation of a long-term financial plan supported by asset management plans.
NSW Best Practice Management of Water Supply and Sewerage Framework	Compliance is a pre-requisite for dividends paid from the surplus of the Water Supply business & required for financial assistance towards capital infrastructure costs under the NSW Government's Country Towns Water & Sewerage Program.
Civil Liability Act 2002	To manage negligence, elements of a claim, duty of care, standard of care and causation and to address the requirements of sections 42 and 45.

National Asset Management Framework	Focuses on long-term financial sustainability and provides a mandate to have long-term strategy, financial statements and annual reporting mechanisms. AM plans are likely to be audited.
Integrated Planning and Reporting (IP&R) Framework	Key requirement is to integrate community plans with operational and delivery plans.
Protection of the Environment Operations (POEO) Act 1997	Under the POEO Act, it is an offence for the operator of any facility to cause pollution, including odour.
Waste Avoidance and Resource Recovery (WARR) Act 2001	Establishes the need to avoid/minimise waste, increase resource use efficiency/reduce natural resource consumption, and minimise environmental impact through ecologically sustainable development and sustainable waste management systems.
Water Industry Competition Act, 2006	Ensure Council's business activities operate on a level playing field, with no advantage being gained over competing private business activities
Environmental Offences and Penalties Act 1989	Details Council's environmental responsibilities and the penalties to be applied if these are not met
Work Health & Safety Act 2011	Council must ensure a safe workplace for all workers and other persons.
Independent Pricing and Regulatory Tribunal Act 1992	Ensure fair prices are set and trading activity meets minimum standards and guidelines

Other water specific legislation which Council considers includes:

- Fire Brigades Regulation 2014
- State Emergency and Rescue Management Act 1989
- Environmental Planning and Assessment Act 1979
- Catchment Management Authorities Act 2003
- Public Health Act 2010
- Fluoridation of Public Works Supplies Act 1957
- Water Management Act 2000
- Water Act 2007 (Commonwealth)

4.4 Customer Values

Service levels are defined in three ways, customer values, customer levels of service and technical levels of 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 4.4: Customer Values

Service Objective:			
Customer Values	**Customer Satisfaction Measure**	**Current Feedback**	**Expected Trend Based on Planned Budget**
That service requests are responded to promptly	Number of complaints of poor water quality	1 complaint as at 30/06/2023	<6

4.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition 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 4.5 under each of the service measure types (Condition, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

There are measures of fact related to the service delivery outcome (e.g. number of occasions when service is not available or proportion of replacement value by condition %'s) to provide a balance in comparison to the customer perception that may be more subjective.

Indications of desired levels of service are obtained from community consultation/engagement. The water asset management planning process includes the development of scenarios to assist in planning future levels of service that are financially sustainable, and provide what the community wants at an affordable price.

Council have recently delivered a reliable water service for Murrurundi by constructing a pipeline from Scone to Murrurundi. This pipeline supplies water from Glenbawn Dam to Murrurundi. The pipeline will also service the villages of Parkville, Wingen and Blandford.

Council are also working to provide water to as many unconnected properties as practicable and have permitted dozens of rural properties along the length of the Scone to Murrurundi Pipeline to access the water via a revised Rural Water Supply arrangement.

Table 4.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance measure	Current Performance	Expected Trend Based on Planned Target
Condition	To sustainably manage the water service network	Water renewals expenditure compared against water industry peers, using the water industry annual reports to DPIE Water meet or exceed median expenditure level (Band 3)	Met Band 3	Nil change
	Confidence levels		High	High
Function	To provide reliable water network	Number of complaints of poor water quality	1 complaint as at 30/06/2023	<6
	Sufficient access to water availability to fight fires when required	Existing spacing of fire hydrants and water pressure meets the Fire Brigades Regulations 2014	Meets the Fire Brigades Regulations 2014	Nil change
	Confidence levels		High	High
Capacity	To provide adequate water services for household and business use in currently serviced urban communities	Number of water main breaks per 100km of pipeline	29.36 water main breaks compared to Statewide median of 12.15	Nil change
	Confidence levels		High	High

4.6 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:

- **Acquistion** – 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 4.6 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

Table 4.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance	Recommended Performance
Acquisition	Extension of the village reticulation supply	Value of acquisition works completed / water depreciation	0.75	>1.10
Operation	Provide safe and reliable water	Number of customers receiving potable water/total number of customers	To be measured	98% Supply of potable water for customers within Council's testing methods
Maintenance	Repair water main breaks	Value of maintenance works completed / value of maintenance works required	127%	>100%
Renewal	Main Renewals/Replacements	Infrastructure Renewal Ratio (Value of water and sewer asset renewal completed / water depreciation)	63.90%	>100%
		Infrastructure Backlog Ratio (Estimated cost to bring assets to satisfactory standard / Closing value of assets)	2.27%	<2%

[3] IPWEA, 2015, IIMM, p 2|28.

It is important to monitor the service levels regularly as circumstances can and do change. Current performance is based on existing resource provision and work efficiencies. It is acknowledged changing circumstances such as technology and customer priorities will change over time.

It must be noted that the above ratios are purely based on financial information not the physical infrastructure that has been renewed. That is to say, that although Council is financially meeting the benchmark of renewals but may in fact not be physically due to the increased cost of renewals. For example, the average cost for renewing one kilometre of road may have been $250,000 this same work may now be costing $400,000. So financially Council is meeting its requirements and benchmarks, it may in fact be physically increasing the 'backlog of works'. This has serious consequences moving into the future regarding budgets, levels of service and overall sustainability.

The Infrastructure Renewal Ratio (Renewals/Depreciation) for 2022/23 for water infrastructure assets is 81.38% this is lower than the benchmark of 100%. Due to the amount of State and Federal Government grant funding received, renewals planned over the next years will reach the benchmark.

The Infrastructure Backlog Ratio (Cost to Bring to Satisfactory/Written Down Value) for 2022/23 for water infrastructure assets is 2.27% which is higher than the benchmark of 2%. Water assets are ageing with over 50% of infrastructure in Condition 3 or higher. Significant capital expenditure with a focus on renewals is required.

The Asset Maintenance Ratio (Asset Maintenance Expense/Required Maintenance) for 2022/23 for water infrastructure assets is 127% and meets the agreed benchmark of 100%.

The Acquisition Expenditure Ratio (Capital Expenditure/ Depreciation) for water infrastructure for 2022/23 is 0.75 which is lower than the benchmark of 1.10. Much like the Infrastructure Renewal Ratio this does not provide a clear indication of capital expenditure with large proportion of projects either partially or fully reliant of external funding programs through the State and Federal Government initiatives or other sources.

5 FUTURE DEMAND

5.1 Demand Driver

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.

5.2 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.

5.3 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 5.3.

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 5.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 5.3: Demand management Plan

Demand Driver	Current Position	Projection	Impact on services	Demand Management Plan
Increase in community expectations	Moderate expectations with increased education and awareness	Water demand expected to reduce by 15 to 20 per cent in the medium term	Water consumption reduction	Education and awareness to encourage water reduction and compliance behaviour.
Changes in Technology	Continual improvements in water infrastructure	Introduction of new plant and equipment. Asset data capture by video inspection and the transportation of this information onto Council's GIS	Increased useful life Spatial location and condition of assets able to be verified from GIS reducing the need for reactive inspections	These changes will be assessed on merit and applied where a reduction in operation and maintenance costs, improved efficiency, quality and WH&S can be achieved
Climate Change	Extremes increasing	Higher intensity rainfalls in storm events	Increased flooding resulting in potential property damage	Significant spending required to maintain access and condition (though generally funded)

Market Demands	Civil construction market experiencing excessive treatment	This will continue for the foreseeable future given State, Federal and private investment and funding	Significant impact in being able to deliver capital works, maintenance and operational programs on a yearly basis	Prioritise internal recruitment and training of existing staff to deliver these programs

5.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed.

The cumulative value of new contributed and constructed asset values have not been considered in any detail in this plan, as the historical and expected growth rates for Council have not been particularly high, and would not be considered to have any significant impact in the 10-year horizon of this plan.

Acquiring new assets will commit 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 6).

5.5 Climate Change Adaptation

The impacts of climate change may 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 impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.[4]

As a minimum we consider how to manage our existing assets given potential climate change impacts for our region.

[4] IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

Risk and opportunities identified to date are shown in Table 5.5.1

Table 5.5.1 Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Temperature change	Increase in temperatures	Increasing temperatures affects road maintenance techniques and deterioration rates	Monitor with regular condition assessments
Storm intensity	More extreme weather events	Localised flooding	Ensure maintenance of kerb and gutter and roadside drainage
Less frequent rainfall, increased drought longevity, increased evaporation	Reduced secure yield from water sources	Possible reduced level of service	Ensure Drought and Emergency Response Management Plan is up to date. Augmentation of water sources, potential bulk water supply from neighbouring councils

Additionally, the way in which we construct new assets should recognise that there is opportunity to build in resilience to climate change impacts. Building resilience can have the following 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 AM Plan.

6 LIFECYCLE MANAGEMENT PLAN

The lifecycle management plan details how Council plans to manage and operate the water infrastructure assets at the agreed levels of service (Refer to section 4) while managing the life cycle costs.

6.1 Background Data

6.1.1 Physical parameters

The assets covered by this AM Plan are shown in Table 6.1.1.

This covers all water infrastructure assets, including water treatment plants, a dam, service reservoirs, trunk mains, and reticulated water mains.

Table 6.1.1: Assets covered by this Plan

Asset Category	Replacement Value
Mains / Pipes	$93,097,000
Reservoirs	$19,377,000
Pumping Stations	$8,230,000
Treatment Plants	$21,625,000
Bores / Wells	$2,311,000
Other Infrastructure	$1,120,000
Total	**$145,760,000**

Source: Council's Asset Register (as at 30 June 2023)

All figure values are shown in current day dollars.

The age profile of the water assets recorded in Council's Asset Register is variable. The initial water infrastructure for the Merriwa (1957) and Murrurundi (1935) townships were installed in the same year. This means that many of the assets will theoretically fail in the same period. The history of these two townships is an important consideration for renewal planning.

6.1.2 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 6.1.2.

Table 6.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Murrurundi	Litree Membrane WTP operation is not reliable
Scone	One pocket of low water pressure in an elevated area of eastern Scone
Aberdeen	One pocket of low water pressure in an elevated area close to reservoir
Merriwa	Sections of town cannot supply desired fire flows
All Water Supply Areas	Relatively high water main break frequency, and difficulty of achieving main isolation with stop valves
Merriwa and Murrurundi	Small sections of the towns edge are not connected to full town water services, including fire hydrant availability
Scone/Aberdeen/Cassilis	Water treatment does not include filtration systems, or equivalent when feeding from Glenbawn supply.

The above service deficiencies were identified from customer requests, condition assessments and technical investigations.

6.1.3 Asset condition

Condition is currently monitored through failure statistics, selected dig up and inspect (rare) and inspection of the above ground facilities.

The asset condition of the mechanical, electrical and civil assets for pump stations and treatment plants were assessed in 2022.

The frequency of condition assessments will depend on a number of factors including the age, life, risk and criticality of the asset. In taking these factors into account and the current revaluation cycle for assets Council has determined a condition inspection frequency for each asset class. The following inspection frequency has been adopted for each asset class for future condition surveys:

- Above ground water assets – visual every five years
- Water pipelines – 5% visual inspection every year

Condition is measured using a 1 – 5 grading system[5] as detailed in Table 6.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM plan results are translated to a 1 – 5 grading scale for ease of communication.

[5] IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

Table 6.1.3: Condition Grading System

Condition Grading	Description of Condition
1	**Very Good**: free of defects, only planned and/or routine maintenance required
2	**Good**: minor defects, increasing maintenance required plus planned maintenance
3	**Fair**: defects requiring regular and/or significant maintenance to reinstate service
4	**Poor**: significant defects, higher order cost intervention likely
5	**Very Poor**: physically unsound and/or beyond rehabilitation, immediate action required

The condition profile of our assets is shown in 6.1.4.

Table 6.1.4: Asset Condition Profile

Water Infrastructure Assets Component	Asset condition grade				
	1	2	3	4	5
Mains / Pipes	39.0%	10.0%	32.0%	19.0%	0.0%
Reservoirs	10.0%	54.0%	29.0%	7.0%	0.0%
Pumping Stations	0.0%	100.0%	0.0%	0.0%	0.0%
Treatment Plants	0.0%	100.0%	0.0%	0.0%	0.0%
Bores / Wells	24.0%	26.0%	50.0%	0.0%	0.0%
Other Infrastructure	0.0%	0.0%	100.0%	0.0%	0.0%

6.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical activities include cleaning, 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-today work necessary to keep assets operating. Examples of typical maintenance activities include pump seal replacements and water main repairs.

The trend in maintenance budgets are shown in 6.2.1.

Table 6.2.1: Maintenance Budget Trends

Year	Maintenance Budget
2022/23	$1,168,686
2023/24	$1,169,882
2024/25	$1,214,100

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.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement.

Asset hierarchy

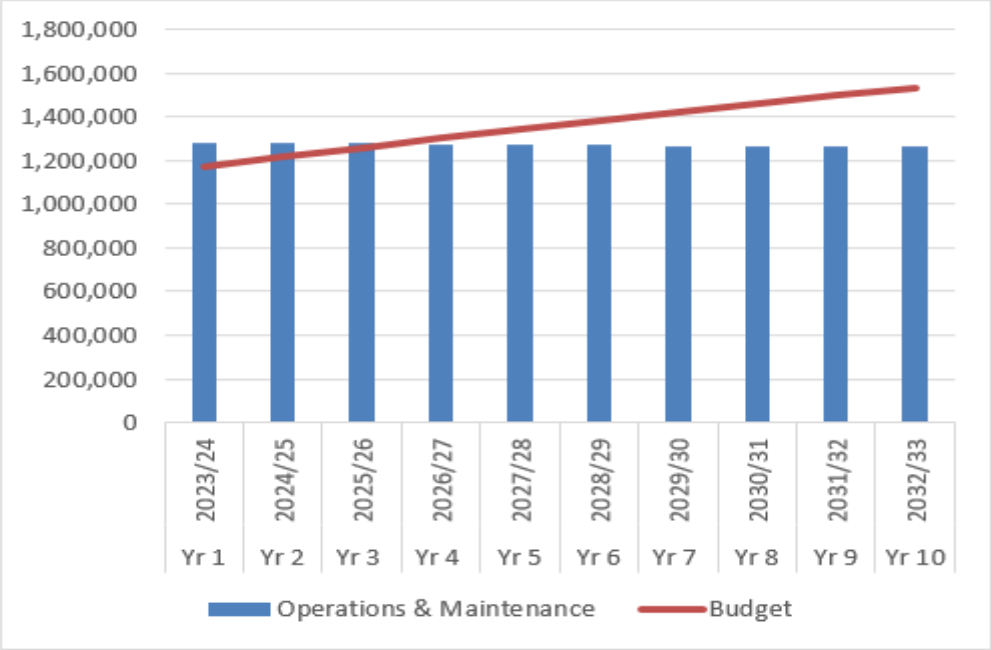
An asset hierarchy provides a framework for structuring data in an information system to assist in collection of data, reporting information and making decisions. The hierarchy includes the asset class and component used for asset planning and financial reporting and service level hierarchy used for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

An asset hierarchy is currently under development.

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

Figure 6.2: Operations and Maintenance Summary



All figure values are shown in current day dollars.

Planned/cyclic maintenance work is currently 25% of total maintenance expenditure depending on the frequency and number of customer requests received during the year. It is Council's goal to increase this amount progressively and reduce the amount of reactive maintenance, which should then provide operational cost savings, and maximised asset performance.

A target of 50% is considered an appropriate goal to balance cost with short term loss of service by Council's water customers.

6.3 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 three 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), or
- The third method uses a combination of average network renewals plus defect repairs in the Renewal Plan and Valuations sections of the Financial Modelling of Water and Sewerage Businesses – February 2011, and Upper Hunter Shire Council Special Schedule Number 7 - 2023. Condition assessment for large single assets will be used as another input from 2017/18 budget onwards.

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 6.3.

Asset useful lives were last reviewed on June 2022.

Table 6.3: Useful Lives of Assets

Asset Category	Useful Life (Years)
Mains / Pipes	80
Reservoirs	100
Pumping Stations	30 – 80
Treatment Plants	40 – 60
Bores / Wells	50 - 80
Other Infrastructure	15 - 100

The estimates for renewals in this AM Plan were based on the third method.

6.3.1 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).[6]
- 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,

[6] IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

- 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.[7]
- The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 6.3.1

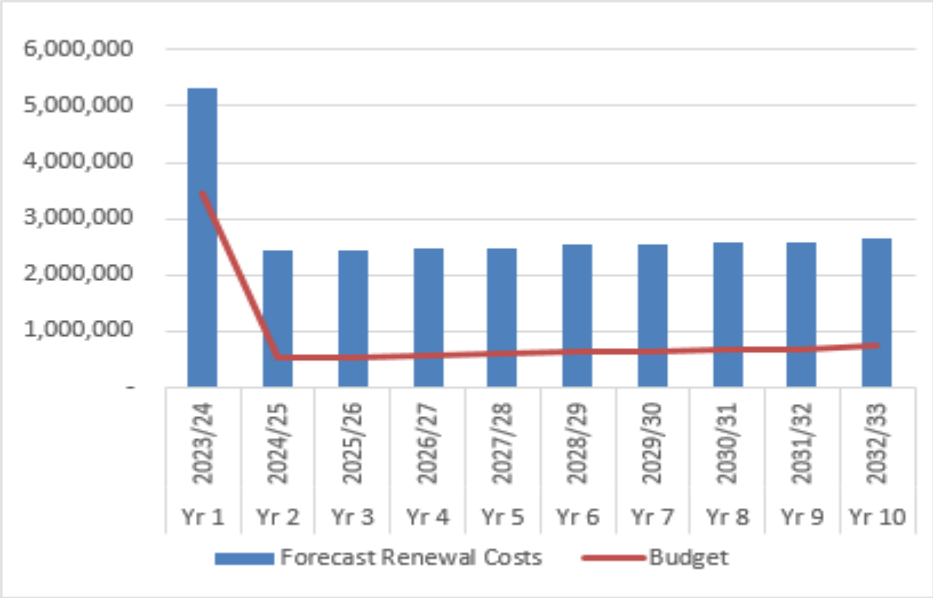
Table 6.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Unacceptable failure statistics	50
Design Life Reached	20
Does not meet modern day design standards	20
High consequence of failure	10
Total	**100%**

6.4 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 6.4.1. A detailed summary of the forecast renewal costs is shown in Appendix .

Figure 6.4.1: Forecast Renewal Costs



All figure values are shown in current day dollars.

[7] Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

With a continued focus on asset renewal planning this should result in improved asset conditions, customer satisfaction levels, lower maintenance expenditure and the reduction or elimination of the backlog of works.

Renewal works identified in terms of renewal strategies may be deferred if the cost (or aggregate cost) is beyond the current financial ability to fund it. This can occur when there are short term renewal profile peaks, or higher priority works are required on other infrastructure asset groups.

When renewal works are deferred, the impact of the deferral on the assets ability to still provide the required level of service will be assessed. Although the deferral of some renewal works may not impact significantly on the short-term operation of the assets, repeated deferral will create a liability (backlog) in the longer term.

6.5 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 Council.

6.5.1 Selection criteria

Proposed acquisition of new assets, and upgrade of existing 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 Council'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 6.5.1.

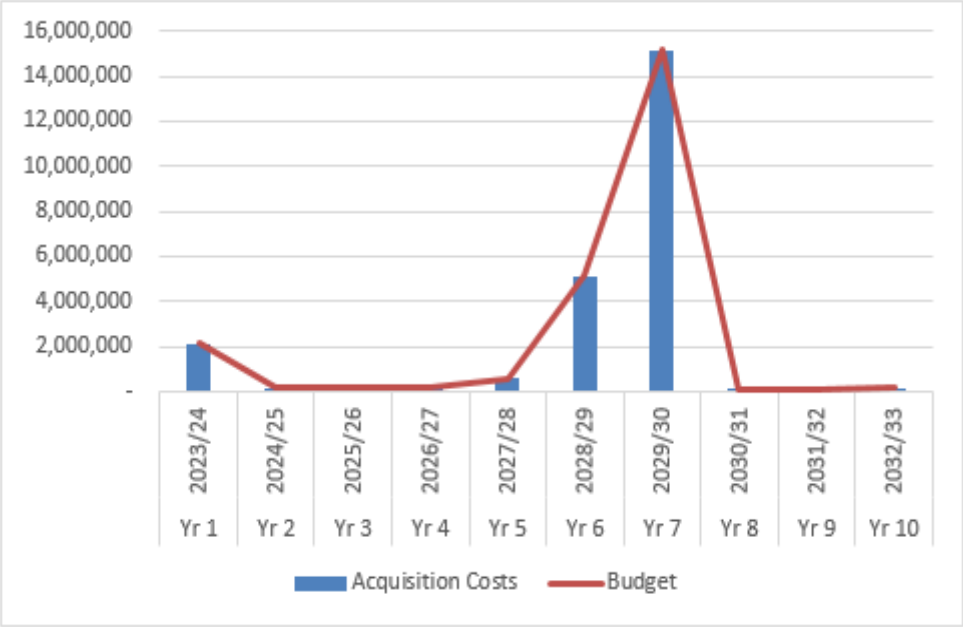
Table 6.5.1: Acquired Assets Priority Ranking Criteria

CRITERIA	WEIGHTING
Identified deficiency to adopted levels of Service	50
External standards have changed	30
Community wishing improved water service	20
Total	**100%**

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarized in Figure 6.5.1 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

Figure 6.5.1: Acquisition Summary



All figure values are shown in current day dollars.

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 asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity.

6.6 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. These costs are generally included as part of the capital project.

Council does not have any current intention to sell, retire, or decommission any of its major water supply assets during the next ten year period. This will be reviewed with the next update of this plan.

Assets or asset components from water sources, treatment plants, pumping stations, reservoirs and filter stations are often replaced as part of business as usual operations. The assets being replaced are assessed and either left in the ground (pipes), recycled, dumped or repurposed.

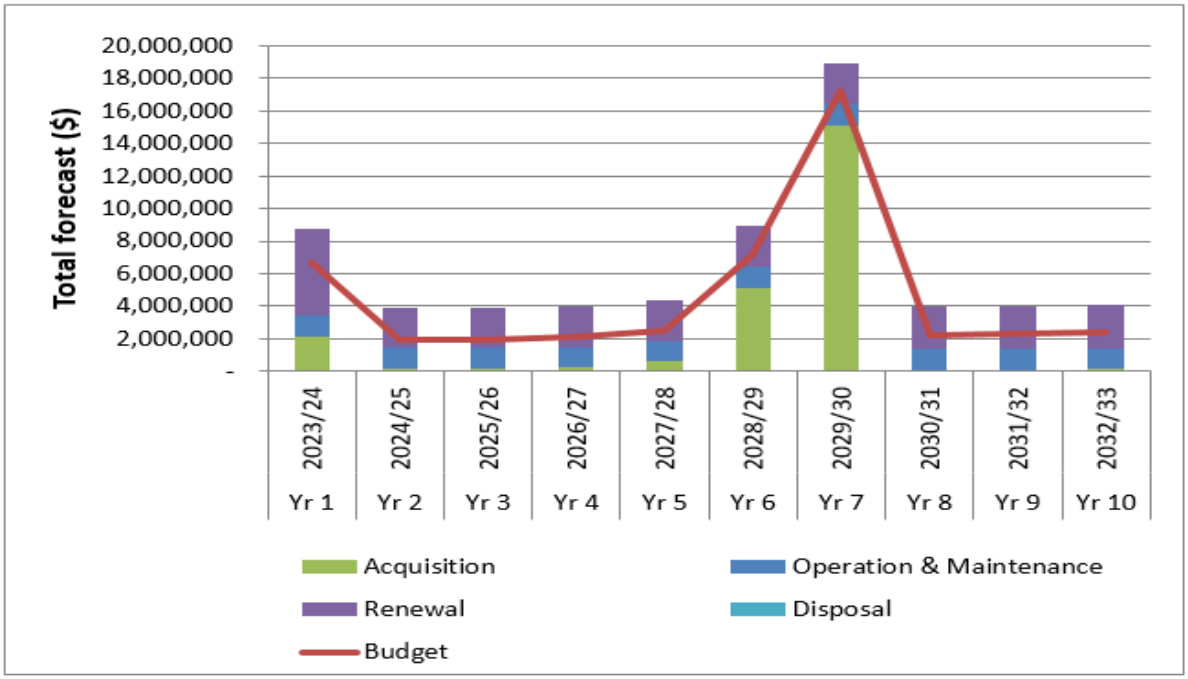
Council has not identified any water assets for disposal.

6.7 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 6.7.1. 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 6.7.1: Lifecycle Summary



7 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'[8].

An assessment of risks[9] 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.

7.1 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 7.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 7.1 Critical Assets

Critical Assets	Failure Mode	Impact
Treatment Plants	Failure of critical treatment plant electrical, mechanical or structural asset component or third party damage	Water overflows from reservoirs, major spill to environment
Pump stations	Pump station lid left off by contractor staff	Public safety compromised, such as person falling into pump station causing injury or death
	Failure of critical plant, electrical, mechanical or structural asset component or third party damage	Reduced availability of water supply to the community from the water supply reticulation

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.

[8] ISO 31000:2009, p 2
[9] Appendix E – Water Infrastructure Risk Register

7.2 Risk Assessment

The risk management process used is shown in Figure 7.2 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.

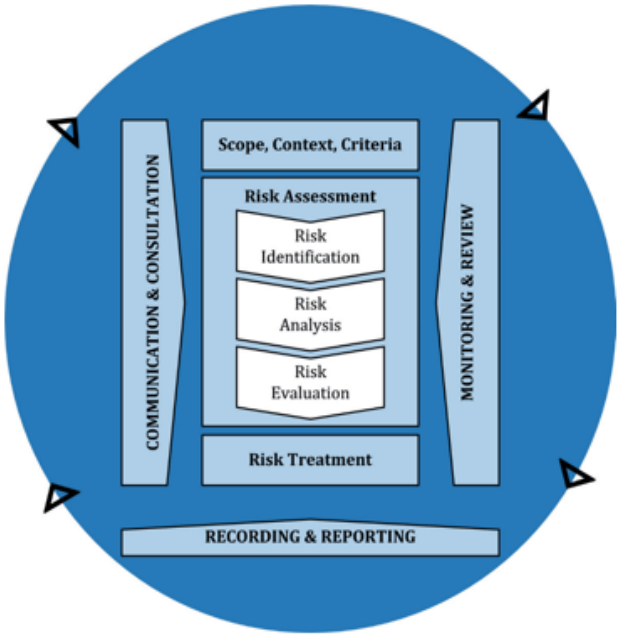


Fig 7.2 Risk Management Process - Abridged
Source: ISO 31000:2018, Figure 1, p9

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[10] 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 'Very High' (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 7.2. It is essential that these critical risks and costs are reported to management and Council.

[10] Appendix E – Water Infrastructure Risk Register

Table 7.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Water and sewerage infrastructural groups	Poor or incomplete asset management practices including AM Plan, lifecycle management plans (LCMP) and asset condition assessments	Very high	Complete the actions identified in the Water AM Plan including LCMP	High	Staff time
			Complete the resourcing levels for water services asset management		
			Complete the asset condition survey		
Water and sewerage infrastructural groups	Overall asset life and condition is compromised due to maintenance and renewal programs not well targeted or limited in scope	High	Complete the full revision of the Water Services AM Plans	Medium	Staff time
			Complete the asset condition assessment program		
Water and sewerage infrastructural groups	Financial implications with inaccurate asset valuation and long term planning including renewal forecasts	High	Implement the asset management improvement program	Medium	Staff time
			Continue with regular inspections and reporting on assets		
			Start proactively analysing and reporting on data availability		
			Start building core asset management capability		
			Complete asset condition survey		

Note *The residual risk is the risk remaining after the selected risk treatment plan is implemented.

7.3 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 recovery planning, financial capacity, climate change risk assessment and crisis leadership.

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

7.4 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.

7.4.1 What we cannot do

There are some operations and maintenance activities and capital projects that are unable to be undertaken within the next 10 years. These include:

- Provision of town water supply to any other village in Council's Local Government area at this stage
- Provision of town water supply to any currently rural zoned land
- Provision of town water supply to areas outside the supply areas mapped in the Development Servicing Plans

7.4.2 Service trade-off

If there is forecast work (operations, maintenance, renewal, acquisition or disposal) that cannot be undertaken due to available resources, then this will result in service consequences for users. These service consequences include:

- Reduction in service level due
- Reduced availability of water supply to the community from the water supply reticulation

7.4.3 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:

- Increasing reactive maintenance costs
- Exposure to claims and litigation against Council for public liability breaches
- Political pressure for improved levels of service
- Lower performance on asset and financial indicators

These actions and expenditures are considered and included in the forecast costs, and where developed, the Risk Management Plan.

8 FINANCIAL SUMMARY

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

8.1 Financial Sustainability and Projections

8.1.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AM 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 Ratio[11] 100%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 17.75% 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 C.

Medium term – 10 year financial planning period

This AM 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 first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is $3,717,291 on average per year.

The proposed (budget) operations, maintenance and renewal funding is $2,065,686 on average per year. This indicates that 55.57% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets.

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 years of the AM Plan and ideally over the 10 year life of the Long-Term Financial Plan.

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

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

Table 8.1.2 shows the forecast costs (outlays) required for consideration in the 10 year long-term financial plan.

Providing services in a financially sustainable manner requires a balance between the forecast outlays required to deliver the agreed service levels with the planned budget allocations in the long-term financial plan.

A gap between the forecast outlays and the amounts allocated in the financial plan indicates further work is required on reviewing service levels in the AM Plan (including possibly revising the long-term financial plan).

Forecast costs are shown in 2023/24 dollar values.

Table 8.1.2: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Acquisition	Operation & Maintenance	Renewal	Disposal
2023/24	2,121,000	1,283,112	5,327,569	0
2024/25	185,000	1,280,493	2,424,635	0
2025/26	190,000	1,277,774	2,429,740	0
2026/27	222,500	1,275,191	2,474,307	0
2027/28	595,000	1,272,680	2,483,299	0
2028/29	5,107,500	1,270,533	2,527,739	0
2029/30	15,135,000	1,267,725	2,530,706	0
2030/31	112,500	1,265,052	2,582,198	0
2031/32	117,500	1,262,502	2,584,129	0
2032/33	155,000	1,260,306	2,639,619	0

8.2 Funding Strategy

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

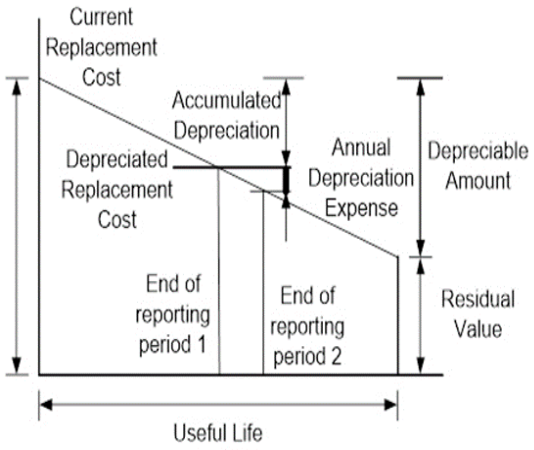
The financial strategy of Council determines how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

8.3 Valuation Forecasts

8.3.1 Asset valuations

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are values at $145,760, as at June 2023.

Current (Gross) Replacement Cost	$145,760,000
Depreciable Amount	$145,760,000
Depreciated Replacement Cost12	$ 85,766,000
Annual Depreciation	$ 1,913,925



8.3.2 Valuation Forecast

Asset values are forecast to increase as additional assets are added to 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.

8.4 Key Assumptions Made in Financial Forecasts

In compiling this AM 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 AM Plan are:

- Council's current asset register is complete
- Current valuation data is accurate

8.5 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 an A - E level scale12 in accordance with Table 8.5.1.

Table 8.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	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 ± 10%

[12] Also reported as Written Down Value, Carrying or Net Book Value.

C. Medium	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 ± 25%
D. Low	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 ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 8.5.2.

Table 8.5.2: Data Confidence Assessment for Data used in AMP

Data	Confidence Assessment	Comment
Demand drivers	B	Derived from Census data and looking at historical drivers
Growth projections	B	Multiple scenarios developed and considered during 30 year financial modelling
Acquisition forecast	A	Currently planned acquisitions, minimal gifted assets
Operation forecast	B	Current levels generally known and recorded, scenarios considering additional resourcing need to be developed
Maintenance forecast	B	Based on historic expenditure, however maintenance history not recorded at asset ID level. Need to start recording work history to asset lengths in CONFIRM to improve renewal planning
Renewal forecast		
- Asset values	B	Asset revaluation completed in June 2020. Major revaluation scheduled for every five years and due 2025
- Asset useful lives	B	Useful lives were last reviewed in June 2020 and will be reviewed in 2024/25 prior to the major asset revaluation planned for 2025
- Condition modelling	D	There has been limited condition information collected and therefore no modelling undertaken to date
Disposal forecast	A	No disposals expected

The estimated confidence level for and reliability of data used in this AM Plan is considered to be high.

9 PLAN IMPROVEMENT AND MONITORING

9.1 Status of Asset Management Practices[13]

9.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is Authority.

9.1.2 Asset management data sources

This AM Plan utilises asset management data. The source of the data is Confirm asset management system. There is also a need to increase the skills and training of a number of Council officers who either presently, or could in future, use the Confirm system. Currently, there is no link between asset management systems and accounting systems. In order for this Asset Management Plan to grow in maturity and improve in accuracy it is vital that integration of asset register systems and financial systems be achieved.

9.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 9.2.

Table 9.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Undertake proactive and regular analysis of the water main break history as good industry practice	Water & Sewer Services, Strategic Assets	Internal allocations	2024/25
2	Revise and improve the effectiveness of the current water renewal program	Water & Sewer Services, Strategic Assets	Internal allocations	2024/25
3	Implement adequate resourcing and capability for updating the water services asset inventory, collection of asset repair data, and updating asset condition assessment records	Strategic Assets	Internal allocations	2024/25
4	Develop an Emergency Response Plan for the critical water assets	Manager Strategic Assets/Internal Auditor/Risk Co-ordinator	Internal allocations	2024/25
5	Start recording work history to asset lengths in Confirm to improve renewal planning	Water & Sewer Services, Strategic Assets	Internal allocations	2024/25
6	Improve capture of Operations Costs	Water & Sewer Services	Internal allocations	Ongoing

[13] ISO 55000 Refers to this as the Asset Management System

9.3 Monitoring and Review Procedures

This AM 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, acquisition and asset disposal costs and planned 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 life of four years and is due for complete revision and updating within one year of each Council election.

9.4 Performance Measures

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

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which 1-5 year detailed works programs, budgets, business plans and organisational structures take into account the 'global' works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the target of 100%

10 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2015, 3rd edn., '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, 2020 'International Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2012, Practice Note 6 Long-Term Financial Planning, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn6
- IPWEA, 2014, Practice Note 8 – Levels of Service & Community Engagement, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn8
- ISO, 2014, ISO 55000:2014, Overview, principles and terminology
- ISO, 2018, ISO 31000:2018, Risk management – Guidelines
- Strategic Plan 2032
- Delivery Program 2022 - 2025 Operational Plan 2023 – 2024

11 APPENDICES

Appendix A - Projected 10 year Capital Renewal, Replacement and New Works Program

PROJECT	Type of Works			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	TOTAL 10 YEARS
	Improved Level of Service	Growth	Renewals	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	
WATER CAPITAL PROJECTS														
MERRIWA/CASSILIS WATER														
2014. Mwa - Main Renewals/Replacements	0%	0%	100%	240,000	120,000	120,000	130,000	130,000	140,000	140,000	150,000	150,000	160,000	1,480,000
2025. Mwa - Meter Replacements	0%	0%	100%	5,000	5,188	5,383	5,569	5,744	5,908	6,076	6,248	6,407	6,570	58,093
4677. Mwa – Treatment Plant Minor Renewals	0%	0%	100%	-	15,000	15,000	17,500	17,500	20,000	20,000	22,500	22,500	25,000	175,000
4678. Mwa/Cass - Minor Reservoir Repairs	0%	0%	100%	15,000	15,555	16,131	16,685	17,202	17,690	18,192	18,707	19,187	19,680	174,029
5332. Mwa - Reservoir Cleaning & Inspections	100%	0%	0%	-	10,000	-	-	12,500	-	-	15,000	-	-	37,500
5398. Mwa - New Mains/Main Extensions	0%	0%	100%	30,000	30,000	32,000	32,000	34,000	34,000	36,000	36,000	38,000	38,000	340,000
MURRURUNDI WATER														
2022. Scn/Mdi Pipeline	30%	70%	0%	9,000	9,323	9,657	9,984	10,284	10,572	10,869	11,174	11,466	11,800	104,129
2026. Mdi - Meter Replacements	0%	0%	100%	500,000	-	-	-	-	-	-	-	-	-	500,000
2071. Village Reticulation	0%	100%	0%	-	8,000	-	9,000	-	10,000	-	11,000	-	12,000	50,000
4498. Reservoir repairs/replacement	0%	0%	100%	-	-	15,000	-	-	17,500	-	-	20,000	-	52,500
5335. Mdi - Reservoir Cleaning & Inspections	100%	0%	0%	424,000	80,000	80,000	90,000	90,000	100,000	100,000	110,000	110,000	120,000	1,304,000
5397. Mdi - Main Renewals/Replacements	0%	0%	100%	9,000	9,323	9,657	9,984	10,284	10,572	10,869	11,174	11,466	11,800	104,129
														SCONE/ABERDEEN WATER
1105. Scn/Abn - Minor Reservoir Repairs	0%	0%	100%	8,500	8,500	8,500	9,500	9,500	9,500	9,500	10,500	10,500	10,500	95,000
2027. Scn/Abn - Meter Replacements	0%	0%	100%	42,500	30,000	30,000	30,000	35,000	35,000	35,000	40,000	40,000	49,000	366,500
2028. UV & Chlorination	0%	100%	0%	1,285,000	-	-	-	-	-	-	-	-	-	1,285,000
2030. Scone WTP	0%	100%	0%	100,000	100,000	100,000	100,000	500,000	5,000,000	15,000,000	-	-	-	20,900,000

4181. Telemetry Upgrade	0%	0%	100%	25,000	-	-	-	-	-	-	-	-	-	25,000
4219. Scn/Abn - Main Renewals/ Replacements	0%	0%	100%	2,050,000	200,000	210,000	220,000	230,000	240,000	250,000	260,000	270,000	280,000	4,210,000
4672. Abn - Replace High Tower Tank & Platform	0%	0%	100%	200,000	-	-	-	-	-	-	-	-	-	200,000
4687. Abn - Raw Water Pump Station Upgrade	0%	0%	100%	255,000	-	-	-	-	-	-	-	-	-	255,000
4794. IWCM	100%	0%	0%	10,500	15,000	15,000	16,000	16,000	17,000	17,000	18,000	18,000	19,000	161,500
4939. Scn/Abn - New Mains/Main Extensions	50%	50%	0%	75,000	-	-	-	-	-	-	-	-	-	75,000
5330. Scn/Abn - Reservoir Cleaning & Inspect	100%	0%	0%	-	75,000	75,000	82,500	82,500	90,000	90,000	97,500	97,500	105,000	795,000
5331. Scn/Abn - Drought Management Plan	100%	0%	0%	36,000	-	-	40,000	-	-	45,000	-	-	50,000	171,000
5510. Scn - Moobi Rd Water Booster Pump Station	0%	50%	50%	250,000	-	-	-	-	-	-	-	-	-	250,000
TOTAL CAPITAL WORKS EXPENDITURE PROPOSED FOR TEN YEAR PERIOD				**5,560,500**	**721,566**	**731,671**	**808,738**	**1,190,230**	**5,747,170**	**15,777,637**	**806,629**	**813,560**	**906,550**	**33,064,251**

Appendix B – Operation & Maintenance Expenditure

MERRIWA/CASSILIS WATER	Yr 1 2023/24	Yr 2 2024/25	Yr 3 2025/26	Yr 4 2026/27	Yr 5 2027/28	Yr 6 2028/29	Yr 7 2029/30	Yr 8 2030/31	Yr 9 2031/32	Yr 10 2032/33	10 YEAR TOTAL
OPERATING EXPENDITURE											
Direct Asset Costs											
Mains	115,100	119,284	123,621	127,897	131,601	135,180	138,857	142,635	146,259	149,975	1,330,409
Reservoirs	62,600	64,841	67,163	69,487	71,419	73,320	75,271	77,275	79,238	81,250	721,864
Pumping Stations	56,350	58,577	60,891	63,018	65,176	67,108	69,098	71,147	72,930	74,758	659,053
TOTAL	**234,050**	**242,702**	**251,675**	**260,402**	**268,196**	**275,608**	**283,226**	**291,057**	**298,427**	**305,983**	**2,711,326**

MURRURUNDI WATER	Yr 1 2023/24	Yr 2 2024/25	Yr 3 2025/26	Yr 4 2026/27	Yr 5 2027/28	Yr 6 2028/29	Yr 7 2029/30	Yr 8 2030/31	Yr 9 2031/32	Yr 10 2032/33	10 YEAR TOTAL
OPERATING EXPENDITURE											
Direct Asset Costs											
Dams and Weirs	31,600	32,754	33,950	35,123	36,158	37,152	38,174	39,223	40,222	41,247	365,603
Mains	44,400	57,530	59,635	61,695	63,517	65,263	67,058	68,903	70,656	72,454	631,111
Reservoirs	42,500	44,025	45,605	47,175	48,521	49,835	51,184	52,571	53,916	55,295	490,627
Pumping Stations	104,500	108,395	112,436	116,319	119,925	123,312	126,796	130,379	133,700	137,106	1,212,868
TOTAL	**223,000**	**242,704**	**251,626**	**260,312**	**268,121**	**275,562**	**283,212**	**291,076**	**298,494**	**306,102**	**2,700,209**

SCONE/ABERDEEN WATER	Yr 1 2023/24	Yr 2 2024/25	Yr 3 2025/26	Yr 4 2026/27	Yr 5 2027/28	Yr 6 2028/29	Yr 7 2029/30	Yr 8 2030/31	Yr 9 2031/32	Yr 10 2032/33	10 YEAR TOTAL
OPERATING EXPENDITURE											
Direct Asset Costs											
Mains	285,532	285,532	295,610	305,691	314,343	322,865	331,619	340,612	349,435	358,487	3,189,726
Reservoirs	59,700	61,788	64,467	67,240	69,790	72,422	74,319	76,266	78,219	80,222	704,433
Pumping Stations	367,600	381,374	395,709	409,458	422,245	434,231	446,494	459,106	470,753	482,696	4,269,666
TOTAL	**712,832**	**728,694**	**755,786**	**782,389**	**806,378**	**829,518**	**852,432**	**875,984**	**898,407**	**921,405**	**8,163,825**

Appendix C – Renewal Forecast Summary

C.1 – Renewal Forecast Assumptions and Source

The renewals forecast is based on expected renewal quantities required given the useful lives of the asset components. It is assumed that prioritisation will be undertaken each financial year to ensure the assets with most need are renewed as required.

This is subject to our annual review as new works are identified or as budgets and priority change.

C.2 – Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2023/24	$5,327,569	$3,439,500
2024/25	$2,424,635	$536,566
2025/26	$2,429,740	$541,671
2026/27	$2,474,307	$586,238
2027/28	$2,483,299	$595,230
2028/29	$2,527,739	$639,670
2029/30	$2,530,706	$642,637
2030/31	$2,582,198	$694,129
2031/32	$2,584,129	$696,060
2032/33	$2,639,619	$751,550

Appendix D - Disposal Summary

There are no disposals projected in this plan.

Appendix E – Activity Risk Register

RISK IDENTIFICATION							RISK ANALYSIS					RISK TREATMENT						
RISK NO.	ASSET AT RISK	WHAT CAN HAPPEN?	WHEN CAN IT OCCUR?	POSSIBLE CAUSE	EXISTING CONTROLS	IS RISK CREDIBLE?	LIKELIHOOD	CONSEQUENCES	RISK RATING	ACTION REQUIRED	IS RISK ACCEPTABLE?	TREATMENT OPTION(S)	RESIDUAL RISK	RISK TREATMENT PLAN	ACTIONS	RESPONSIBILITY	RESOURCES	BUDGET
1	Water infrastructural groups	Poor or incomplete asset management practices including AMP, lifecycle management plans (LCMP) and asset condition assessments	Anytime now	"Lack of knowledge; Poor record keeping; Resourcing issues"	The Water Services AMP contain LCMPs consistent with good industry practice; comprehensive asset condition survey underway	Yes	Almost certain	Major	Very High	Immediate corrective action	No	"Survey for asset groups with missing inventory data; Develop AM improvement plan; Develop staff AM capability; Review appropriate resourcing levels for AM"	High	"Complete the actions identified in the Water Services AMP including LCMP; Complete asset condition survey; Water and Waste Manager and Manager Strategic Assets to review appropriate resourcing levels for water services AM"	"Complete the actions identified in the Water Services AMP including LCMP; Complete the resourcing levels for water services AM; Complete asset condition survey"	Manager Water and Sewer, Manager Strategic Assets and Manager Information Services	"Staff time; External consultant for AMP development"	To be confirmed
2	Water infrastructural groups	Overall asset life and condition is compromised due to maintenance and renewal programs not well targeted or limited in scope	Anytime in the future	"Limited condition assessments to date; Limited funding for maintenance and renewals at asset component level"	"The Water Services AMP will identify the required levels of investment to maintain asset condition; Potential implications of funding shortfalls to be identified in the AMP"	Yes	Almost certain	Moderate	High	Prioritised action required	No	"Review asset condition assessment program including frequency and asset value and risk; Ongoing review of investment needs related to asset condition; Provision of adequate budget to maintain and renew at asset component level"	Medium	"Complete the full revision of the Water Services AMP; Complete the asset condition assessment program "	"Complete the full revision of the Water Services AMP; Complete the asset condition assessment program "	Manager Water and Sewer	"Staff time; External consultant for AMP development and condition surveys as required"	To be confirmed
3	Water infrastructural groups	Unexpected failure of critical assets	Within 2-3 years	Incomplete knowledge of condition and remaining life of critical infrastructure, insufficient renewal and maintenance funding	"Routine inspections of assets by field staff; Potential implications of funding shortfalls to be identified in this AMP"	Yes	Possible	Moderate	High	Prioritised action required	No	"Start monitoring the condition of all critical assets; Review inspection frequencies to align with criticality; Identify funding needs to maintain levels of service"	Medium	Complete the condition assessment of the critical assets	Complete asset condition assessment of critical assets	Manager Water and Sewer	Staff time and external contractors for condition survey	To be confirmed
4	Water infrastructural group	Reduced availability of water supply to the community from the water supply reticulation	Within 5 years	"Climate change; Drought"	"Instigate drought management plan; Communication on Council's website"	Yes	Possible	Moderate	High	Prioritised action required	No	"Increase water storage; Start proactive leak detection management; Investigate alternative water sources"	Medium	Develop and implement proactive leakage programme	Develop and implement proactive leak detection program	Manager Water and Sewer	Staff time and external contractors for leak detection programme	To be confirmed
5	Water infrastructural groups	Financial implications with inaccurate asset valuation and long term planning including renewal forecasts	Within 2-3 years	Asset information including condition and performance data not available or inaccurate (including donated assets)	"Asset management improvement program developed with 2016 AMP; Regular inspections and reporting by O & M teams on assets; Comprehensive asset condition survey underway"	Yes	Likely	Major	High	Prioritised action required	No	"Data availability proactively analysed and reported on; AM data exchange process for donated assets and Council's capex projects; Asset data audits; AM tools; Build core AM capability"	Medium	"Implement the AM improvement program developed with AMP; Continue with regular inspections and reporting by O & M team on assets; Start proactively analysing and reporting on data availability; Start building core AM capability."	"Implement the AM improvement program; Continue with regular inspections and reporting on assets; Start proactively analysing and reporting on data availability; Start building core AM capability; Complete asset condition survey."	Manager Water and Sewer, Manager Strategic Assets and Manager Information Services	Staff time	To be confirmed

RISK IDENTIFICATION							RISK ANALYSIS					RISK TREATMENT						
RISK NO.	ASSET AT RISK	WHAT CAN HAPPEN?	WHEN CAN IT OCCUR?	POSSIBLE CAUSE	EXISTING CONTROLS	IS RISK CREDIBLE?	LIKELIHOOD	CONSEQUENCES	RISK RATING	ACTION REQUIRED	IS RISK ACCEPTABLE?	TREATMENT OPTION(S)	RESIDUAL RISK	RISK TREATMENT PLAN	ACTIONS	RESPONSIBILITY	RESOURCES	BUDGET
7	Water infrastructural group	"Damage to environment; Lost water resource"	Within 5 years	Water overflows from reservoirs	"SCADA for monitoring; Regular reservoir inspections by operators; External risk assessments every 2 years "	Yes	Possible	Minor	Medium	Planned action required	No	"Develop an overflow risk management assessment and action plan; Increase risk assessment frequencies"	Low	Develop an overflow risk management assessment and action plan	Develop an overflow risk management assessment and action plan	Manager Water and Sewer	Staff time	To be confirmed
8	Water infrastructural group	Unreliable water source for Murrurundi water users	Anytime now	Less than acceptable supply available	"Monitoring of demand; Started the Murrurundi Water Augmentation Project Operational Response Plans including trucking water from Scone"	No	Likely	Minor	Medium	Planned action required	No	"Continue with monitoring of demand; Implement the Murrurundi Water Augmentation Project; Continue with operational solutions "	Medium	"Continue with operational solutions; Implement the Murrurundi Water Augmentation Project; "	"Continue with operational solutions; Implement the Murrurundi Water Augmentation Project"	Manager Water and Sewer	Staff time	To be confirmed
9	Water infrastructural group	Inefficient management of water reticulation assets and lost revenue	Within 2-3 years	"High leakage from system; Illegal connections to the public water supply system"	"Reactive leak detection program; All customer water connections are metered; All Council facilities are metered; Renewal program in place based on known defects; Public reporting of theft in new subdivisions; Meters are read quarterly."	Yes	Likely	Moderate	High	Prioritised action required	No	"Proactive leak detection program; Implement targeted renewal program based on new asset condition information"	Medium	"Proactive leak detection program; Implement targeted renewal program based on new asset condition information"	"Proactive leak detection program; Implement targeted renewal program based on new asset condition information"	Manager Water and Sewer	Staff time and external contractor for leak detection	To be confirmed
10	Water infrastructural group	Reduced availability of water supply to the community from the water supply reticulation	Within 2-3 years	Failure of critical pipeline (asset failure or third party damage)	"O & M contractor responds to request for service; Response plans; Renewal programme"	Yes	Possible	Minor	Medium	Planned action required	No	"Planned condition monitoring programme; Maintenance history analysis and targeted renewal programmes; Review telemetry system effectiveness"	Medium	"Complete the planned condition monitoring programme; Start analysing maintenance history and develop targeted renewal programmes"	"Complete the planned condition monitoring programme; Start analysing maintenance history and develop targeted renewal program."	Manager Water and Sewer	Staff time	To be confirmed

Appendix F - Budget Summary by Lifecycle Activity

The budget is based on known approved grants.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation & Maintenance	Renewal	Disposal	Total
2023/24	2,121,000	1,169,882	3,439,500	0	6,730,382
2024/25	185,000	1,214,100	536,566	0	1,935,666
2025/26	190,000	1,259,087	541,671	0	1,990,758
2026/27	222,500	1,303,103	586,238	0	2,111,841
2027/28	595,000	1,342,695	595,230	0	2,532,925
2028/29	5,107,500	1,380,688	639,670	0	7,127,858
2029/30	15,135,000	1,418,870	642,670	0	17,196,507
2030/31	112,500	1,458,117	694,129	0	2,264,746
2031/32	117,500	1,495,328	696,060	0	2,308,888
2032/33	155,000	1,533,490	751,550	0	2,440,040

Appendix G – Forecast of Ratios to Local Government Benchmarks

		2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33
		Actual	Current Yr	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
INFRASTRUCTURE RENEWAL												
Asset Renewals		1,223,066	3,439,500	536,566	541,671	586,238	595,230	639,670	642,637	694,129	696,060	751,550
Depreciation Expense		1,913,925	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069
INFRASTRUCTURE BACKLOG												
Estimated Cost to bring back to Satisfactory		1,950,000	8,321,393	8,303,694	8,286,403	8,269,542	8,253,739	8,239,969	8,221,812	8,203,723	8,187,712	8,173,454
Closing Value of Assets		85,766,000	85,998,931	84,295,862	82,597,793	80,932,224	79,639,155	82,858,586	92,886,086	81,083,017	91,115,517	79,349,948
ASSET MAINTENANCE												
Asset Maintenance Expense		889,000	1,169,882	1,214,100	1,259,087	1,303,103	1,342,695	1,380,688	1,418,870	1,458,117	1,495,328	1,533,490
Required Asset Maintenance		701,000	1,283,112	1,280,493	1,277,774	1,275,191	1,272,680	1,270,533	1,267,725	1,265,052	1,262,502	1,260,306
ACQUISITION EXPENDITURE												
Annual Capital Expenditure		357,172	2,121,000	185,000	190,000	222,500	595,000	5,107,500	15,135,000	112,500	117,500	155,000
Annual Depreciation Expense		1,913,925	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069	1,888,069
SS7 Data												
Gross Replacement Cost (GRC)		145,759,593	149,477,144	151,251,259	153,026,825	154,831,341	157,004,748	163,686,307	180,382,003	182,021,808	183,663,334	185,339,076
% Infrastructure Condition 4 and 5		13.40%	12.75%	12.57%	12.40%	12.23%	12.04%	11.53%	10.44%	10.32%	10.21%	10.10%
% Infrastructure Condition 3 and above		44.40%	42.92%	42.33%	41.75%	41.18%	40.53%	38.81%	35.14%	34.75%	34.37%	34.00%
RATIOS BASED ON 3YR AVERAGE	Benchmark											
Infrastructure Renewal	100%	63.90%	123.66%	91.37%	79.76%	29.39%	30.42%	32.15%	33.15%	34.89%	35.89%	37.81%
Infrastructure Backlog	2%	2.27%	4.84%	7.25%	9.85%	10.03%	10.20%	10.17%	9.68%	9.60%	9.29%	9.77%
Asset Maintenance	1.00	1.27	0.91	1.00	0.95	0.99	1.02	1.05	1.09	1.12	1.15	1.18
Acquisition Expenditure	1.10	0.75	0.61	0.47	0.44	0.11	0.18	1.05	3.68	3.59	2.71	0.07
ACTUAL RATIO MEETING BENCHMARK												
Infrastructure Renewal		✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
Infrastructure Backlog		✗	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Asset Maintenance		✓	✗	✓	✗	✗	✓	✓	✓	✓	✓	✓
Acquisition Expenditure		✗	✗	✗	✗	✗	✗	✗	✓	✓	✓	✗

Version History

Rev No	Date	Revision Details	Author	Reviewer	Approver
1	April 2014	Initial draft	B Carter	P Turri	A Fletcher
2	June 2020	Update asset inventory and financial data	GNS	JB	JB
3	June 2021	Update asset inventory and financial data	KW	JB	JB
4	April 2022	Update asset inventory and financial data	KW	JB	JB
5	May 2023	Update asset inventory and financial data	KW	JB	JB
6	June 2025	Update asset inventory and financial data	KW	JB	RVU