



ASSET MANAGEMENT PLAN

Cloncurry Shire Council

Water Infrastructure AMP

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The entity can choose either template to write/update their plan regardless of their level of asset management maturity and in some cases may even choose to use only the Executive Summary.

The illustrated content is suggested only and users should feel free to omit content as preferred (e.g. where info is not currently available).

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

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 the services over the 10-year 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 drinking and non-drinking water services for Cloncurry, Dajarra and Kjabbi.

The water assets network comprises:

- Chinaman Creek Dam (dam wall, harvest pumps, reservoir, telemetry)
- Cloncurry and Dajarra Water Supply Network: various bores, river wells, pump stations, tanks, meters, SCADA and telemetry
- Cloncurry township Drinking Water Treatment Plant, capacity: < 5ML / day
- Cloncurry township Drinking Water Distribution System
- Dajarra Drinking Water Treatment Plant capacity: 150kL production per day / 300 kL storage
- Kjabbi settlement non-drinking water supply system

The above infrastructure assets have replacement value estimated at **\$73,704,019**.

Assets associated with the Lake Julius supply are not incorporated into this plan except in relation to operational costs of accessing the 950ML per annum allocation (\$450,000 - \$540,000 per annum).¹

1.3 Levels of Service

The allocation in the planned budget is sufficient to continue providing existing services at current levels for the planning period, subject to confirmation of more detailed information on the knowledge of the underground network in Cloncurry.

The main service consequences of the Planned Budget are:

- Maintenance of existing service levels, with potential for longer term improvements to water pressure in Cloncurry.
- Reduction in operating costs for Cloncurry and Dajarra operations.
- Adoption and delivery of CapEx program for replacement and upgrade of water assets in Cloncurry and Dajarra.
- Higher proportion of preventative to reactive maintenance work.

1.4 Future Demand

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

- Rapid population growth in Dajarra: impact of Centrex's Ardmere Phosphate Mine on Dajarra supply, treatment and distribution capabilities.
- Population growth in Cloncurry: impact of mining growth, new residential and industrial sub-divisions.

¹ Price varies based on tariff inputs, such as electricity.

- Drought and water scarcity issues where these arise.

These demands will be approached using a combination of managing and renewing 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.

- Community engagement to manage expectations in times of water scarcity

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 supply, treatment and distribution assets is estimated as **\$19,130,832** or **\$1,913,083** on average per year.

1.6 Financial Summary

1.6.1 What we will do

Estimated available funding for the 10 year period is **\$20,223,520** or **\$2,022,352** on average per year as per the Long-Term Financial plan or Planned Budget. This is **105.71%** 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 depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for water supply, treatment and distribution assets leaves suggests an **excess** of \$109,269 on 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

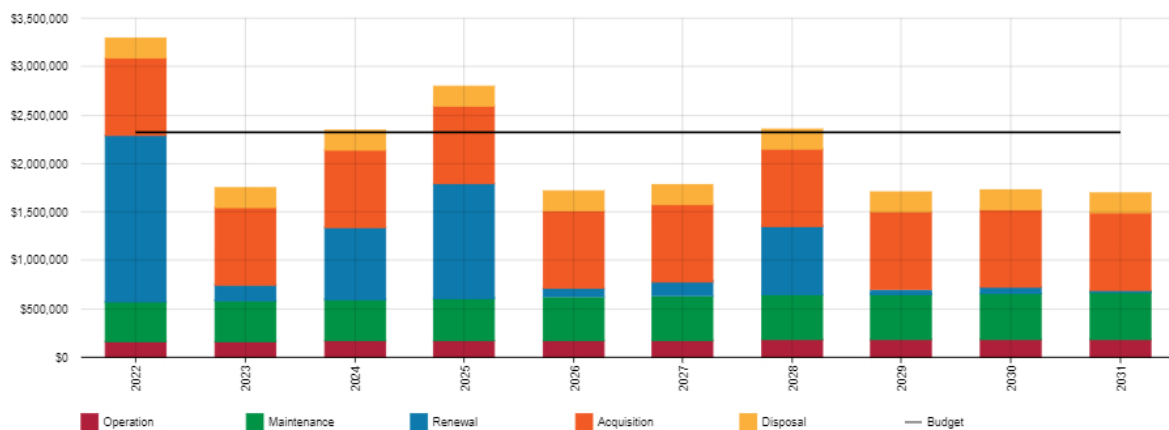


Figure Values are in current dollars.

We plan to provide water supply, treatment and distribution services by investing in the following:

- Operation, maintenance, renewal and upgrade of Cloncurry Township Water Treatment Plant & distribution system, Dajarra Township Water Treatment Plant & distribution system, Kajabbi Settlement non-potable water supply system, to meet service levels set by Cloncurry Shire Council in annual budgets.

- Development and delivery of a replacement program for underground water assets in Cloncurry.
- Investment in SCADA for all water supply (and treatment) and distribution services.

1.6.2 What we cannot do

Council is reliant on grant funding to progress major capital projects.

Our present budget levels are sufficient to continue to manage risks in the medium term, provided Council is able to continue accessing external grant funding (LGGSP, National Water Grid, Building Our Regions, Works 4 Queensland etc.) to off-set costs for major renewals and upgrades for projects such as:

- Underground asset replacement program in Dajarra
- Underground asset replacement program in Cloncurry
- Water Treatment Plant renewal and upgrade projects in Cloncurry:
 - Chlorine Dosing/Disinfection system
 - Clear Water Storage
 - Rapid Mixing Tank
 - Clarification and Filtration Systems
 - Town Booster Pumps
 - SCADA

The main risk consequences are:

- Elected member / Staff turnover and loss of corporate knowledge and capability to roll out medium-, to long-term projects
- Geopolitical impacts on costs and supply chains

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

- Investing in an asset condition assessment and replacement program for underground water assets in Cloncurry.
- Procuring strategically where value for money outcomes are achievable (e.g., principal-supplied materials etc.)
- Maintaining quality grant submission resources and practices to give Council the best chance to secure competitive grant funding
- Project advocacy with relevant agencies

1.7 Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- The timing and value of capital renewals is based on the asset register (applied by adding the useful life to the year of acquisition or year of last renewal).
- The Asset Register method was used to forecast the renewal lifecycle costs for this AM Plan. The Asset Register is based on the valuation as at 30 June 2023 (Comprehensive Revaluation).

Assets requiring renewal are identified from the asset register.

- 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,

This AM Plan is based on a mix of reliable and uncertain 'level of confidence' information.

1.8 Monitoring and Improvement Program

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

Task	Task	Responsibility	Resources Required	Timeline	Status (Mar 2024)
1	Complete comprehensive risk of the Chinaman Creek Dam	CEO	\$950,000	Jun 23	Completed Mar 2024
2	Repair/Replace harvest pumps at Dam as required	Operations Manager	\$130,000	Jun 23 Nov 24	1 x repaired 1 x under-going repair
3	Review Council's Customer Service Standards for Water & Wastewater Services (in association with QWRAP)	Operations Manager	Staff time	Sep 23	Reviewed Jun 24
4	De-sludge lagoons at Cloncurry WTP	Operations Manager	\$50,000	Jun 24	Completed Oct 2023
5	Completion of Dajarra I Reticulated Mains Replacement Project (subject to available funding)	Projects	\$2,000,000	Dec 24	TBC (subject to funding)
6	Complete production upgrade to Dajarra WTP (subject to confirmation of capability and cost)	Operations Manager	~\$120K	Nov 23	Completed
7	Installation of generator and auto-transfer switch in Dajarra to reduce issues associated with Ergon supplied power and generator	Operations Manager	~\$250,000	Nov 23	Completed Apr 2024
8	Completion of Electro-chlorination Dosing System installation at Cloncurry WTP	Operations Manager	\$800,000	Dec 23	Scheduled Sep 2024
9	Options Analysis completed for: # Clear Water Storage # Rapid Mixing Tank # Clarification & Filtration	CEO, Director Infrastructure & Environment, Director Projects	\$120,000	Oct 2023	Completed July 2024
10	Deliver renewals/upgrades to Clear Water Storage in Cloncurry (subject to receipt of funding)	CEO, Director Infrastructure & Environment, Director Projects	\$3.5m - \$4.5m	From 2025-26	
11	Deliver renewals/upgrades to Rapid Mixing Tank (subject to receipt of funding)	CEO, Director Infrastructure & Environment, Director Projects	\$1m - \$2m	From 2026-27	

Task	Task	Responsibility	Resources Required	Timeline	Status (Mar 2024)
12	Deliver renewals/upgrades to Rapid Mixing Tank (subject to receipt of funding)	CEO, Director Infrastructure & Environment, Director Projects	\$1m - \$2m	From 2026-27	
13	Adopt monthly reporting on key SWIM data as this relates to water assets and associated services	Operations Manager	Staff time	Mar 23	In place
14	Report on Queensland's Urban Potable Water & Sewerage Benchmarking Report when released	Director Infrastructure & Environment	Staff costs	Nov (annual)	Reviewed Feb 2024
15	Improved reporting to generate automated/live reporting on key water metrics	Operations Media & PR	\$5,000	Aug 23	Partially achieved
16	Operational/Maintenance checklists are entered into Reflect (daily, weekly, monthly etc.) and monthly reporting generated	Operations Manager	\$20,000 (Civica) Staff time	Dec 23	Ongoing
17	Accurate and accessible GIS database of water infrastructure	Asset Engineer	\$20,000 Staff time	Jun 23	Progressive updates
18	Progressive replacement of underground water assets	Director Infrastructure & Environment / Projects	Unknown	TBC	Not commenced
19	Reduce reliance on contractors, other internal resources for water meter reading, water meter installation, mowing of WTP etc.	Operations Manager	-\$50K	Progressive	Not commenced

2.0 Introduction

2.1 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 Cloncurry Shire Council planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Corporate and Operational Plans
- Cloncurry Shire Council's annual SWIM data submission

The infrastructure assets covered by this AM Plan include water supply, treatment and distribution assets in Cloncurry, Dajarra and Kajabbi. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

These assets are used to provide drinking as well as non-drinking water services to Cloncurry, Dajarra and Kajabbi.

The infrastructure assets included in this plan have a total replacement value of **\$73,704,019**.

Key stakeholders in the preparation and implementation of this AM 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	<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 sustainable.
CEO	<ul style="list-style-type: none"> ▪ Manage the delivery of the organisation’s objectives
Directors	<ul style="list-style-type: none"> ▪ To ensure that the asset management policy and strategy are being implemented. ▪ To ensure that financial, asset and community sustainability are embedded in decision making in relation to asset acquisitions, replacements, renewals, disposals and any relevant operational/maintenance programs.
Infrastructure & Environment	<ul style="list-style-type: none"> ▪ Develop annual and medium-term operation and maintenance programs ▪ Seek continual improvement in asset maintenance and operations ▪ Key stakeholder in asset acquisition, renewal, replacement and disposal decisions. ▪ Provide regular reporting on the compliance of services ▪ Provision of reporting on the performance of the service against budget ▪ Complete SWIM reporting ▪ Manage relationship with Regulator
Projects	<ul style="list-style-type: none"> ▪ Coordinate CapEx prioritisation processes ▪ Deliver CapEx projects in line with Project Assessment Framework and Project Management Framework
Procurement	<ul style="list-style-type: none"> ▪ To ensure Asset Management principles are embedded into RFQ and RFT processes for asset acquisitions, replacements, renewals, disposals and any relevant operational/maintenance arrangements. ▪ Work with Infrastructure and Environment to maintain inventory of critical spares
Corporate Services	<ul style="list-style-type: none"> ▪ Coordinate and provide assistance with budgetary processes ▪ Provide assistance and guidance on monthly reporting
Work Health & Safety	<ul style="list-style-type: none"> ▪ Provide oversight and guidance in relation to fulfilling PCBU’s WHS obligations
External consultancies	<ul style="list-style-type: none"> ▪ Engineering/environmental: provide subject matter expertise where required to inform asset management processes, practices and decisions. ▪ Engineering/environmental: provide advice, support and/or oversight of SCADA ▪ Rates: provide guidance and advice on setting utility pricing ▪ Laboratories: provide testing

Our organisational structure for service delivery of water infrastructure is **NOT incorporated in this AMP**.

2.2 Goals and Objectives of Asset Ownership

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
- Linking to a Long-Term Financial Plan which identifies required, affordable forecasted costs and how these 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 – identifies and quantifies risks associated with service delivery
- 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 ²
- ISO 55000³

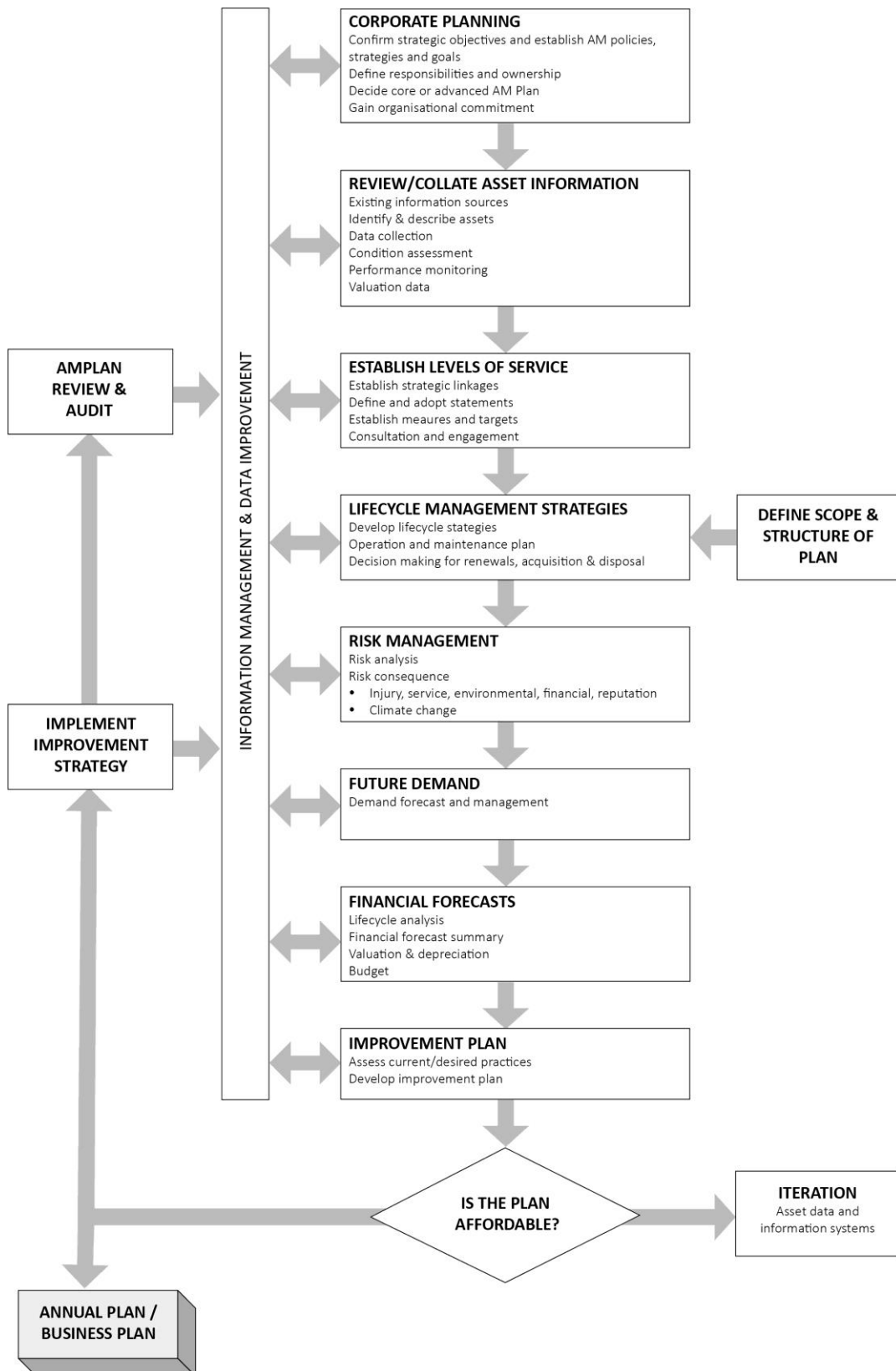
A road map for preparing an AM Plan is shown over page.

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

³ ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

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



3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

This AM Plan is prepared with reference to our regulatory obligations as a registered wastewater services provider and with reference to Council’s Customer Service Standards.⁴

3.2 Strategic and Corporate Goals

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

Our vision is:

Cloncurry: a growing Shire renowned for its friendliness and prosperity, for its outstanding communities, lifestyle, and endless opportunities.

Strategic goals have been set by the Cloncurry Shire Council. The relevant goals and objectives and how these are addressed in this AM Plan are summarised in Table 3.2.

Table 3.2: Corporate Plan Goals related to water

FOCUS	ACTIVITY	MEASURE
3. Building and Maintaining Our Infrastructure		
KSA3: Our infrastructure is strategically planned and well maintained to ensure the delivery of quality services to our community and to facilitate growth opportunities where viable.		
3.1 Asset management framework and capabilities	Council develops, implements, and maintains an effective and compliant asset management framework.	<ul style="list-style-type: none"> • Asset Management Plans in place and updated for all asset classes
3.2 Asset investments: transport, utilities, buildings, sport and recreation, plant, and fleet	Council manages, maintains, renews, and upgrades assets in line with relevant plans, policies, strategies, budgets and in line with relevant funding program requirements.	<ul style="list-style-type: none"> • Whole of Life Costing embedded in all asset investment decisions. • Operating surplus ratio
3.4 Efficient and effective services	Council invests in projects and initiatives that improve efficiencies in service delivery while achieving the same or a higher level of service.	<ul style="list-style-type: none"> • Operating Surplus Ratio
4. Valuing Our Environment		
KSA4: Our natural resources are valued, our cultural heritage is protected, and our landscape amenity is improved.		
4.4 Utilities	Council’s utility services are efficient, effective, and compliant with the Environmental Authorities and other regulatory instruments that govern these services	<ul style="list-style-type: none"> • Compliance with EA – Water • Compliance with Drinking Water Quality Management Plan

⁴ INSERT LINK TO CUSTOMER SERVICE STANDARDS...

FOCUS	ACTIVITY	MEASURE
		• OpEx cost of service per capita
5. Effective & Inclusive Governance		
KSA5: Council decision-making processes are efficient, effective, transparent, and inclusive. Decision-making promotes and balances the long-term sustainability of our community, our environment, our assets, and our finances. As an organisation, we are committed to quality customer service and continuous improvement.		
5.4 Sustainability	Council's budgeting and investment decisions ensure Council's continued financial sustainability	• Financial sustainability ratios

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of water supply, treatment and distribution services are outlined in Table 3.3.

Table 3.3: Legislative Requirements

Legislation	Requirement
Local Government Act 2009	Adherence to local government principles, including: (a) transparent and effective processes, and decision-making in the public interest; and (b) sustainable development and management of assets and infrastructure, and delivery of effective services
Local Government Regulation 2012	Section 168 A local government's long-term AM plan must- (a) provide for strategies to ensure the sustainable management of the assets mentioned in the local government's asset register and the infrastructure of the local government; and (b) state the estimated capital expenditure for renewing, upgrading, and extending the assets for the period covered by the plan; and (c) be part of, and consistent with, the long term financial forecast.
Water Supply (Safety and Reliability) Act 2008	1) The purpose of this Act is to provide for the safety and reliability of water supply. 2) The purpose is achieved primarily by – (a) Providing for – i. a regulatory framework for providing water and sewerage services in the State, including functions and powers of service providers; and ii. a regulatory framework for providing recycled water and drinking water quality, primarily for, - protecting public health; - regulation of referable dams; and - flood mitigation responsibilities and protecting interests of customers of service providers.
Australian Drinking Water Guidelines 2011 (ADWG 2011)	The ADWG provide two types of guideline values or limits: • Health related guideline value (safe water) • Aesthetic guideline value (good water) The guidelines are not mandatory standards but are intended for use by agencies with responsibilities associated with drinking water supply to report any breach of ADWG health related limits

Legislation	Requirement
Environmental Protection Act 1994	Provides for the granting of environmental authorities for sewage treatment activities (ERA 63). These activities must address the regulatory requirements set out in the Environmental Protection Regulation 2008 and the standard criteria contained in the EP Act.
Public Health Act 2005	The object of this Act is to protect and promote the health of the Queensland public.

3.4 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 3.4: Customer Values

Service Objective: to provide safe and reliable drinking water services to Cloncurry and Dajarra. To provide a reliable non-potable water service to Kjabbi.

Customer Values	Customer Satisfaction Measure	Current Feedback	Expected Trend Based on Planned Budget
Quality	No. of complaints related to water taste, appearance etc.	Good quality over 5+ year period	Trend expected to continue
Reliability	No. of unplanned outages. No. of water restrictions imposed	Cloncurry: good Dajarra: reliability continues to be an issue for 3 months of the year	Cloncurry: trend expected to continue. Dajarra: trend expected to improve.
Value for Money	Council rates equal to/lower than relevant cohort / Statewide benchmark	Higher than cohort (though Cloncurry provides a significantly higher kL per connection for current levy than cohort) ⁵	Gap between typical Cloncurry water bill and cohort to progressively reduce, while allowing for kL per connection disparity.

3.5 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?

⁵ Refer to, "Annual potable water supplied per connection", p. 19, Queensland's Urban Potable Water and Sewerage Benchmarking: 2021/22: <file:///cloncurry-file01/RedirectedFoldersS/cscceo/Desktop/Asset%20Management%20Session/Cert%20in%20AMP/Water/Benchmarking-report-21-22-MLXL-final.pdf>

In Table 3.5 under each of the service measures 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.

These 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.

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 / Quality (what is the condition or quality of the service)	Service meets Australian Drinking Water Guideline requirements	Water complaints / 1000 connections	<0.5 (Sourced from "Queensland's Urban Potable Water & Sewerage Benchmarking Report Feb 2021/2022")	Trend expected to continue
	Service provided represents value for money	Lower % increase in water charges than cohort	3.5% increase in 2022-23 was lower than cohort	Trend expected to continue
	Confidence levels		Medium to High	Medium to High
Function (is the service fit for purpose?)	Water assets and services are fit for purpose (not gold plated, not cheap and nasty)	Water main breaks per 100km water main	<10 (less than cohort and statewide median (18.6) Sourced from "Queensland's Urban Potable Water & Sewerage Benchmarking Report Feb 2021/2022")	Trend expected to continue
	Confidence levels		Medium	Medium to High
	Capacity	Water is reliably available to residents	Annual potable water supplied per connection No. days of water restrictions	Typical supply (1050kL/connection/annual) is larger than state-wide medium (621.55) and cohort wide medium (442.65) Sourced from "Queensland's Urban Potable Water & Sewerage Benchmarking Report Feb 2021/2022") Permanent Level 1 Water Restrictions in Cloncurry Occasional Water Restrictions in Dajarra
Confidence levels			Medium	Medium to High

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 (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.⁶

Table 3.6 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 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
TECHNICAL LEVELS OF SERVICE				
Acquisition	Acquisitions / upgrades enable economic growth / population growth	New infrastructure enables new developments (industrial, residential subdivision) and generates a return on investment	Extensions to reticulated network in Cloncurry under development.	Industrial subdivision planning completed Residential subdivision planning completed
	Acquisitions to reduce operating costs	Improved management of Iron and Manganese enables cost reduction	Opportunities to mitigate Iron and Manganese treatment under investigation	DMI65 or equivalent solution reduces \$ spend on treatment (e.g., ~\$100-\$200K reduction in pot perm costs)

⁶ IPWEA, 2015, IIMM, p 2|28.

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
	Upgrade to Dajarra Production Capacity	kL per day % downtime due to fault (particularly during Nov-Feb) Install and commission new back-up generator with auto-transfer switch	150kL per day To be confirmed Funding application submitted to Disaster Ready Fund	> 200-250kL <5% Funding secured. Generator installed and commissioned.
	Supervisory Control and Data Acquisition	Easy monitoring and accessibility to SCADA system for Council officers to enable prompt response to critical events in daily operation to achieve desired customer level of service and commitments to community	Existing SCADA and Telemetry applied in Cloncurry WTP is New Zealand specific (not Australia mainstream) and adopted closed protocol, which leads to a few risks, like its future services and upgrade activities being too expensive as well as not geographically accessible for Cloncurry.	Build an integrated, Australian specific and open protocol SCADA system for the water supply, treatment and distribution services delivered by Council.
		Budget	\$650,000	\$800,000 / TBC
Operation	Routine inspections undertaken	Daily, weekly, monthly inspections programmed into Reflect	Under development. To be implemented in 2023-24. Staff time + Reflect budget and retainer	Monthly reporting against milestones / KPIs is routine
	Staffing levels and skill sets	Training	Training budgets allocated to key areas: e.g., Pro Cert in AMP, Cert III / IV in Water Operations	Ongoing training to be provided: e.g., Pro Cert in AMP, Cert III / IV in Water Operations, traineeships and apprenticeships offered. Training budget captured elsewhere
	Verification Monitoring	Verification monitoring in line with DWQMP	Compliant	Compliant
	DWQMP compliance	Compliance with reporting and auditing requirements	Compliant, but lagging in updating of Risk Management Improvement Plans	Compliant
		Budget	\$163,532	\$174,480

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance*	Recommended Performance **
Maintenance	Critical spares	Stock levels of critical spares	Critical spares list to be developed, confirmed and stock renewal process implemented	Stock management of critical spares to be BAU and budgeted for annually
	Maintenance program delivered	Maintenance program developed, delivered and reported upon	Programming being set-up in Reflect	
	Safety of distribution system	Water Quality	Flushing program implemented in 2022-23.	Maintain quarterly flushing program
		Budget	\$408,820	\$450,623
Renewal	Progressive renewal / replacement of aging water distribution network	Describe the Measure being used for performance monitoring	No action taken	Develop and progressive implementation of AC pipe replacement program
	Disinfection unit renewal	Replacement of existing chlorination unit	Chlorine gas cylinder dosing system put strains on community safety and operation efficiency	Replacement with electro-chlorination which is safer as well as more cost effective
		Budget	\$800,000	\$487,980
Disposal	Asset disposal	Water assets disposed of in line with disposal plan	No current disposals plan	Establish a Disposal Plan for the Planning Period based on outcome of condition assessments
		Budget	\$300,000	\$200,000

Note: * Current activities related to Planned Budget.

** Expected performance related to forecast lifecycle costs.

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.

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 AM Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Acquisition of new assets based on extension of service area for reticulated network	Brisbane St. / Douglas St. residential sub-divisions Industrial sub-division Stage 2	Complete initial designs in 2022-23 / 2023-24.	Expansion in service area → increase in operational and maintenance costs	Progress expansion of network through Council's Project Assessment Framework and Budget Prioritisation processes. Aim to access LGGSP or BoR funding or similar
Population growth - Cloncurry	2021 Census indicates population growth of 616 since 2016.	Mild population projected by Council (not by ABS or QGSO)	Additional services may be required	Adequate planning for growth
Population Growth - Dajarra	Phosphate mining activity in Dajarra potentially leading to substantial population increase in percentage terms	+70 persons in Dajarra over the next 2 years	Substantive impact on ability to provide treated water services (compounded by Ergon)	Impact to be monitored. Negotiations with Ergon + Phosphate Mine. Dajarra Dual Reticulation Project

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 Cloncurry Shire 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 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.⁷

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

Risk and opportunities identified to date are shown in Table 4.5.1

Table 4.5.1 Managing the Impact of Climate Change on Assets and Services

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Extreme climate events occur more frequently	Impact of extreme weather on asset life and functionality	Reduced useful life of equipment, pipes, materials, electrical control panels, valves, civil structures, etc. due to extreme weather	Enhance the level of protection for equipment, pipes, materials, electrical, control panel, valves, civil structures, etc.
Extreme climate events occur more frequently	Increased average daily potable/non-potable (irrigation) demand	Supply can not keep up with demand, water outages, water restrictions in place	Build back-up town reservoir. WTP Capacity upgrades program

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; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

Table 4.5.2 summarises some asset climate change resilience opportunities.

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
Integrated SCADA system	Power outages lead to loss of remote communication infrastructures damaged in extreme weather effects	Consider Back up power supply/UPS/Generator Increase IP (Ingress protection) level
Airport chlorine dosing system	Exposures to flood	Built on elevated platform

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.

⁷ IPWEA Practice Note 12.1 Climate Change Impacts on the Useful Life of Infrastructure

5.0 LIFECYCLE MANAGEMENT PLAN

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

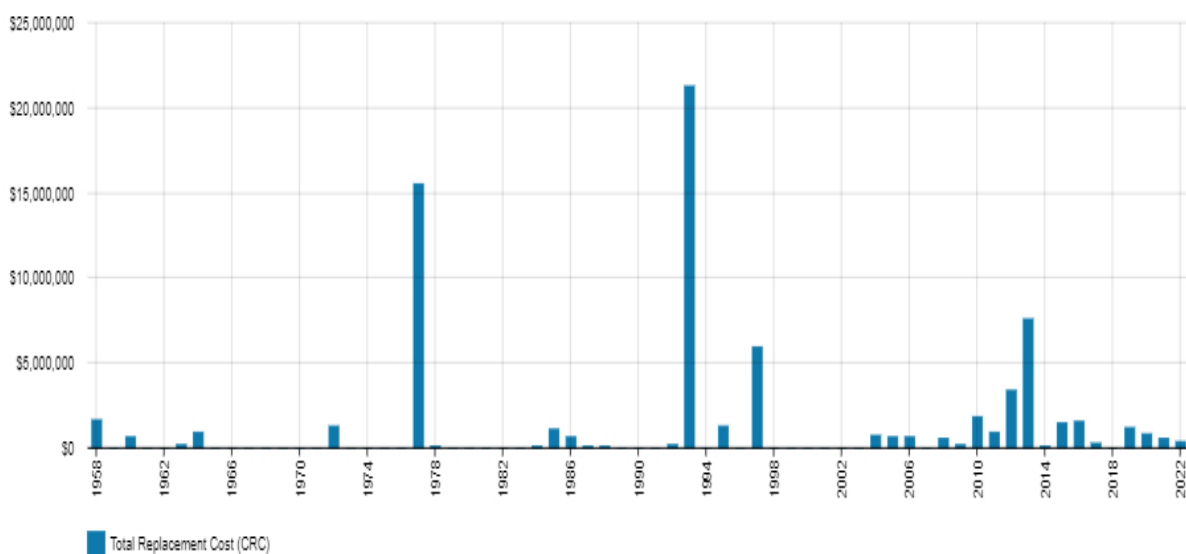
5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AM 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
Chinaman Creek Dam	Dam reservoir, wall, harvest pumps	\$21,314,353
Reservoirs, Storage, Weirs, Treatment Ponds, Tanks	Cloncurry & Dajarra (reservoirs, weir, clear water storage, raw water ponds)	\$8,494,073
Water Treatment Plant - Cloncurry	Filters, membranes, dosing systems, SCADA, instruments, mechanical, electrical, generators etc.)	\$7,552,452
Water Treatment Plant – Dajarra		\$589,085
Water Mains	Cloncurry: Dajarra:	\$23,263,455
Pumps and Pump Stations	Cloncurry, Dajarra, Kajabbi	\$3,171,948
Bores and Wells	Cloncurry, Dajarra, Kajabbi	\$6,541,772
Water meters	Cloncurry, Dajarra	\$1,983,924
Irrigation	Equestrian Centre, Sheaffe, MKP, cemetery only (at this stage)	\$740,105
Other		\$52,852
TOTAL		\$73,704,19



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. 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
Dajarra	Ergon back-up power supply not adequate to run WTP. New generator and auto-transfer switch required.
Dajarra	Electrical issues impact on ability of plant to meet production requirements.
Cloncurry	1 x harvest pump out of action

The above service deficiencies were identified from current experience.

5.1.3 Asset condition

Condition is currently monitored to varying degrees.

Condition is measured using a 1 – 5 grading system⁸ as detailed in Table 5.1.3. 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.

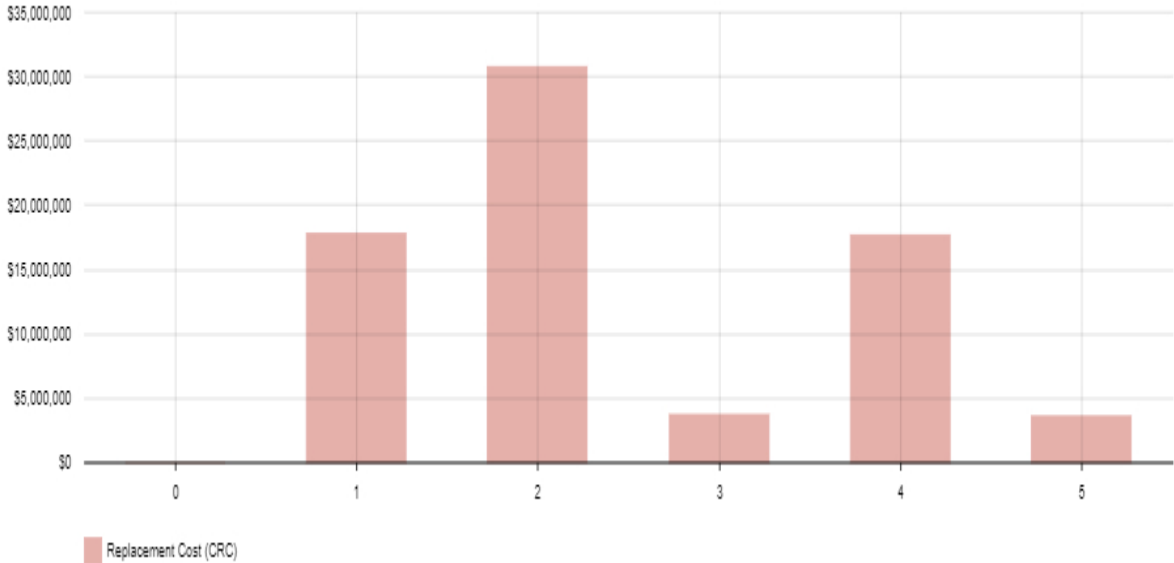
Table 5.1.3: Condition Grading System

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

⁸ IPWEA, 2015, IIMM, Sec 2.5.4, p 2|80.

The condition profile of our assets is shown in Figure 5.1.3.

Figure 5.1.3: Asset Condition Profile



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.

The trend in maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget \$
2022	\$572,352
2023	\$584,738
2024	\$597,144

Maintenance budget levels are considered to be adequate to meet projected 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.

The service hierarchy is shown in Table 5.2.2.

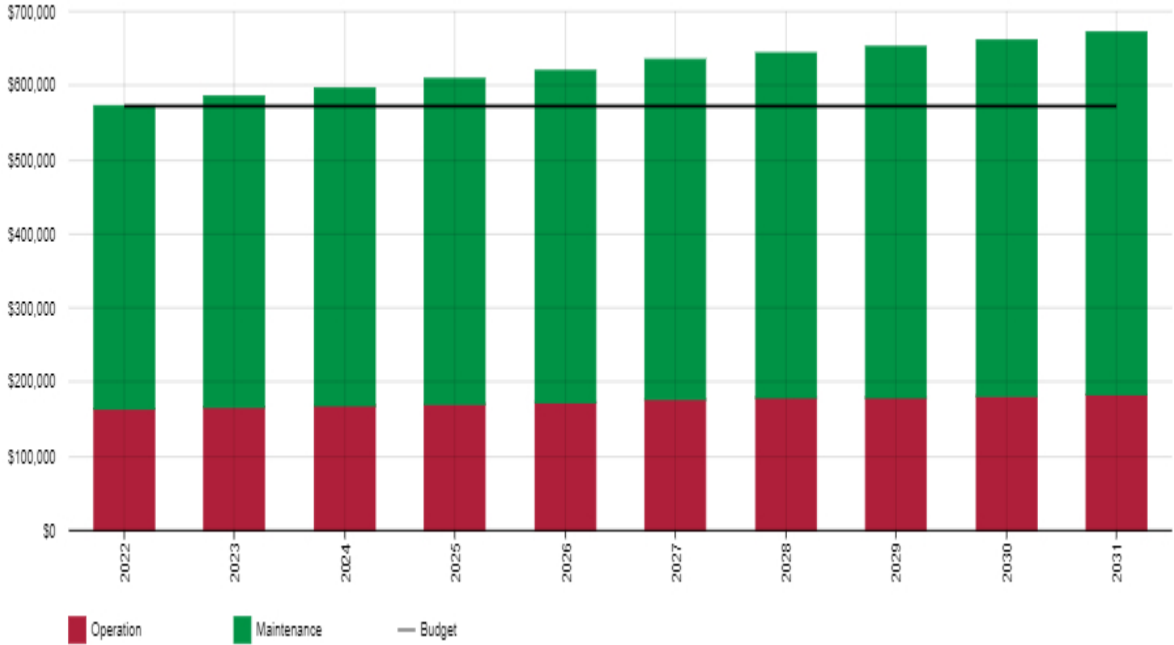
Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Service Level Objective
Cloncurry township water supply, treatment and distribution	Efficient, effective and safe service provided
Dajarra township water supply, treatment and distribution	Efficient, effective and safe service provided
Kajabbi township	Non-potable water service accessible reliably

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.

The forecast maintenance and operational costing trends should be sufficient provided that Council attends to its renewal program for assets in a timely fashion. Higher levels of servicing will be required if assets are operated at a condition rating of 4-5

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 2022.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Element	Useful life
Bore	Electrical	20
	Pipework	50
	Pump	30
	Structural	50
Dam	Structural	150
	Telemetry	15
Miscellaneous		20
Pond	Telemetry	15
	Structural	60
Pump Station	Pump	20
	Electrical	30
	Mechanical	20
	Pipework	50
	Structural	50
Reservoir	Liner	15
	Structural	50
	Reservoir	50
Water Main	Mains	60-80
	Mains	60-80

Asset (Sub)Category	Element	Useful life
Well	Well	80
	Electrical	30
	Pipework	40
	Pump Unit	20
Tank	Base	50
	Structural	50
	Civil	100
	Electrical	15
Weir	Structural	120

The estimates for renewals in this AM Plan were based on the Asset Register 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).⁹

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.¹⁰

The ranking criteria used to determine priority of identified renewal proposals is detailed in Table 5.3.1.

Table 5.3.1: Renewal Priority Ranking Criteria

Criteria	Weighting
Asset condition	10-30%
Asset criticality	10-30%
Impact on operating costs(whole of life costs)	10-30%
Impact on service level commitments	10-30%

⁹ IPWEA, 2015, IIMM, Sec 3.4.4, p 3|91.

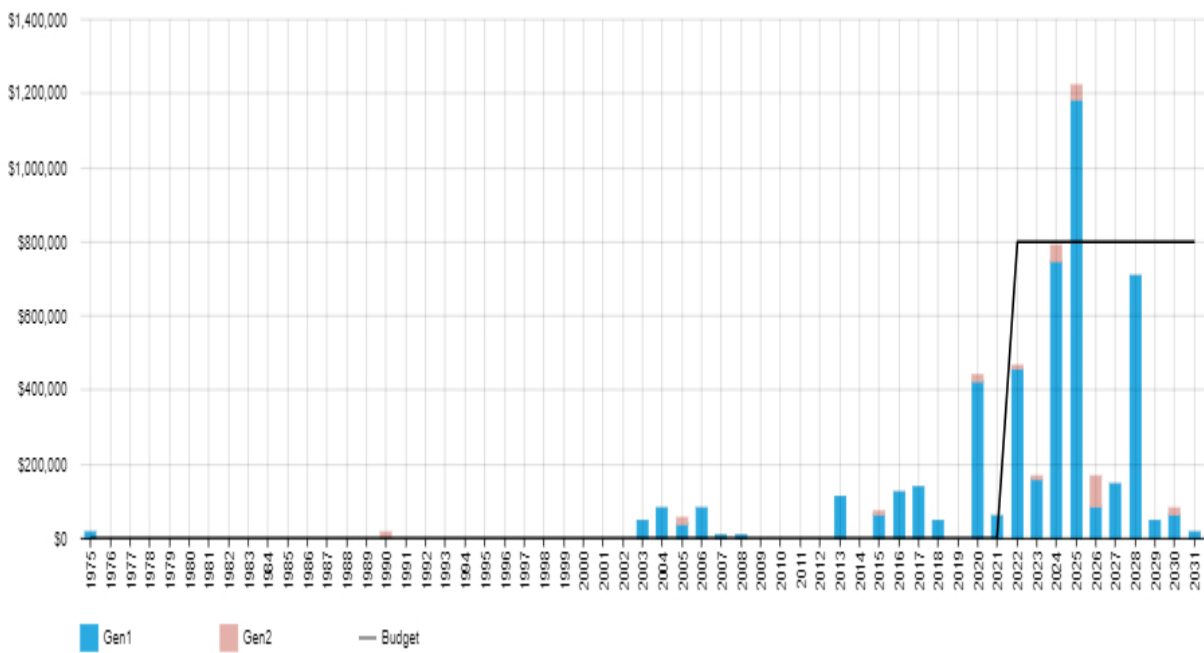
¹⁰ Based on IPWEA, 2015, IIMM, Sec 3.4.5, p 3|97.

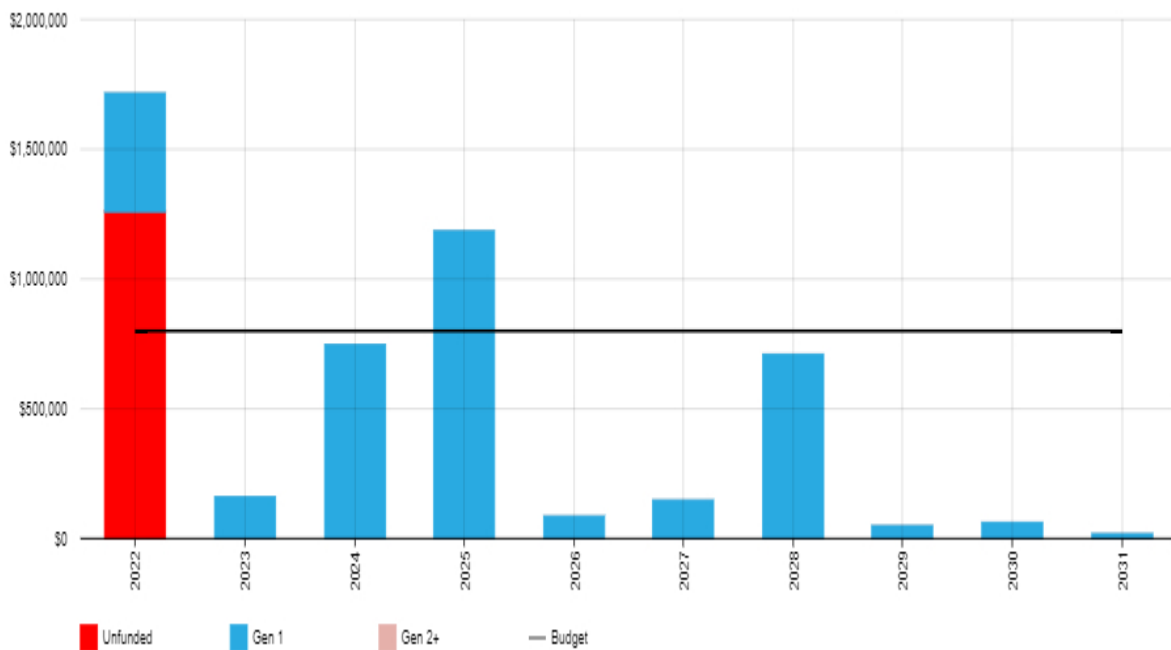
Criteria	Weighting
Availability of grant funding	10-30%
Total	100%

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 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4.1: Forecast Renewal Costs





All figure values are shown in current day dollars.

Council will need to commence planning for the renewal of underground water assets in the next few years to ensure it is prepared to secure external funding to assist in this renewal program.

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 Cloncurry Shire Council.

5.5.1 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 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 5.5.1.

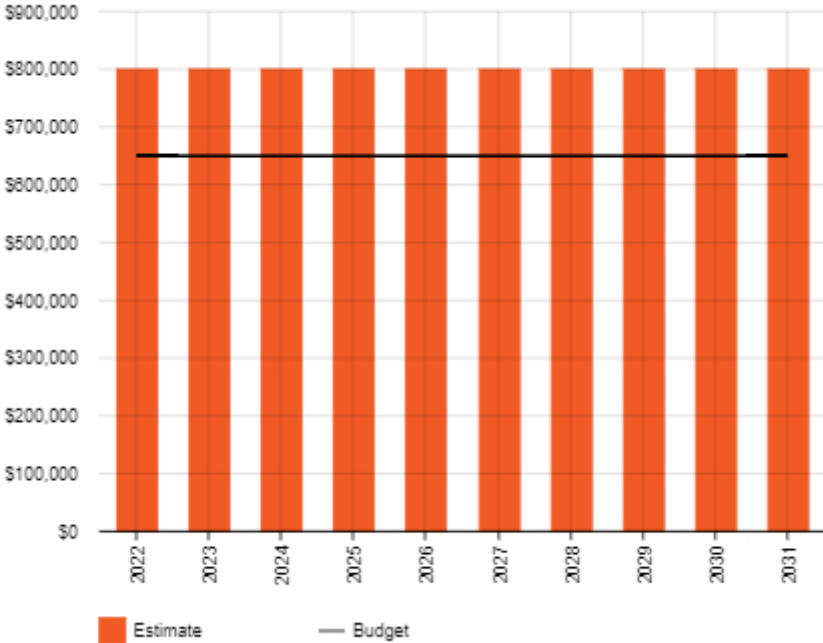
Table 5.5.1: Acquired Assets Priority Ranking Criteria

Criteria	Weighting
Impact on operating costs / asset sustainability ratio	50%
Impact on town growth	25%
Impact on economic development	25%
Total	100%

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarized in Figure 5.5.1 and shown relative to the proposed acquisition 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 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. 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.

Council will need to secure external funding to meet acquisition costs for the following:

- Electro-chlorination project
- Dajarra dual reticulation project
- SCADA upgrades
- Railway Street water mains extension
- 2nd rapid mixing tank
- New/upgraded reservoirs

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. A summary of the disposal costs and estimated reductions in annual operations and maintenance of disposing of the assets are also outlined in Table 5.6. Any costs or revenue gained from asset disposals is included in the long-term financial plan.

Table 5.6: Assets Identified for Disposal

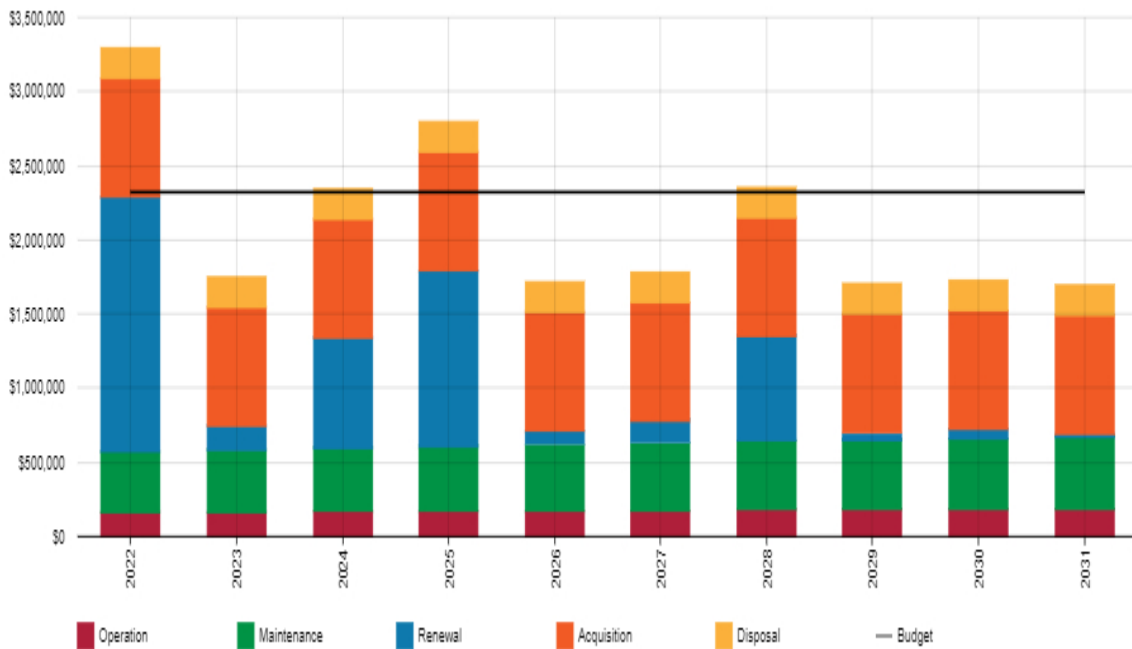
Asset	Reason for Disposal	Timing	Disposal Costs	Operations & Maintenance Annual Savings
No current disposals planned				

5.7 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.7.1. 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 5.7.1: 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’¹¹.

An assessment of risks¹² 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
Cloncurry Water Treatment Plant	Loss of Power for extended period	High level water restrictions / loss of supply to town
Dajarra Water Treatment Plant	Loss of power	High level water restrictions / loss of supply to town
Reticulated water network	Multiple failures / ruptures based on age of infrastructure	Loss of supply to towns

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.

¹¹ ISO 31000:2009, p 2

¹² REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

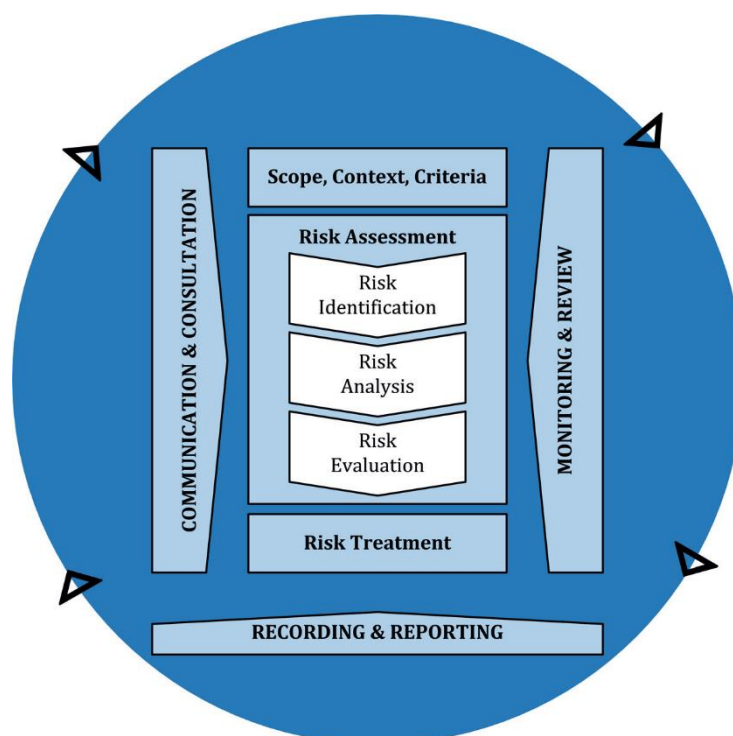


Fig 6.2 Risk Management Process – Abridged
 Source: ISO 31000:2018, Figure 1, p9

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 risks¹³ 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 6.2. It is essential that these critical risks and costs are reported to management and to 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 *	Treatment Costs
Dajarra WTP	Loss of Power / Inadequate Power leading to loss of production capability and inability to supply water to town	VH	# Dajarra Dual Retic # Electrical Upgrade # Generator	L	\$2m <\$1m ~\$200K

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

¹³ REPLACE with Reference to the Corporate or Infrastructure Risk Management Plan as the footnote

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.

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

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 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:

- Replacement of underground assets and major acquisition projects in the absence of external funding co-contributions.

6.4.2 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:

- Any service trade-off linked to operations and maintenance is most likely to be derived from organisational instability as opposed to financial shortfalls.
- Any capital shortfall would be linked to insufficient planning / design to attract external funding to renew Council's underground wastewater assets.

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:

- Increasing reactive maintenance costs
- Increased water restrictions imposed due to difficulties meeting demand profiles

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 AM Plan. The financial projections will be improved as the discussion on desired levels of service and asset performance matures.

7.1 Financial Sustainability and Projections

7.1.1 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 Ratio¹⁴ 163.94%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 163.94% of the funds required for the optimal renewal of assets.

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 \$1,113,083 average per year.

The proposed (budget) operations, maintenance and renewal funding is \$1,372,352 on average per year giving a 10 year funding excess of \$259,269 per year. This indicates that 123.29% 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.

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

Table 7.1.3 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 2022 dollar values.

¹⁴ AIFMM, 2015, Version 1.0, Financial Sustainability Indicator 3, Sec 2.6, p 9.

Table 7.1.2: Forecast Costs (Outlays) for the Long-Term Financial Plan

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2022	800000	163532	408820	1718006	200000
2023	800000	166103	418636	160760	200000
2024	800000	168678	428467	746200	200000
2025	800000	171256	438313	1183371	200000
2026	800000	173839	448175	87542	200000
2027	800000	176426	458053	146101	200000
2028	800000	178353	465408	709672	200000
2029	800000	180279	472764	48455	200000
2030	800000	182206	480120	62874	200000
2031	800000	184132	487476	16814	200000

7.2 Funding Strategy

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

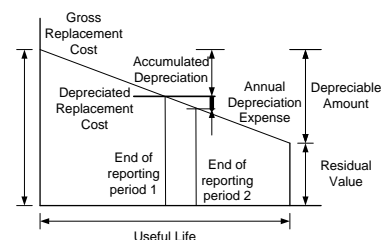
The financial strategy of the entity determines how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at fair value at cost to replace service capacity:

Replacement Cost (Current/Gross)	\$73,704,019
Depreciable Amount	\$73,704,019
Depreciated Replacement Cost ¹⁵	\$28,244,428
Depreciation	\$1,270,029



7.3.2 Valuation forecast

Asset values are forecast to increase as additional assets are added to the 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 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:

- Asset renewal costs are based on asset valuation data rather than estimates derived from recent work or detailed designs. Getting this data and these costings is an Improvement Item.

¹⁵ Also reported as Written Down Value, Carrying or Net Book Value.

- Council’s ability to fund asset renewals is based on the assumption that funding programs such as / similar to LGGSP, W4Q and Building Our Regions continue and that Council is successfully able to access this funding.

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 scale¹⁶ in accordance with Table 7.5.1.

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	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. 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 $\pm 10\%$
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 $\pm 25\%$
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 $\pm 40\%$
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 7.5.2.

Table 7.5.2: Data Confidence Assessment for Data used in AM Plan

Data	Confidence Assessment	Comment
Demand drivers	Medium – High	Population anticipated to be stable/slight growth
Growth projections	Medium – High	QGSO figures yet to be updated (15.10.2022)
Acquisition forecast	Low – Medium	Potential network expansion not yet concept designed or costed (15.10.2022)
Operation forecast	Medium	Based on historical costs – fairly reliable indicator
Maintenance forecast	Medium	Based on historical costs
Renewal forecast - Asset values	Low – Medium	Replacement costs based on asset valuation rather than engineering / QS assessment
- Asset useful lives	High	No issues with asset lives. Will need to be reviewed following any major renewal process
- Condition modelling	Low	Poor data on underground asset condition
Disposal forecast	Low – Medium	No current disposal plan or program.

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

¹⁶ IPWEA, 2015, IIMM, Table 2.4.6, p 2 | 71.

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices¹⁷

8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is SynergySoft/Altus.

8.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is SynergySoft/Altus and Reflect/Recover.

8.2 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 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline	Status (Mar 2024)
1	Complete comprehensive risk of the Chinaman Creek Dam	CEO	\$950,000	Jun 23	Completed Mar 2024
2	Repair/Replace harvest pumps at Dam as required	Operations Manager	\$130,000	Jun 23 Nov 24	1 x repaired 1 x under-going repair
3	Review Council's Customer Service Standards for Water & Wastewater Services (in association with QWRAP)	Operations Manager	Staff time	Sep 23	Reviewed Jun 24
4	De-sludge lagoons at Cloncurry WTP	Operations Manager	\$50,000	Jun 24	Completed Oct 2023
5	Completion of Dajarra I Reticulated Mains Replacement Project (subject to available funding)	Projects	\$2,000,000	Dec 24	TBC (subject to funding)
6	Complete production upgrade to Dajarra WTP (subject to confirmation of capability and cost)	Operations Manager	~\$120K	Nov 23	Completed
7	Installation of generator and auto-transfer switch in Dajarra to reduce issues associated with Ergon supplied power and generator	Operations Manager	~\$250,000	Nov 23	Completed Apr 2024
8	Completion of Electro-chlorination Dosing System installation at Cloncurry WTP	Operations Manager	\$800,000	Dec 23	Scheduled Sep 2024

¹⁷ ISO 55000 Refers to this as the Asset Management System

Task	Task	Responsibility	Resources Required	Timeline	Status (Mar 2024)
9	Options Analysis completed for: # Clear Water Storage # Rapid Mixing Tank # Clarification & Filtration	CEO, Director Infrastructure & Environment, Director Projects	\$120,000	Oct 2023	Completed July 2024
10	Deliver renewals/upgrades to Clear Water Storage in Cloncurry (subject to receipt of funding)	CEO, Director Infrastructure & Environment, Director Projects	\$3.5m - \$4.5m	From 2025-26	
11	Deliver renewals/upgrades to Rapid Mixing Tank (subject to receipt of funding)	CEO, Director Infrastructure & Environment, Director Projects	\$1m - \$2m	From 2026-27	
12	Deliver renewals/upgrades to Rapid Mixing Tank (subject to receipt of funding)	CEO, Director Infrastructure & Environment, Director Projects	\$1m - \$2m	From 2026-27	
13	Adopt monthly reporting on key SWIM data as this relates to water assets and associated services	Operations Manager	Staff time	Mar 23	In place
14	Report on Queensland's Urban Potable Water & Sewerage Benchmarking Report when released	Director Infrastructure & Environment	Staff costs	Nov (annual)	Reviewed Feb 2024
15	Improved reporting to generate automated/live reporting on key water metrics	Operations Media & PR	\$5,000	Aug 23	Partially achieved
16	Operational/Maintenance checklists are entered into Reflect (daily, weekly, monthly etc.) and monthly reporting generated	Operations Manager	\$20,000 (Civica) Staff time	Dec 23	Ongoing
17	Accurate and accessible GIS database of water infrastructure	Asset Engineer	\$20,000 Staff time	Jun 23	Progressive updates
18	Progressive replacement of underground water assets	Director Infrastructure & Environment / Projects	Unknown	TBC	Not commenced
19	Reduce reliance on contractors, other internal resources for water meter	Operations Manager	-\$50K	Progressive	Not commenced

Task	Task	Responsibility	Resources Required	Timeline	Status (Mar 2024)
	reading, water meter installation, mowing of WTP etc.				

8.3 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 maximum life of 4 years and is due for complete revision and updating **every two years**.

8.4 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 the 1-5 year detailed works programs, budgets, business plans and corporate structures consider 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 Organisational target (this target is often 90 – 100%).

9.0 REFERENCES

- IPWEA, 2006, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
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- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
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- 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
- Cloncurry Shire Council, Corporate Plan 2021-26.

10.0 APPENDICES

Appendix A Acquisition Forecast

A.1 – Acquisition Forecast Assumptions and Source

Council has currently allocated \$800,000 per annum to planning for future acquisition. Council doesn't anticipate any donated assets.

A.2 – Acquisition Project Summary

Projects not listed.

A.3 – Acquisition Forecast Summary

NAMS+ Outputs Summary for Acquisition

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2022	800,000	0	368520
2023	800,000	0	370363
2024	800,000	0	372215
2025	800,000	0	374076
2026	800,000	0	375946
2027	800,000	0	75565
2028	800,000	0	75641
2029	800,000	0	75716
2030	800,000	0	75792
2031	800,000	0	75868

Appendix B Operation Forecast

B.1 – Operation Forecast Assumptions and Source

The operations budget is based on historical and current service levels. Following a clean up of allocations between operations and maintenance in Council’s accounting system, these figures will likely rise.

B.2 – Operation Forecast Summary

NAMS+ Outputs Summary for Operation

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2022	163532	2571	163532
2023	163532	2575	166103
2024	163532	2579	168678
2025	163532	2583	171256
2026	163532	2587	173839
2027	163532	1926	176426
2028	163532	1926	178353
2029	163532	1927	180279
2030	163532	1927	182206
2031	163532	1927	184132

Appendix C Maintenance Forecast

C.1 – Maintenance Forecast Assumptions and Source

The maintenance budget is based on historical and current service levels. These appear to be adequate. The key challenge relates to organisational stability and the ability to roll out programmed maintenance activities.

C.2 – Maintenance Forecast Summary

NAMS+ Outputs Summary for Maintenance

Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2022	408820	9816	408820
2023	408820	9831	418636
2024	408820	9847	428467
2025	408820	9862	438313
2026	408820	9878	448175
2027	408820	7355	458053
2028	408820	7355	465408
2029	408820	7356	472764
2030	408820	7357	480120
2031	408820	7357	487476

Appendix D Renewal Forecast Summary

D.1 – Renewal Forecast Assumptions and Source

The current renewal forecast is derived from asset condition and remaining useful life in the asset register.

D.2 – Renewal Project Summary

The project titles included in the lifecycle forecast are **not** included here.

D.3 – Renewal Forecast Summary

Data from NAMS+ Renewal Forecast

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2022	1718006	800000
2023	160760	800000
2024	746200	800000
2025	1183371	800000
2026	87542	800000
2027	146101	800000
2028	709672	800000
2029	48455	800000
2030	62874	800000
2031	16814	800000

D.4 –Renewal Plan

Attached separately at >500 lines

Appendix E Disposal Summary

E.1 – Disposal Forecast Assumptions and Source

Council currently has no Disposals Plan for water assets. This budget will be refined further in the next iteration of the plan scheduled for December 2023.

E.2 – Disposal Project Summary

Council currently has no Disposals Plan for water assets.

E.3 – Disposal Forecast Summary

NAMS+ Outputs Summary for Disposal

Table E3 – Disposal Activity Summary

Year	Disposal Forecast	Disposal Budget
2022	200000	300000
2023	200000	300000
2024	200000	300000
2025	200000	300000
2026	200000	300000
2027	200000	300000
2028	200000	300000
2029	200000	300000
2030	200000	300000
2031	200000	300000

Appendix F Budget Summary by Lifecycle Activity

Maintenance and Operations based on historical actuals.

Renewals based primarily on asset register.

The disposal budget is so generous in anticipation of water mains renewals and the prospect of encountering asbestos cement. It is unlikely that the costs would be so high.

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2022	650000	163532	408820	800000	300000	2322352
2023	650000	163532	408820	800000	300000	2322352
2024	650000	163532	408820	800000	300000	2322352
2025	650000	163532	408820	800000	300000	2322352
2026	650000	163532	408820	800000	300000	2322352
2027	650000	163532	408820	800000	300000	2322352
2028	650000	163532	408820	800000	300000	2322352
2029	650000	163532	408820	800000	300000	2322352
2030	650000	163532	408820	800000	300000	2322352
2031	650000	163532	408820	800000	300000	2322352