WATER SUPPLY
Asset Management Plan
2022-2025

DRAFT March 2022

ROUS
COUNTY COUNCIL

BULK WATER SUPPLY | WEED BIOSECURITY | FLOOD MITIGATION

File no.:	Next review date: June 2025		
Purpose and description	Version	Status	Date
Provides detailed plan for managing Council's water assets to achieve asset management objectives	0.1	DRAFT	10/08/2021
	0.2	FINAL DRAFT	04/03/2022
	1.0	ADOPTED	
Document review and approval			
Name	Action	Initial	Sign off date
Asset Management System Officer	Author	KE	04/03/2022
Dams & Treatment Engineering Manager	Review & Endorse		
Operations Engineering Manger			
Group Manager Operations			
Asset Planning Engineer			
Strategic Planning Engineer			
Group Manger Planning & Delivery			
Finance Manager			
Group Manager Corporate & Commercial			
Leadership Team	Approve		

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1. Executive Summary

This Asset Management Plan provides an overview of how we manage and operate our water assets. Water assets include catchments, sources, treatment, bulk distribution and retail distribution.

Levels of Service

Our level of service objectives cover:

- Quality
- Reservoir service & notification levels
- Demand management
- Continuity of supply
- Monitoring
- Catchment management plans
- Quantity
- Measurement of bulk water supply
- Restriction of supply
- Infrastructure access
- Reporting
- Integrated Water Cycle Management

Risk Management

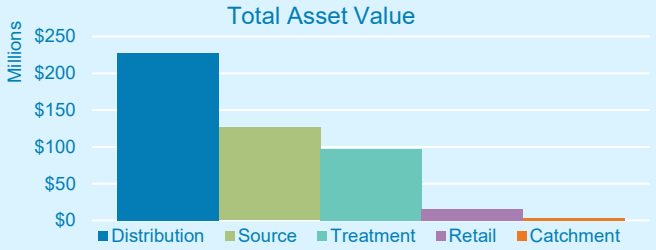
- Critical assets – an improvement action has been identified to improve identification of our critical assets
- Asset, Operational & Environmental risks – high level risks associated with our assets and their operation have been identified

Demand

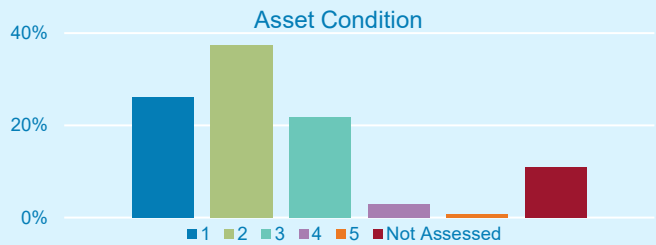
Our demand forecast was updated in 2020 as part of the Future Water Project 2060 to support strategic planning to ensure long-term water supply security for the region. With forecasted population growth, the increase in demand on our drinking water supply is expected to increase by 37% by 2060. Climate forecasts also predict a reduction in available surface water by 22% by 2060. Based on current growth, water supply demand will exceed reliable supply by 2024. The Future Water Project 2060 aims to address this and will result in capital investment for new and upgraded assets and operational changes.

Asset Information

We maintain a water asset base valued at $469 million across our four constituent councils.



The highest value water assets are currently condition assessed as part of our revaluation process every four years. Approximately half our assets have not been condition assessed, however these are low value assets accounting for around 6% of the total value.

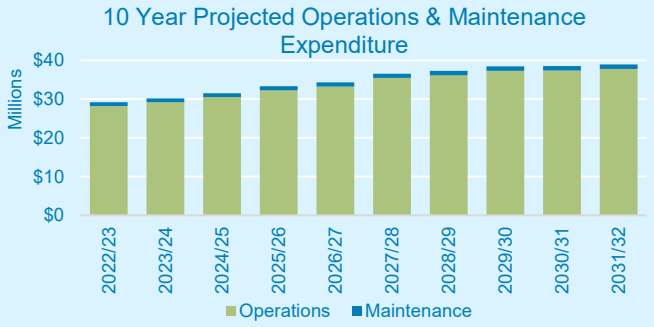


Monitoring & Improvement

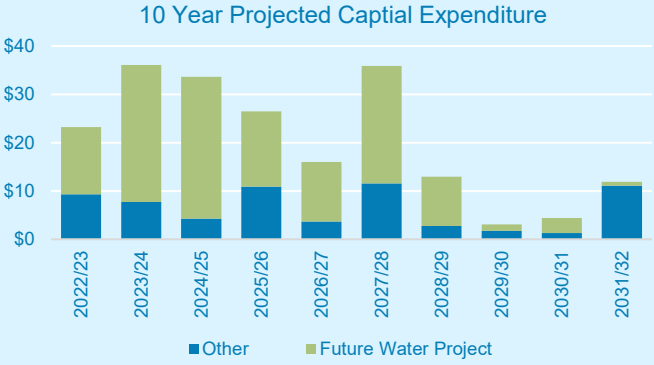
We are committed to continual improvement of our asset management practices. A detailed improvement program has separately been identified and documented with implementation of improvement actions underway.

Lifecycle Management

- Operations - Our water assets are operated in a manner that ensures our objectives are achieved at least cost with the impact of breakdowns minimised
- Maintenance - is a combination of planned and reactive. Some planned maintenance activities are recorded in our asset information system, with others recorded by a variety of means. There is currently no planned inspection program in place to identify condition. Defects identified are entered into our asset information system,

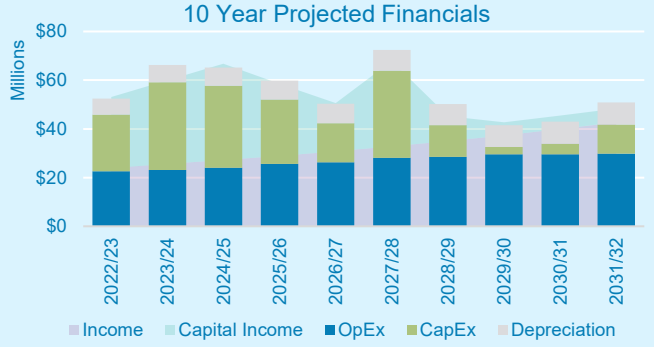


- Capital Works - Asset renewals are undertaken to ensure the continuing reliability of existing infrastructure to deliver its required level of service and to meet increases in demand. There is a significant capital works program over the next ten years with works identified from the Future Water Project 2060.



Finance

We undertake long term financial modelling for our water services on an annual basis to ensure we meet funding requirements of the capital works program and other lifecycle costs associated with operating and maintaining our assets. Our bulk and retail water funds are in a healthy position. Loans will be required to fund the significant capital works required to deliver the Future Water Project over the next ten years. There will also be an increase in operational expenditure to deliver and operate these additional water sources and related assets. Our bulk and retail fund reserves will fall below target balances over the next ten years before beginning to rise again.



2. Introduction

2.1. Scope

2.1.1. Purpose of plan

The ISO55000 standard defines asset management as the coordinated activity of an organisation to realise value from assets. The realisation of value involves the balancing of cost, risks and performance while achieving the organisation's business objectives over the entire lifecycle of assets and should have a service delivery focus.

This asset management plan details the actions required to manage our water supply assets to ensure they deliver the required level of service in the most cost-effective manner. The plan documents our current practices regarding the operation, maintenance and identification of capital requirements for the renewal and upgrade of our assets. This plan will identify and provide a summary of:

Required services	Water supply assets
Demand drivers	Asset related risks
Capital works requirements	Operations plan
Maintenance plan	Funds required
Improvement actions	Performance indicators

This asset management plan should be read in conjunction with our:

Documents	Relationship
Business Activity Strategic Plan	Outlines organisational strategic objectives. Links to section 1
Asset Management Policy	Outlines principles, requirements and responsibility for asset management. Links to section 1
Asset Management Strategy	Outlines objectives, practices and improvement actions for asset management. Links to section 1 and 9
Long Term Financial Plan	Links to financial summary and projections in Sections 6 and 8
Capital Works Plan	Links to planned asset renewals, new assets and upgrades in section 6
Service Level Agreements	Links to levels of service in section 3
Delivery Program / Operational Plan	Links to lifecycle management and planned capital works in section 6

2.1.2. Description of assets covered by plan

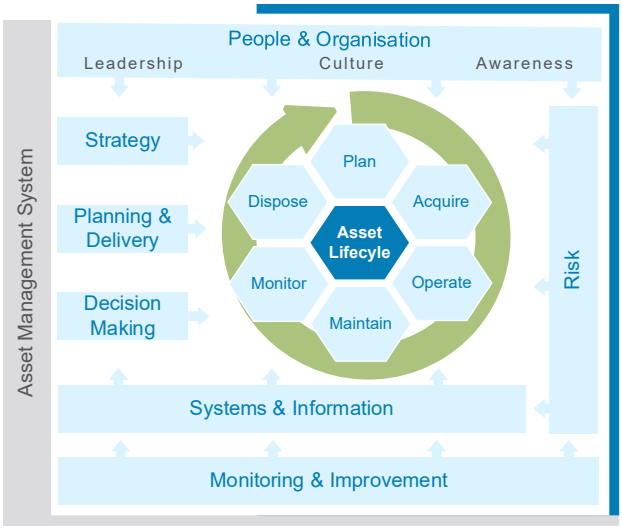
This plan covers our water infrastructure assets that provide bulk and retail water supply and related services. Full details of asset types, values, condition and age can be found in section 5 of this plan.

Bulk Water Supply	Catchment	Rocky Creek Dam	Emigrant Creek Dam	Wilsons River Source	
	Source	Rocky Creek Dam	Emigrant Creek Dam	Wilsons River Source	Bores Telemetry
	Treatment	Emigrant Creek WTP	Nightcap WTP	Fluoride	Re-chlorination
	Distribution	Trunk Mains	Reservoirs	Telemetry	Pump Stations
Retail Water Supply	Distribution	Reticulation Mains	Fill Stations	Meters	

Assets not covered:	Flood Mitigation	Commercial	Land & Building	Parks & Recreation	Plant & Fleet

2.1.3. Duration of plan

This plan covers a planning horizon of ten years with a major review and update every four years.



2.2. Asset Management Practices

2.2.1. Asset management system

Our asset management system includes the policies, strategies, plans, documented processes, and activities related to the planning, management, operation and maintenance of our infrastructure assets as well as the people and systems involved.

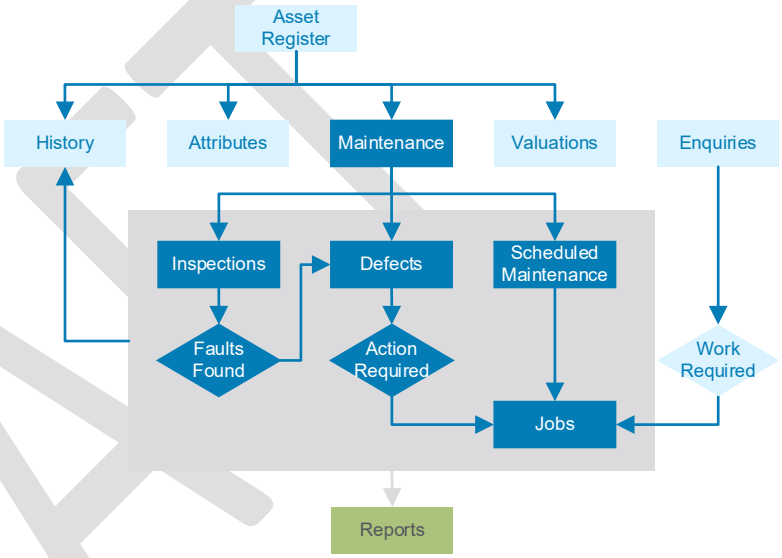
Asset information system

Asset information systems are a software solution to store, maintain and manage the information related to an organisation's assets. The system needs to provide sufficient information to support asset management decision making. These systems can be simple or complex depending on the needs of the organisation.

Having an effective asset information system is a key component of asset management as it ensures the right information is available to the right users at the right time, allowing them to make decisions to achieve asset management objectives.

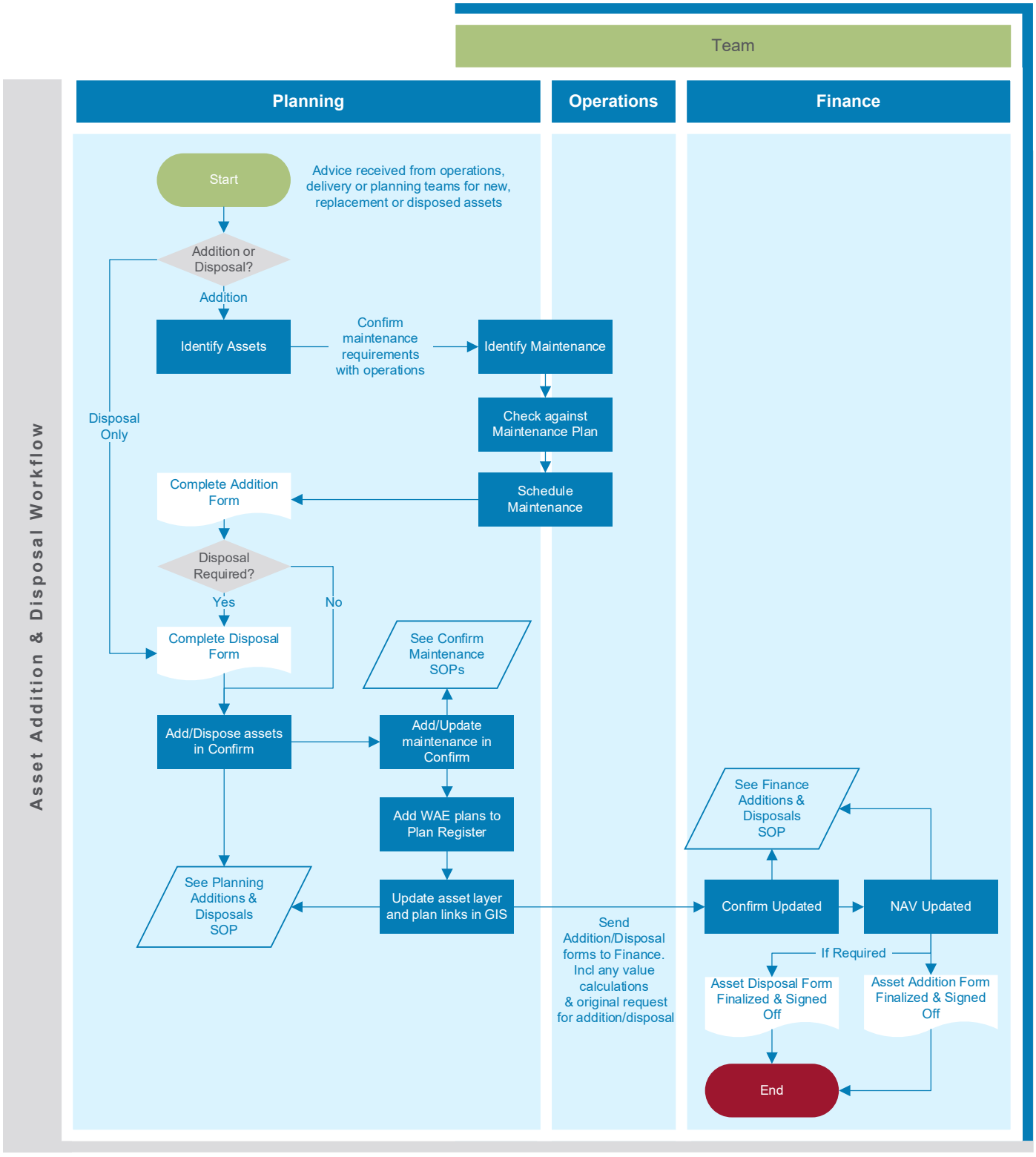
Our corporate asset information system is Confirm, with the Confirm Connect app used within the field. Staff can access and view asset and maintenance data within Confirm, with the Asset Planning team responsible for managing the system. A Confirm Development Plan is in place to guide improvements to the system.

Confirm is utilised for the following functions:



Function	Description
Asset register	Identifies all discrete fixed infrastructure assets. Includes all attributes necessary to describe and identify assets and their location. E.g. material, age, dimensions. Generally, assets with different useful lives, maintenance regimes or attributes information are separated into discrete assets, e.g. buildings are componentised into roof, sub structure, fixtures & fittings etc. Valuations, maintenance programs and their history are linked to the asset.
Asset valuation	Stores the replacement cost, current fair value, accumulated depreciation of assets, along with history of changes to those values over the lifetime of the asset and annual indexation. Valuation data is exported from Confirm & reconciled against our general ledger within our finance and purchasing system annually.
Inspection programs	Scheduled risk inspections identify defects and are completed in the Connect app on mobile devices in the field. Inspections use defined observation checklists and are scheduled to reoccur at set intervals. Ad hoc inspections may also be undertaken as required. A limited risk inspection program is in place for some water asset types to identify defects. No scheduled condition inspections are undertaken on water supply assets. . Some inspections are also completed and recorded outside of Confirm.
Planned maintenance programs	Maintenance activities that are planned and scheduled with a reoccurring frequency against specific assets. A job is raised with set tasks to be completed and assigned to an action officer when planned maintenance is due. These are completed either in Confirm or the Connect app. A planned maintenance program is in place for some water asset types, largely for our electrical and mechanical fitter staff. Some planned maintenance activities are also recorded outside Confirm.
Reactive maintenance	Maintenance tasks not part of planned reoccurring maintenance. E.g. repairing water main breaks or other defects. Defects for water assets can be raised from inspections or ad hoc in either Confirm or the Connect app, with a job raised for any requiring action. Defects are reviewed by Operations Engineering Manager or Dams & Treatment Engineering Manager. Major defects considered under capital works planning.
Customer service requests	Enquiries or service requests from internal or external sources related to assets. Action officer required to complete task or inspect assets to determine if further action required. E.g. leaking water meter etc. Can be completed in either the Connect app or Confirm.

Addition and disposal of assets from the asset register is carried out following our Asset Addition & Disposal procedure. An overview of the workflow for this process is shown below:



Geographical information systems (GIS) are a software solution for capturing, storing, analysing, querying, displaying and managing spatial data. GIS integrates many types of data, arranged by spatial location and visualised as maps. Understanding the spatial relationships between data provides deeper insight allowing users to analyse and visualise data to communicate, share and access information to make decisions. Our corporate GIS is MapInfo. The spatial location of our assets is managed within MapInfo and linked to the assets within Confirm via a unique asset identifier. Staff have access to view, query and print asset mapping, with the Asset Planning team responsible for managing asset spatial data. A GIS Development Plan is in place to guide improvements to the system.

Finance system

Our accounting and financial management system is Navision, which has a suite of accounting/financial modules to meet our day to day operational and reporting requirements. All capital and operational costs are recorded in this system.

		Description
Capital Expenditure (CAPEX)	New Upgrade Renewal	Relatively large (material) expenditure, which has benefits (service potential), expected to last for more than 12 months. In addition to new assets capital expenditure includes renewal/replacement and expansion/upgrade of existing assets
Operational Expenditure (OPEX)	Operating	Recurrent expenditure such as power, fuel, telephone, employee costs, materials, cleaning, minor equipment, overheads, and depreciation. These costs are the day-to-day expenses associated with providing the service during a year of operations.
	Maintenance & Repair	Maintenance costs for retaining assets in a serviceable condition. Includes planned and reactive maintenance activities and inspections. Excludes rehabilitation or renewal actions which increase the service potential or extend the useful life of the asset.

The Group Manager Corporate and Commercial is delegated with the statutory responsibility as our 'Responsible Accounting Officer'. The Responsible Accounting Officer is responsible for ensuring we have adequate control systems, processes and procedures in place and that these are applied to meet all financial operating and reporting requirements.

The Local Government Act, 1993 sets out the requirements for management reporting, accounting, auditing and financial reporting requirements for Council. The NSW Office of Local Government also issues the 'Local Government Code of Accounting Practice and Financial Reporting', which assists in the interpretation and application of the Act, and the application of Australian Accounting Standards to the audit and financial reporting functions. The Government Code of Accounting Practice and Financial Reporting also provide a mechanism which ensures appropriate accounting policies and practices are undertaken. For infrastructure, significant accounting policies are detailed in the annual financial reports. These include policies on the acquisition of assets, initial asset recognition, subsequent costs, indexation adjustments, asset revaluations, capitalisation thresholds, depreciation and disposal and de-recognition.

The following standards and guidelines have been used in the development of this AMP:

AAS27, 'Financial Reporting by Local Governments', Australian Accounting Standards, June 1996	'International Infrastructure Management Manual', Institute of Public Works Engineering Australia, Sydney, 2015
Asset Management Guidelines for Water Supply and Sewerage Schemes, Public Works, 1992	'Condition Assessment & Asset Performance Guidelines', Institute Public Works Engineering Australia, 2016

Accounting standards (particularly AASB 116 – Property, Plant and Equipment) require a distinction to be made between expenditure that is consumed immediately in operations and expenditure on physical assets that will provide service over more than one financial year (capitalised assets). Our capitalisation policy sets appropriate thresholds for the capitalisation (recognition) of assets.

2.2.2. Asset management objectives

Our asset management objectives are outlined below. These objectives come from our Asset Management Policy and Asset Management Strategy and are aligned with our organisational objectives. These objectives guide our asset management activities across Council.

Mission

Our asset management mission is to…

- ✓ deliver affordable, quality services while safeguarding assets for the future,
- ✓ grow internal awareness and capability, and
- ✓ have transparent and accountable processes aligned with industry best practice

We will do this by delivering…

- – a reliable, quality service to meet demand now and in the future
- – notification and responsive action to minimise interruption of services
- – sustainable whole of life value through proactive, prioritised actions
- – the resources to meet strategic long-term outcomes from our assets
- – evidence of outcomes and the condition of our assets

Objectives

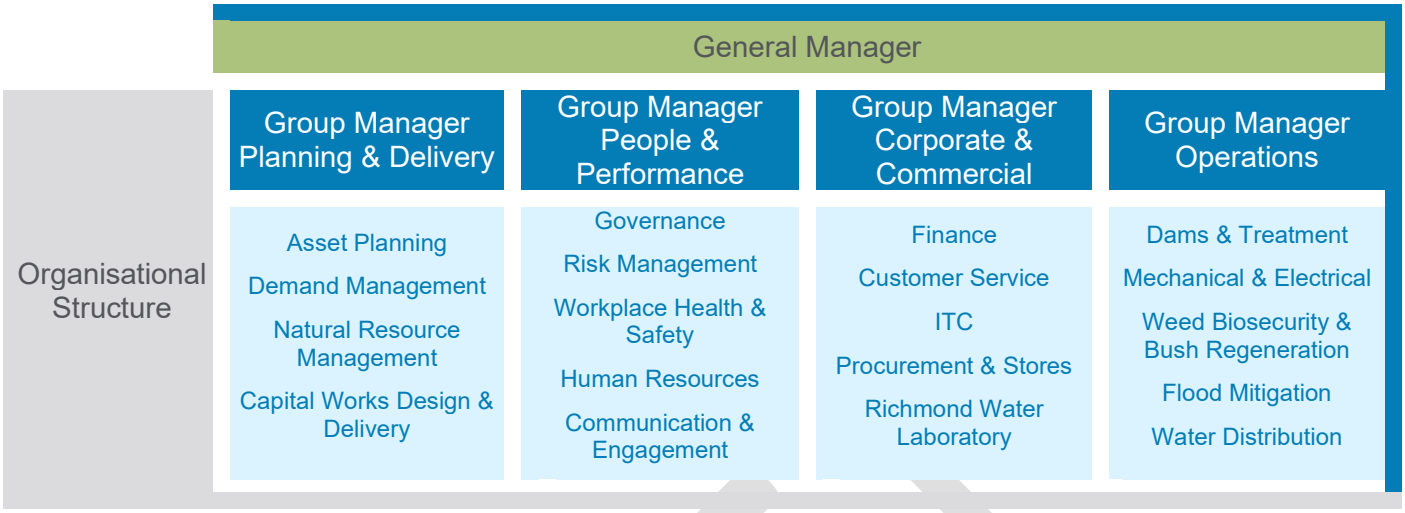
Sustainable Delivery	Convert strategies and plans into actions to deliver agreed service outcomes that balance cost, risk, and performance of assets
	Embrace a strategic whole of life approach to the long-term management of assets to realise value and delivery of required services now and into the future
	Commit to consistent, evidence based decision-making processes that utilise the knowledge and expertise of our people and the information embedded in our systems
	Assets maintained to a suitable level to meet performance and service requirements
	Responsive action to maximise the time that assets are available within appropriate levels service, and that service requests are attended to in a timely manner
External Relationships	Engage with stakeholders to understand sustainable service expectations and gain trust as a valued service provider for the region
Our People	Develop capable and motivated people with the skills to deliver asset management objectives who take ownership of assets and service outcomes
Leadership & Innovation	Foster an asset management culture that is accountable, transparent and aligns across the organisation to achieve our business objectives
	Implement a robust asset management system with a focus on continual improvement

This asset management plan will help to achieve these objectives by…

Documenting services to be provided, expected service levels and cost of providing services	Document our core bulk and retail water responsibilities and service levels required to meet these responsibilities in consultation with constituent councils. Document the cost to deliver and maintain these service levels.
Communicating consequences for service levels where desired funding is unavailable and financial sustainability of services	Assessment of our assets will provide data required to identify funding requirements and identify any consequences or risks where funding is not available to improve or maintain condition of assets over the long term.
Developing a plan to address key infrastructure requirements	Review asset data to identify asset renewals required to maintain services, and new or upgraded assets required to meet future demand.

2.2.3. Key stakeholders

Asset management activities are carried out by staff across Council. A summary of our current organisational structure is shown in the diagram below. Responsibility for our asset management strategy and asset management plans resides with our Planning & Delivery group.



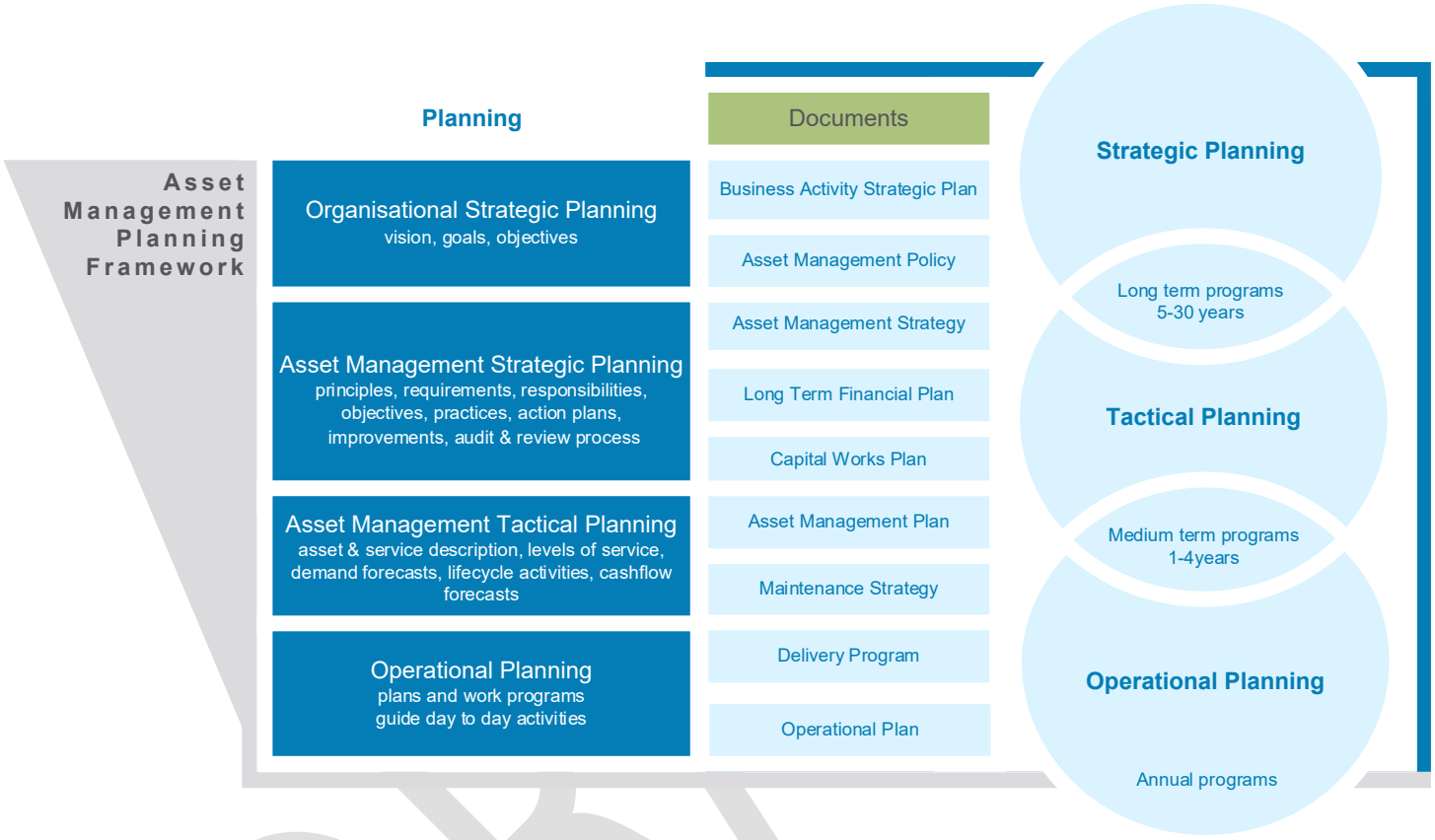
Our water operations team consists of eight staff overseen by the Operations Engineering Manager. The Dams & Treatment Engineering Manager oversees a team of four electrical/mechanical trades staff and a dams and treatment team consisting of eight staff. Strategic planning support and delivery of capital projects is provided by the Planning & Delivery group. Administration support such as Human resources, and finance, are provided by the People & Performance Group and Corporate & Commercial group.

The table below provides an overview of key stakeholders and their role within asset management and development of this plan.

	Stakeholders	Role
Internal	Councillors	Adopt asset management plan. Allocate resources through annual budget approval to meet organisational objectives. Ensuring organisation financial sustainability.
	Leadership Team	Determine organisational objectives. Endorse service levels. Oversee allocation of resources. Provide direction and commitment to asset management.
	Planning & Delivery Team	Undertakes planning activities for capital works. Manage the delivery of capital works projects. Manage asset information system (AIS) and data. Assists in the development of maintenance programs and input into AIS. Management of asset management documentation. Determine service levels.
	Finance Team	Manage valuations and financial reporting on assets. Budget allocations.
	Operations Teams	Responsible for the ongoing operation and maintenance of assets, including condition assessment, defect identification and maintenance planning. Deliver minor capital works within areas of speciality. Determine service levels.
	Other Staff	Compliance with asset management practices.
External	Constituent Councils	Input into required service levels and customer value. Provide funding.
	Community	Input into required services and cost prepared to pay for services.
	Regulatory Bodies	Monitoring and compliance. Legislation and regulations guiding asset management and service levels.

2.2.4. Planning framework

This asset management plan is part of a suite of documents that form our asset management system. It has been prepared after a review and update of our previous asset management plan and in accordance with ISO55000 Asset Management Standards and the International Infrastructure Management Manual. It is informed by our Asset Management Strategy which defines our asset management objectives, provides an overview of our asset management system and contains a detailed plan for improvement to our systems, processes and outcomes for asset management as we strive for continual improvement and move towards more advanced asset management practices.



The NSW Government's Integrated Planning & Reporting Framework (IP&R) requires Council to develop a Business Activity Strategy which:

- Outlines our main business activity priorities
- Sets our strategic objectives
- Determines where Council would like to be in 10 years and how we intend to get there

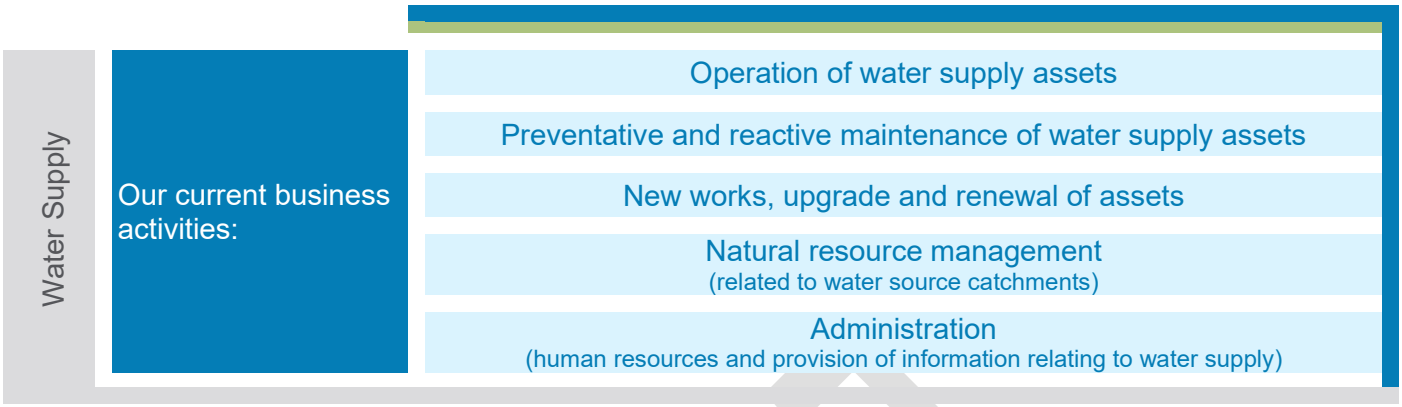
Council is required to develop the suite of documents outlined in the diagram to the right to meet IP&R requirements. We have developed these documents in consultation with our constituent councils. This asset management plan forms part of the IP&R Resourcing Strategy.

Integrated Planning & Reporting Framework

2.3. Rous County Council Services

We are responsible for a wide range of physical assets including bulk water supply, retail water supply and flood mitigation infrastructure to deliver our core services. This asset management plan covers assets associated with the delivery of our bulk and retail water services.

2.3.1. Water supply



Bulk water supply

We are the regional water supply authority providing bulk potable water to the constituent council areas of Lismore (excluding Nimbin), Ballina (excluding Wardell), Byron (excluding Mullumbimby) and Richmond Valley (excluding land to the west of Coraki). We supply bulk water to our constituent councils, who are then responsible for the reticulation of this water to consumers within their urban centres. The regional water supply network includes around 43,000 connections within the reticulation areas of these constituent councils, servicing a population of around 100,000.

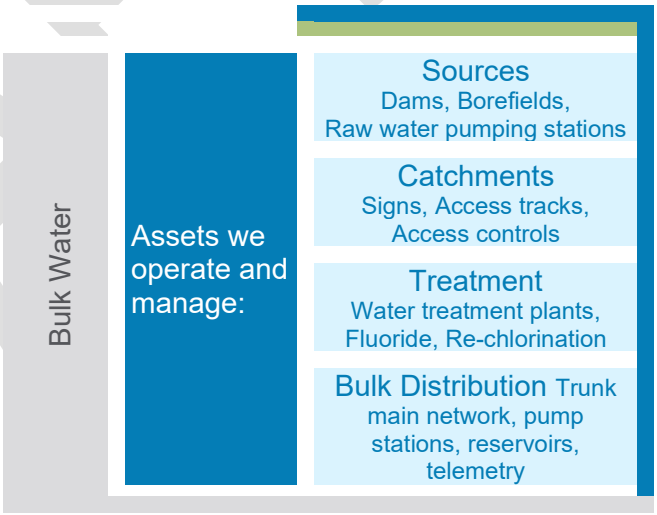
Our principal water source which supplies the network is Rocky Creek Dam, situated 25 km north of Lismore. Our other sources are Emigrant Creek Dam, the Wilsons River Source, Convery's Lane and Lumley Park bores in the Alstonville area.

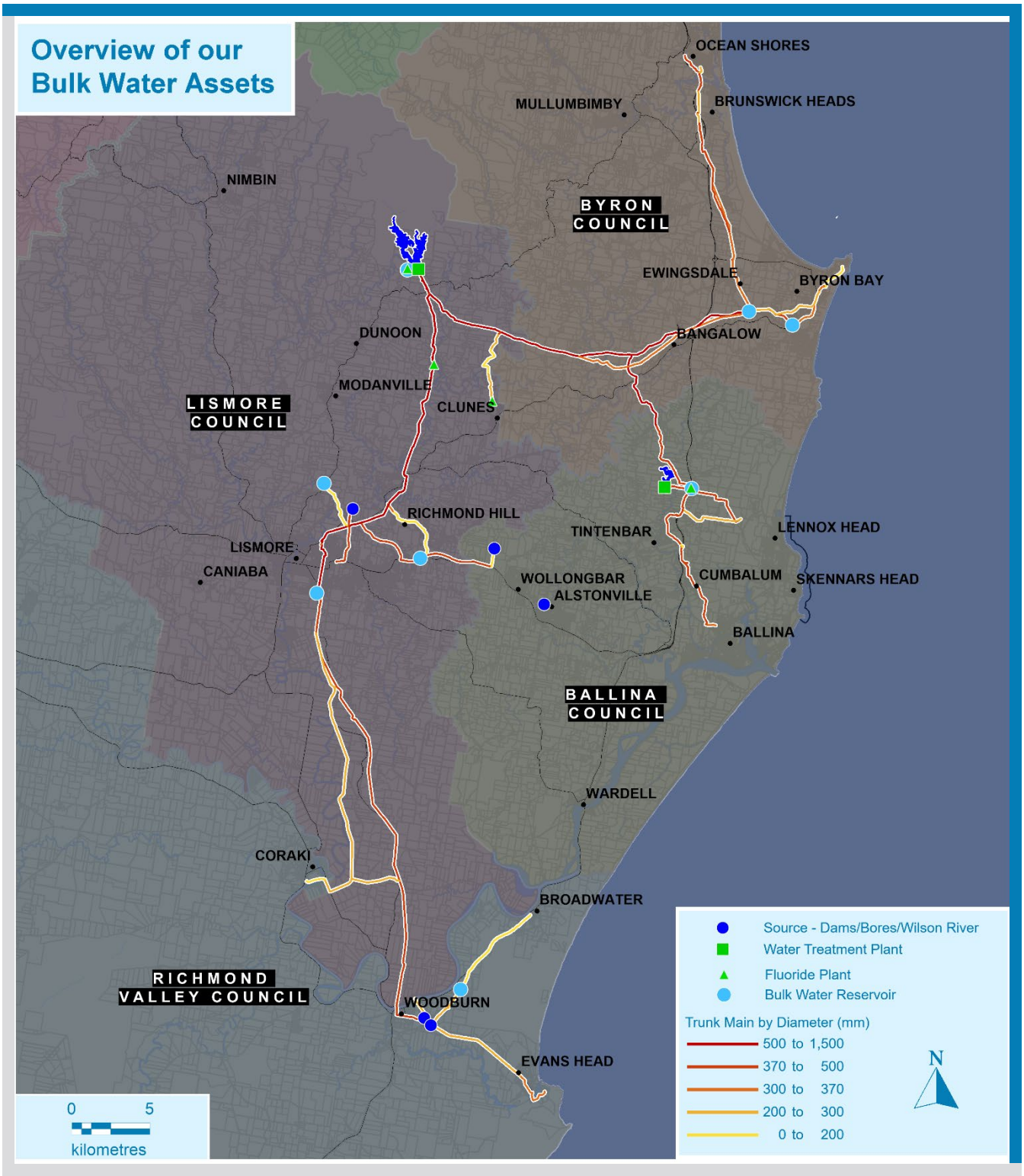
Retail water supply

We provide water supply services to just over 2,000 rural and urban connections (retail customers) direct from the bulk supply trunk main system. We also supply water to 11 bulk water fill stations throughout the region available to water carters and two public access water fill stations.

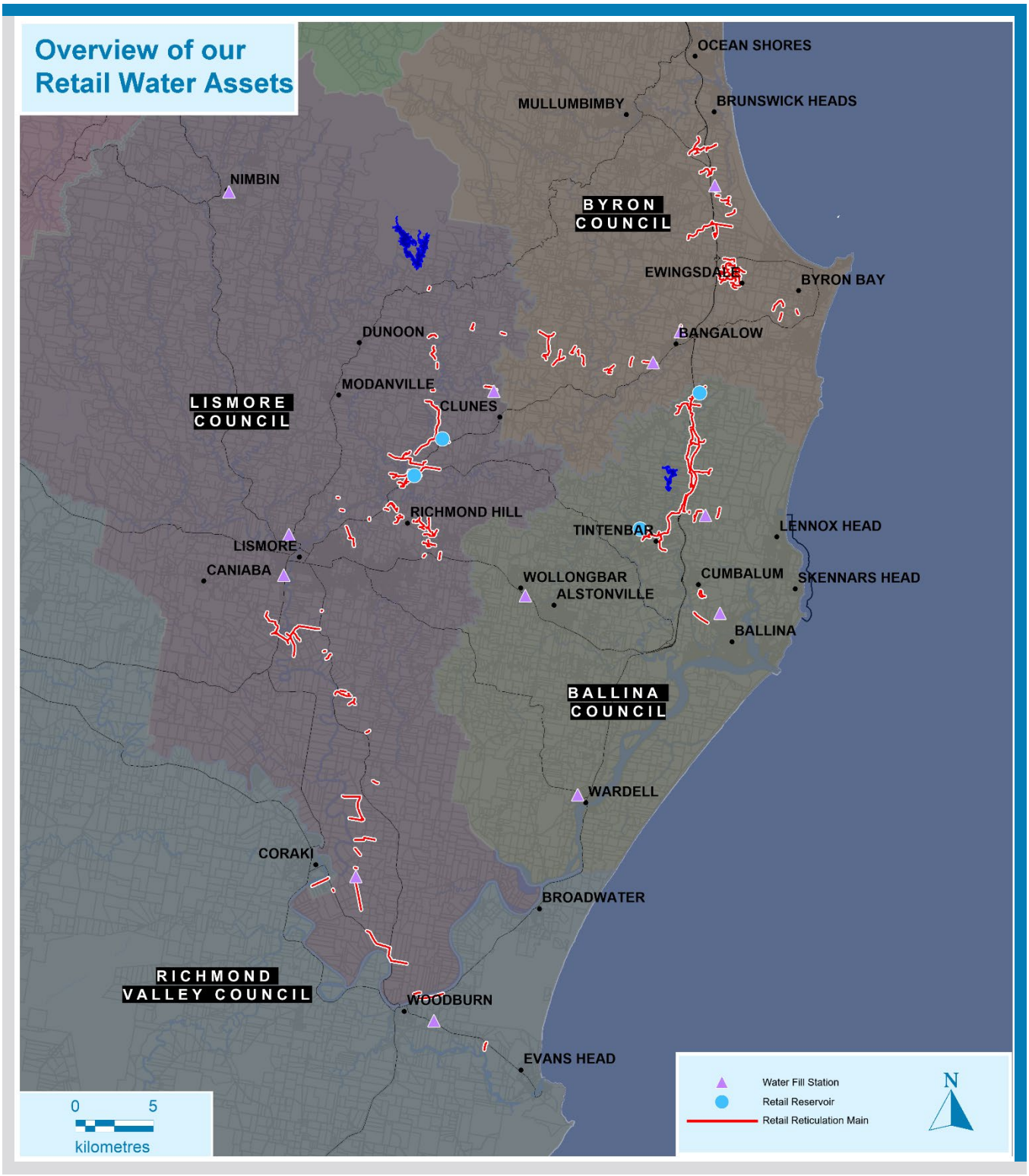
All assets associated with the provision of retail water supply services are covered by this asset management plan.

All assets associated with the provision of bulk water supply services are covered by this asset management plan.





The map above provides an overview of our Bulk Water Supply Assets.



The map above provides an overview of our Retail Water Supply Assets.

2.3.2. Services not covered by this Plan

Flood mitigation

We are responsible for flood mitigation and related natural resource management within the constituent council areas (excluding Byron). In 1959 we were constituted to exercise the powers and duties for "the prevention or mitigation of menace to safety of life or property from flood". The powers and duties were amended in 2008 to include natural resource management (NRM) issues arising from flood mitigation activities.

Flood mitigation assets are not included in this asset management plan. They are covered in a separate document: *Asset Management Plan – Flood*.

Weed Biosecurity

We undertake weed management services across the four constituent council areas and are responsible for administering the Noxious Weeds Act 1993 in the region. Weed biosecurity services are also provided to Kyogle Council and Tweed Shire Council under a fee for service arrangement.

Assets associated with our weed biosecurity operations are not included in this asset management plan.

Other

We have a number of commercial activities and investment properties such as the Perradenya Estate, Richmond Water laboratory and other commercial premises (non-core business activities).

Assets associated with our commercial activities are not included in this asset management plan.

3. Levels of Service

3.1. Organisational strategic objectives

As an organisation we have developed and adopted a set of values that we collectively believe in. Our organisation and our people will conduct our day-to-day business in alignment with these values.

Mission, Vision, Values

Our mission	Partner with our constituent councils to provide quality services that support a sustainable and productive region.
Our vision	Thrive and evolve as a valued regional service provider.
Our values	**Safety:** safety first 24/7 **Teamwork:** one team, one purpose **Accountability:** own it, solve it, achieve it **Respect:** be honest, be fair

Activities we undertake, including asset management, are aligned to the priorities outlined in our Integrated Planning & Reporting Framework as outline below:

Integrated Planning & Reporting Priorities

Sustainable Delivery	• Sustainable service provision in relation to water supply, flood mitigation and weeds management. • Financial sustainability of the organisation (including in relation to its workforce and asset management responsibilities) • Environmental sustainability in relation to Council's operations • Planning for and responding to climate change impacts in the environment.
External Relationships	• Relationships Rous has with constituent councils, customers and the broader Northern Rivers community, State and Commonwealth Government. • Opportunities for partnerships and collaboration to achieve desired outcomes for our customers and community more effectively and efficiently.
Our People	• Our workforce – ensuring we have the right people with the right skills in the right place to achieve our objectives within a Values based culture. • Creating a working environment and a workplace culture where our people value their work and feel valued by the organisation and its customers.
Leadership & Innovation	• Our role as a regional leader. • How we conduct ourselves as an organisation. • How we use technology and apply innovation to be more effective and efficient.

3.2. Legislative requirements

There are several legislative requirements we must meet, including Commonwealth and State legislation and regulations. Relevant legislation is summarised in the table below.

Legislative Requirements	
Local Government Act, 1993 and Local Government (General) Regulation 2005	This Act provides the legal framework for the system of local government in NSW. Under the Local Government Act, 1993, the responsibility for provision of water supply and flood management services in non-metropolitan NSW is delegated to local councils. This responsibility has been delegated to us by Ballina, Byron, Lismore and Richmond Valley Councils under the act. The Minister for Primary Industries has significant powers under the Act for construction and approval of water supply works.
Local Government Amendment (Planning and Reporting) Act 2009	Local Government Amendment (Planning and Reporting) Act 2009 includes the preparation of a long term financial plan supported by AMPs for sustainable service delivery.
Local Government (Water Services) Regulation,1999	The Regulation supplements the provisions of the Local Government Act 1993 relating to the carrying out of water supply, sewerage and stormwater drainage works by councils and regulates the use of such works.
Environmental Planning and Assessment (EP&A) Act, 1979	The Act requires that all proposals, activities and functions which are investigated, designed, planned, constructed and operated should be studied during all stages of their environmental impact on the basis of scale, location and performance. Environmental impact assessments may also be required to satisfy Commonwealth legislation processes. The Act provides the basis for the preparation of environmental planning instruments.
Dams Safety Act, 2015	Dams Safety NSW is the state regulator for dams safety. It is responsible for developing and implementing regulation for effective dam safety management to protect life, property and the environment from dam failures. Under the act we are required to have a Dam Safety Management System based on requirements of AS ISO 55001:2014. Dam owners are required to comply with the Australian National Committee on Large Dams (ANCOLD) Guidelines on the Consequence Categories for Dams (September 2012).
Public Health Act, 2010	This Act requires drinking water suppliers to establish and adhere to a quality assurance program that complies with the Regulation. The Act gives NSW Health powers with respect to the provision of safe drinking water. The Act was amended to mandate compliance with the “health critical” elements of the Australian Drinking Water Guidelines in regional NSW.
Protection of the Environment Operations Act, 1997	We are required to exercise due diligence to avoid environmental impact.
Water Management Act, 2000	This Act provides for the sustainable and integrated management of the water sources of NSW. The Act provides a framework for water sharing plans and environmental flows, sets out bulk water supply regimes, defines local water utility access licences and requires water utilities to levy developer charges.
Fluoridation of Public Works Supplies Act, 1957	This Act, together with the Fluoridation of Public Water Supplies Regulation, 2002 and the Code of Practice for the Fluoridation of Public Water Supplies, 2002, requires NSW Health approval to add fluoride to a public water supply by a water supply authority.
Work Health & Safety Act 2011	The Acts places emphasis on risk management and consultation with staff to minimise work related accidents and health impacts. We need to train staff in safety issues and provide a safe working environment and supply equipment to ensure safety. We and our staff may be liable for breaches of these requirements.
Fisheries Management Act, 1994	The objects of this Act are to conserve, develop and share the fishery resources of NSW for the benefit of present and future generations. Often works associated with water supply structures including dams, weirs, pipelines and extraction points involve works that trigger certain approval requirements under the Act.
Coastal Management Act, 2016	The new Coastal Management Act communicates the NSW Government's vision for coastal management. The Act reflects the vital natural, social, cultural and economic values of NSW coastal areas and promotes the principles of ecologically sustainable development in managing these values. The legislative and policy framework introduced by the coastal reforms recognises natural coastal processes and the local and regional dynamic character of the coast, and promotes land use planning decisions that accommodate them. The reforms ensure coordinated planning and management of the coast and support public participation in these activities.
The Australian Accounting Standards	The Australian Accounting Standards Board standards require assets to be valued and reported in the annual accounts, including the depreciation value of assets.

3.3. Stakeholder expectations

We consult with our stakeholders in relation to management of our assets and natural resource management extension activities. We have developed Service Level Agreements (SLA) with our constituent councils that set out service expectations, roles and responsibilities in relation to bulk and retail water supply. These Agreements are reviewed periodically to adapt and respond to changing needs.

3.4. Customer & technical service levels

Our service levels for water supply as agreed with our constituent councils are outlined in the following table. Full details can be found in the SLAs with our constituent councils.

		Performance Indicator
Quantity & security	Integrated Water Cycle Management	• Facilitate the delivery of the objectives under the Integrated Water Cycle Management Strategy (2021)

	Quantity	• Bulk supply of treated water to meet demand
		  • Annual demand in accordance with the projections contained in the IWCM.
		  • Peak day demand in accordance with the projections contained in our Long Term Peak Day Demand Forecast 2013 and subsequent revisions.
		  • Peak instantaneous demand for sites where bulk supply is direct into constituent councils reticulated network.

	Reservoir service & notification levels	• Maintain supply to meet agreed daily demand to supply reservoirs • Deviations from agreed levels reported

	Measurement of bulk water supply	• Flow meters are:
		  • operational at all points of supply.
		  • meet or exceed NMI R 49-1 Class 1 accuracy.
		  • renewed as per manufacturer's recommendations.
		  • electronically verified - 3 yearly for self-verifying, annually for not self-verifying

	Demand management	• Regional demand management plan in place
		  • Jointly developed and compliant with NSW Best-Practice Management of Water Supply and Sewerage Framework
		  • Sets out roles and responsibilities of all parties.
		  • Provide resources & services for the preparation, management and delivery of the plan, including progress reporting.
		  • Revise Plan every 4 years.

	Restriction of supply	• Regional Drought Management Plan in place.
		  • Jointly developed and compliant with NSW Best-Practice Management of Water Supply and Sewerage.
		  • Operational Readiness Actions are complete and/or current.
		  • Revised every 4 years.

	Continuity of supply	• Emergency management and continuity of supply procedures in place. • Notification of interruption to continuity of supply – planned 7 days minimum, unplanned maximum 24 hours after incident observed. • Duration of interruption to continuity of supply – planned 12 hours duration, unplanned maximum 24 hours after incident observed
	Infrastructure access	• Safe workplace provided. • Instances of planned activities unable to be carried out due to access restriction reported within 7 days
Quality	Quality	• Supply meets Australian Drinking Water Guidelines • Have an approved Drinking Water Management System
	Reporting	• Notification of departure from agreed water quality targets – E.coli maximum of 2 hours after result received, all other parameters within 24 hours • Summary of exceptions notified in monthly report
Catchment	Catchment management plans	• Develop catchment management plans • Implement catchment management plans • Implement onsite wastewater management guidelines
Monitoring	Reporting	• Monthly reports provided by 10th of following month. • Annual reports provided within one calendar month of end of reporting period. • Incident reports provided at time of incident in accordance with agreed timeframes

4. Demand

4.1. Demand drivers

Several factors have an influence on demand for our water supply. These include:

Population change	Changes in demographics	Climate
Seasonal factors	Consumer preferences and expectations	Economic factors
Industrial and commercial uses	Water loss	Environmental and legislative requirements

4.2. Demand forecast

A long-term water supply demand forecast was developed in 2013. This forecast was updated in 2020 as part of the Future Water Project 2060 to support strategic planning to ensure long-term water supply security for the region. With forecasted population growth, the increase in demand on our drinking water supply is expected to increase by 37% by 2060. Climate forecasts also predict a reduction in available surface water of 22% by 2060. Based on our current growth, our water supply demand will exceed reliable supply by 2024.

	Demand Forecast	Total Connections	Population	Annual Demand (ML)
Demand Forecast				
2000	Two decades ago, our regional water supply served a total of 26,000 properties.	26,000	87,000	12,500
Now	Today our regional bulk supply currently services 41,868 connected residential properties and 5,114 connected non-residential properties	47,000	110,000	11,500
2060	By 2060, our regional bulk supply is predicted to serve 57,561 connected residential properties (based on estimated lot yields) and 9,361 connected non-residential properties	67,000	150,000	16,000

To meet this forecast increase in demand our future focus is on:

Continued water efficiency and conservation measures	Identifying and preparing new sources of groundwater
Further investigating recycled water systems and sources	Further assessment of desalination plant locations

4.3. Demand impact on assets

Strategies to address the increase in demand on our water supply will impact our assets. These impacts will include changes to how our assets are operated, acquiring new assets, upgrades to existing assets and ongoing demand management actions. Strategic actions to meet future demand for our source water supply are addressed in the Future Water Project 2060. Additional strategic reviews are currently underway to assess the impacts of increased demand on water treatment plants and distributions systems.

4.4. Demand management plan

Our Regional Demand Management Plan (2018) provides details on the demand management strategies to be adopted between 2019 and 2022. Since 1995, demand management actions have helped to reduce water consumption per household in our region by 50%. Demand management remains a future focus. The Demand Management Plan is due to be reviewed and updated in 2022.

5. Risk Management

5.1. Critical assets

Currently our critical assets have not been formally identified. We rely on staff understanding of our assets to determine asset criticality when identifying and prioritising maintenance and capital renewal needs. An improvement action has been identified to identify individual highly critical assets, as well as assessing criticality for each asset type.

5.2. Risk summary

The table below provides a summary of our risk management documents and mechanisms. Further details of identified risks can be found within our enterprise and team risk registers.

		Description
Risk documents and mechanisms	Risk Management Policy	Articulates at a high level ways in which we manage risk across our operations and meet requirements under the Risk Management and Internal Audit Framework for local councils in NSW
	Emergency Management Plan	Describes how we will respond to an emergency. It describes a combination of emergency response, business continuity and recovery processes for our critical business and critical support processes.
	Enterprise Risk Register	Our enterprise risk register identifies strategic, enterprise level risks.
	Team Risk Registers	Currently under development, these registers will record operational risks at a group and team level.
	Asset Risk Register	Identifies potential failure modes of assets, the likelihood of a failure occurring, consequence should it occur and mitigation options to address risks. The asset risk register has not been reviewed or updated since 2013. An improvement action has been identified to review and update this register.
	Annual Risk Management Plan	Provides an overview of the work we do each year to embed and sustain a positive risk culture. This is a new document being introduced in 2021 which records the progress of actions and allocates owners to each action.
	Drinking Water Management Risk Assessments	Assessment of risks specific to management of our drinking water
	Dam Safety Risk Assessments	Assessment of risks specific to management of our dams
	Dam Safety Emergency Plans	Provide information necessary for emergency agencies to manage a downstream evacuation in the unlikely event of a potential failure of a dam
	Catchment Risk Management Plans	Assessment of risks specific to management of our drinking water catchments
	Damastra	Application where WHS incidents are recorded and managed.
	ARIC (Audit, Risk & Improvement Committee)	Operates independently of Council management with the aim to proactively facilitate and promote continuous improvement across Council by challenging traditional approaches. Provides advice and recommendations on matters identified under its Charter. Risk management is one of the matters reviewed by the committee.

5.2.1. Management

The following approaches may be undertaken in response to identified risks.

		Description
Risk Response	Accept	Accept, manage and monitor the level of risk, but take no action to reduce the risk.
	Mitigate	Willing to accept some risk by implementing control processes to manage the risk within established tolerances.
	Transfer	Transfer the risk to a third party (e.g. obtain insurance).
	Avoid	The risk is identified as unacceptable, and action is taken to specifically avoid the risk (e.g. remove a service or cancel project).

5.2.2. Identification

Identified risks are assessed against the following general risk matrix. We have adapted this general risk matrix with tailored consequences for specific purposes such as asset renewal planning or water quality risks.

	Consequence				
Financial Financial loss	Operating blowout of 1%. Reduction in operating profit of >1%.	Operating blowout of 1 - 5%. Reduction in operating profit of 1 - 5%.	Operating blowout of 5 - 10%. Reduction in operating profit of 5 - 10%.	- Operating blowout of 20 - 30%. Reduction in operating profit of 20 - 30%.	Operating blowout of >30%. Reduction in operating profit of >30%.
People / Safety Loss of personnel Decrease in productivity Personal Harm	Adverse impacts result in minimal change to work conditions. No injury or harm to persons.	Staff required to work extra hours resulting in short-term increase in stress levels. Potential for minor injury requiring first aid treatment.	Staff required to work long hours for a sustained period affecting wellbeing & causing unsafe work practices. Potential for injury or illness resulting in medical attention & several days off work.	Sustained longer working hours & heavy workloads resulting in sharp increase in sick leave, unsafe work practices & stress related conditions. Potential long term or serious injury.	Extended working hours & workloads for long periods resulting in breaches of OHS regulations, injuries, extended sick leave, resignations. Potential death, permanent disability or ill-health.
Environmental Environmental damage	Minor effects on biological or physical environment.	Moderate, short term effects but not affecting ecosystem functions.	Serious medium term environment effects.	Very serious long-term environmental impairment of ecosystem functions	Most serious irreversible environment impairment of ecosystem functions.
Legal / Compliance Compliance/legal breach	Minor legal issues.	Minor non-compliance with regulation.	Serious breach of regulation with investigation & report to authority &/or moderate fine possible.	Major breach of regulation. Major litigation.	Loss of licence. Significant prosecution & fines. Very serious litigation including class action.
Reputational / Brand Loss of Reputation	Public complaint retained in-house or dealt with via normal procedures.	Minor adverse local public or media attention or complaints.	Attention from media &/or heightened concern by local community.	Significant adverse national media attention.	Serious public or media outcry.
Strategic Costs exceed budget Failure to attract & retain high quality staff	Localised concern No impact on long term viability.	Detrimental to short term profitability or achievement of current year objectives.	Detrimental to mid-term profitability or achievement of next three years' objectives	Significant long-term impacts. Will require change to strategic direction & objectives.	Business units no longer viable.

Likelihood	Negligible	Minor	Moderate	Major	Severe
Almost Certain Expected to occur in most circumstances. >90% chance that the event will occur once in the next 12 months.	Medium	High	High	Extreme	Extreme
Likely Will probably occur in most circumstances. 65% - 90% chance that the event will occur once in the next 12 months.	Medium	Medium	High	High	Extreme
Possible May occur at some point. 35% - 65% change that the event will occur once in the next 12 months.	Low	Medium	High	High	High
Unlikely Could occur at some point. 10% - 35% chance that the event will occur in the next 12 months.	Low	Medium	Medium	Medium	High
Rare May only occur under exceptional circumstances. <10% chance that the event will occur once in the next 12 months.	Low	Low	Low	Medium	Medium

6. Asset Information

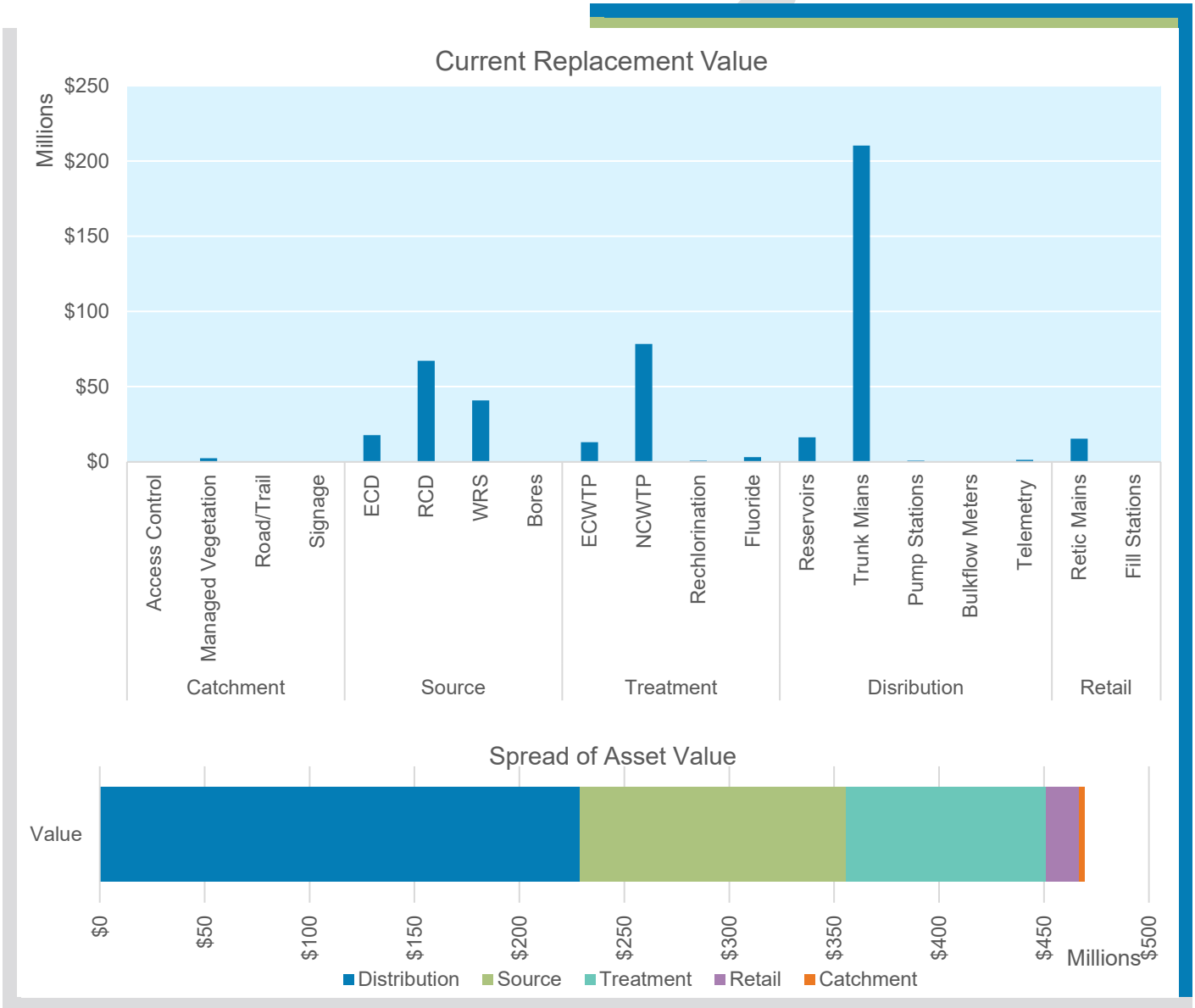
Rocky Creek dam is our primary source of water, and is supplemented by Emigrant Creek dam, the Wilsons River source and groundwater bore sites when required. We manage catchment areas around our water sources to act as a buffer and improve raw water quality. Raw water is treated at Nightcap water treatment plant (at Rocky Creek Dam) and Emigrant water treatment plant. Fluoride and re-chlorination plants also provide treatment across the distribution network. We operate a bulk trunk main and retail reticulation network which supplies water from our treatment plants to the constituent councils and customers across the region.

6.1. Asset value

	Asset Types		Description	Current Replacement Value (2021)
Bulk	Catchment	Access Control	Fencing and gates controlling access to catchment areas	$81,624
		Managed Vegetation	Areas of managed revegetation in catchment areas	$2,374,436
		Road/Trail	27km of unsealed access trails within catchment areas	$114,392
		Signage	Signage throughout catchment areas	$66,267
	Source	ECD	Emigrant Creek Dam	$17,786,522
		RCD	Rocky Creek Dam	$67,77,988
		WRS	Wilsons River Source – including low and high lift pumps, 22km rising main to NCWTP and associated assets	$40,911,871
		Bores	5 groundwater bores	$505,494
	Treatment	ECWTP	Emigrant Creek Water Treatment Plant	$13,137,977
		NCWTP	Nightcap Water Treatment Plant	$78,442,005
		Re-chlorination	4 Re-chlorination dosing plants	$802,463
		Fluoride	4 Fluoride dosing plants	$3,139,757
	Distribution	Reservoirs	11 reservoirs and associated assets such as sensors, valves etc. Includes associated assets on 12 Constituent Council owned reservoirs we supply	$16,333,652
		Trunk Mains	277km trunk main	$210,188,888
		Pump Stations	Lagoon Grass pump station, Newrybar pumps	$734,161
		Bulkflow Meters	44 Bulk flow meters	$515,251
		Telemetry	Telemetry and radio system - 40 sites across the water network	$1,295,272
			Bulk Total Replacement Value	$453,708,022

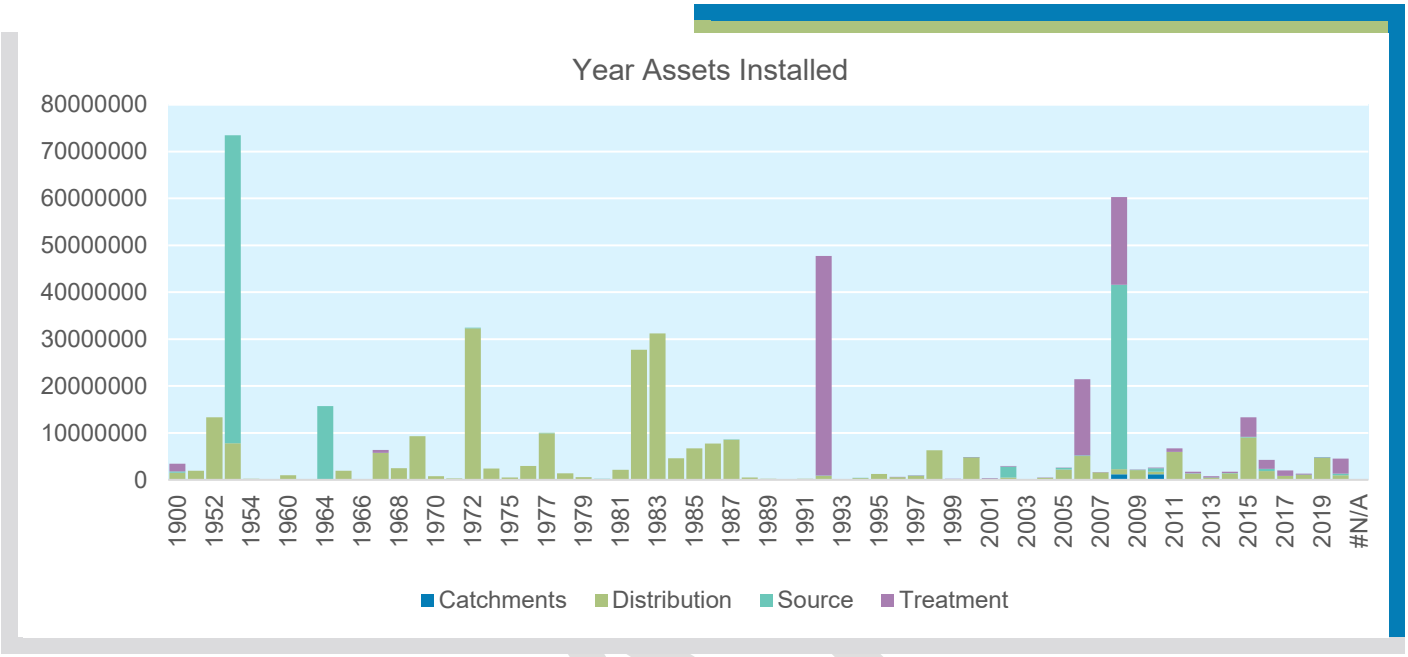
	Asset Types		Description	Current Replacement Value
Retail	Distribution	Retic Mains	139km reticulation mains	$15,400,393
		Fill Stations	11 water filling stations	$312,197
			Retail Total Replacement Value	$15,712,590
			Water Total Replacement Value	**$469,420,611**

The graphs below show the current replacement value for assets spread across water asset types.



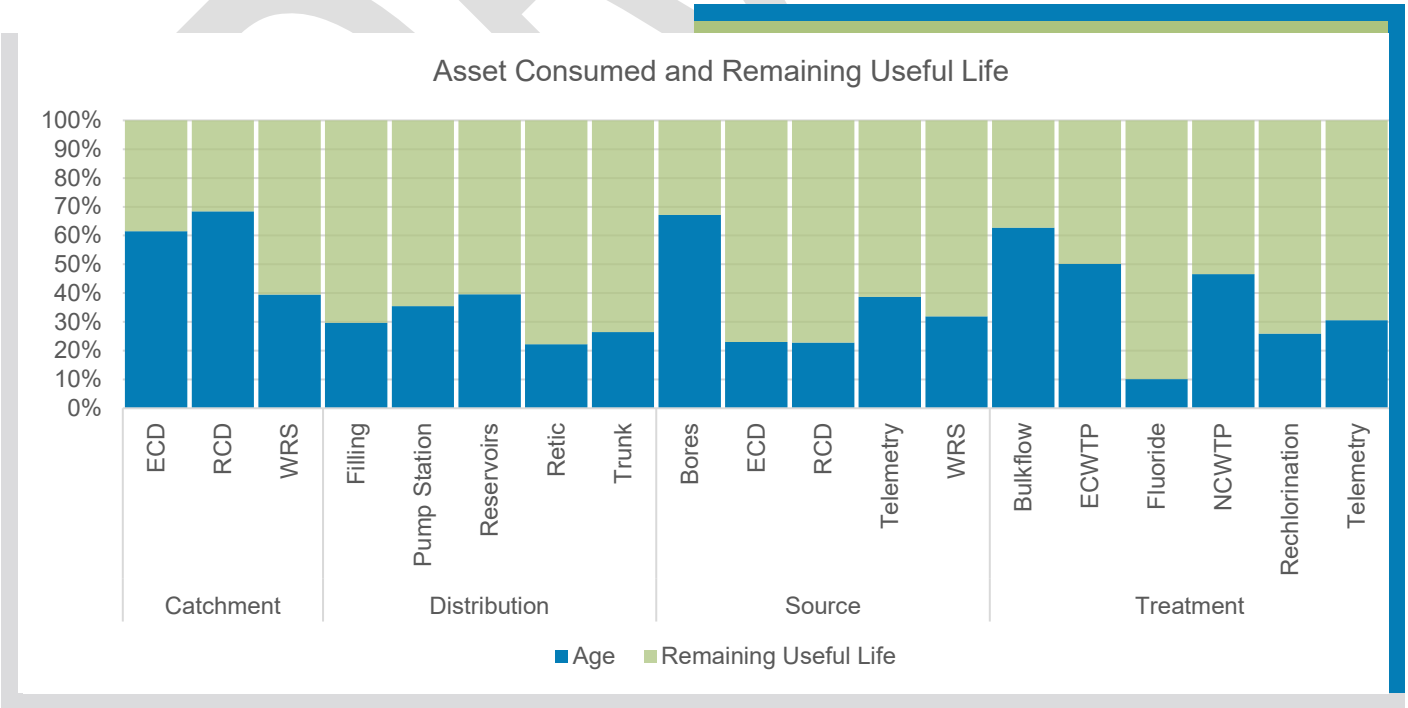
6.2. Asset age

Many water assets have large values and a long useful life. The graph below shows the installation dates for water assets. Major expenditure occurred in 1953 with construction of Rocky Creek Dam, construction of Emigrant Creek Dam in 1964, and Wilsons River Source in 2008. The Nightcap water treatment plant was constructed in 1992 with further augmentation in 2006 and 2008. Much of the distribution main network was constructed though the 1970's and 80's.

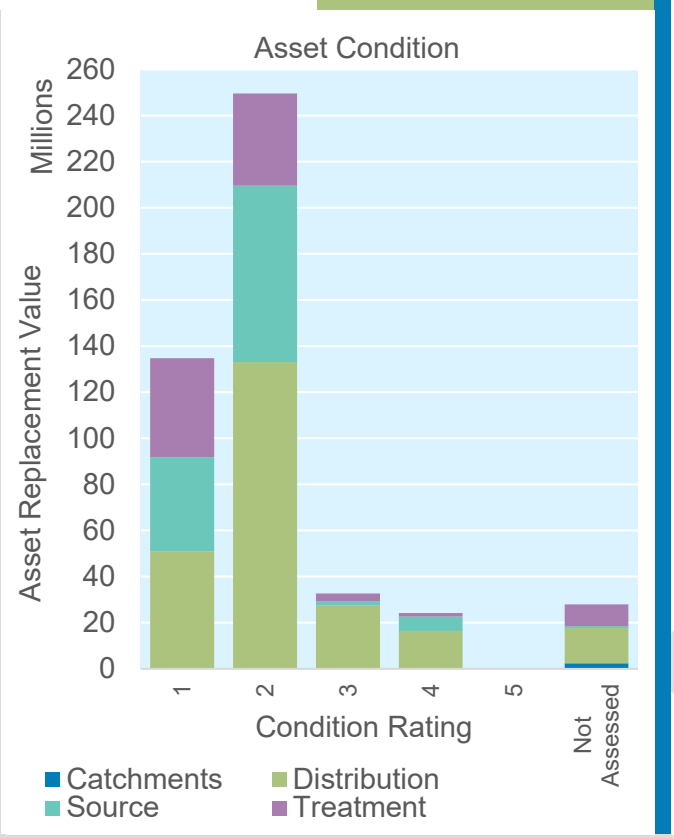


The useful life of an asset provides an indication of the theoretical timeframe before an asset is due to be renewed. Useful life is currently stored within our asset register as the difference between the 'active from' and 'active to' dates. The remaining useful life is the time between the current date and the active to date. There are some discrepancies known with these dates, however it is currently the best data available.

The graph below shows the average current age and remaining useful life for water asset types.



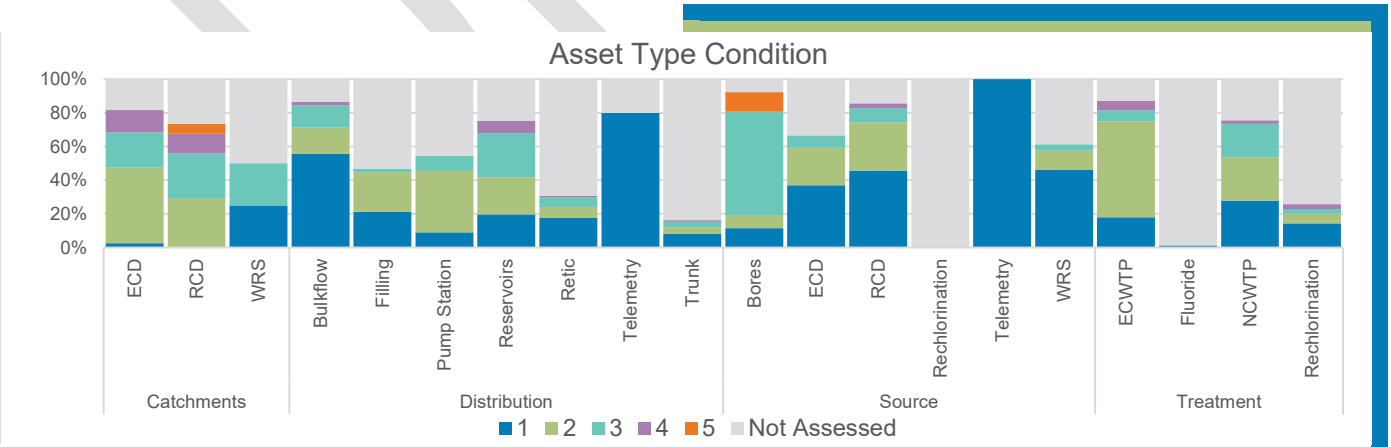
6.3. Asset condition



Condition Rating	Description
1	**Very good condition** Insignificant deterioration. No adverse service reports.
2	**Good condition** Minor defects only, meeting all service requirements
3	**Fair or average condition** Deterioration/defects evident, minor components or sections of asset may need replacement or repair but asset still functions, action required to return to acceptable service level
4	**Poor condition** Serious deterioration evident with defects affecting function of asset, high level of maintenance required to remain operational, consider renewal
5	**Very poor condition** Major deterioration, approaching unserviceable, failed or failure imminent, immediate need to replace most or all of asset, excessive maintenance costs incurred, health and safety hazard exist, unable to be serviced due to technical obsolescence

There is currently no scheduled condition assessment program in place for water assets. Condition is assessed as part of the four yearly revaluation process conducted by external valuers. A strategic review of Nightcap Water Treatment Plant is currently underway (2022) which will include a condition assessment of all treatment assets at the plant. An improvement action has been identified to develop a condition assessment program for all asset types and to improve consistency and reliability of condition assessments including the development of a condition manual and training with staff.

The graph below provides a summary of condition of water assets by type:



Condition 5 assets		
	RCD 4 signs	A masterplan for the Rocky Creek Dam is planned. Signage will be addressed as part of this process.
	Bores 3 bores at Woodburn	To be addresses under the future water strategy - existing bores may be reinstated or abandoned and replaced following outcome of more detailed investigations into the site.

6.5. Asset capacity and performance

Currently there are several capital upgrades identified to address capacity issues, including the following trunk main upgrades:

St Helena 300	Knockrow 450
Byron Bay 200	Broadwater 150

A review of the capacity assessment of our water network is currently underway (2022). This is necessary to ensure our data remains up to date and provides an accurate picture of our current assets and their capacity considering changes in demand, sources, operating environment and any other relevant factors.

A strategic review of the Nightcap Water Treatment Plant is also scheduled to be completed in 2022. Part of this review will include an assessment of the plant's capacity

Monitoring and identification of issues with asset capacity in the water network is undertaken by utilising the tools below.

Telemetry	Hydraulic modelling
Inspections	Risk register
Historical data	Expert opinion

For example, changes such as addition of new or upgraded assets or addition of meter connections would be checked against hydraulic modelling in InfoWorks WS Pro to determine the impact of proposed changes on capacity and service. The hydraulic model will be reviewed and updated in 2022 in order to determine deficiencies, and better inform long term infrastructure planning decisions.

7. Lifecycle Management

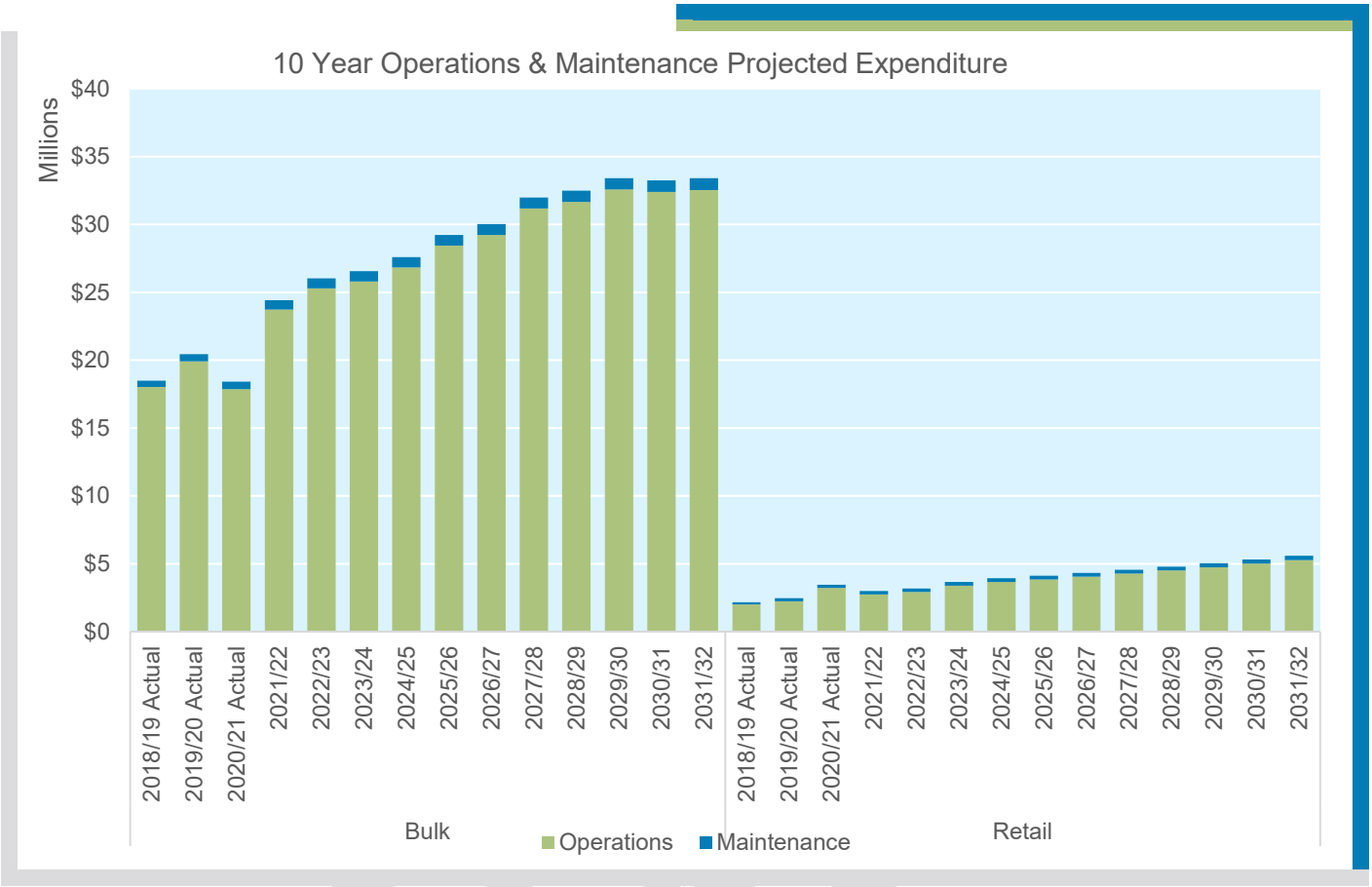
This section outlines the activities undertaken to manage our assets throughout their entire lifecycle. The lifecycle of assets includes:

Definition of lifecycle activities	Description
Operations	Day to day activities required to ensure the required service is provided.
Maintenance (planned maintenance)	Activities to maintain the assets and prevent deterioration. Proactive in nature. Includes inspection of assets. For example, equipment services, reservoir inspections
Repairs (reactive maintenance)	Activities to fix defects, reactionary in nature. For example, repairing a water main break.
Capital Works	Replacement, renewal, upgrade or addition of new assets. For example, replacing a pump, upgrading a water main with a larger diameter pipe, renewing sheeting on a roof.

Costs throughout the entire lifecycle of assets should be taken into consideration as part of decision-making processes. When assessing options for new assets or optimising maintenance programs it may prove more economical in the long run to select an option with a greater upfront cost but lower ongoing operational costs resulting in a lower entire lifecycle cost for example.

7.1. Operations and maintenance plans

The graph below provides an overview of the operations and maintenance expenditure for water supply (as at March 2022).



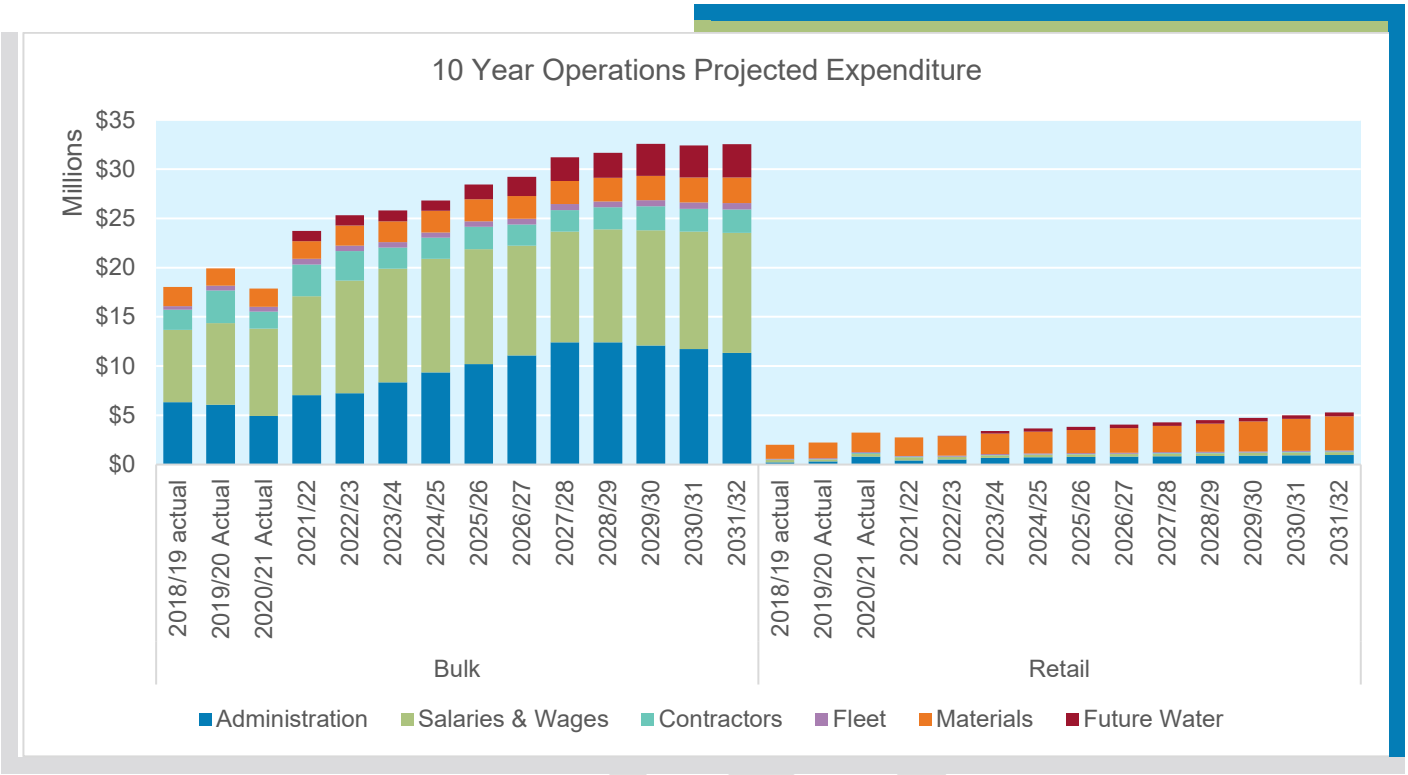
7.1.1. Operations framework

The table below provides some examples of operational activities undertaken on our water assets.

Operational Activities	Description	Examples
Catchment	Catchment areas we manage for our water sources at Rocky Creek Dam, Emigrant Creek Dam and Wilsons River Source. This includes assets such as access tracks, signage etc.	• Harvesting seeds from native species • Bush regeneration works
Source	Our water sources at Rocky Creek Dam, Emigrant Creek Dam, Wilsons River Source and bores. This includes assets such as dams, the raw water pumps at Wilsons River, Howards Grass pump station, the rising trunk main from Howards grass to Nightcap WTP, Woodburn bores	• Water sampling from dam and river • Running pump station at Wilsons River Source • Dam surveillance
Treatment	Our water treatment plants - Nightcap WTP and Emigrant WTP. This includes assets from the raw water pumps, raw water mixing tank, flash-mixer, flocculation, saturation, flotation and filtration, ozone disinfection, pH correction residual disinfection, sludge management and disposal to the clearwater storage reservoir. It also includes re-chlorination and fluoride plants within the distribution network and destratification at the dam sources.	Operation and daily rounds at WTPs and Fluoride plants including: • Sampling • On site laboratory testing • Calibrations • Monitoring chemical levels • Orders and procurement • Scada monitoring
Distribution	Distribution network from our water treatment plants to supply our consumers and Constituent Councils. This includes asset such as trunk mains, reservoirs, valves, reticulation mains, water fill stations etc.	• Scada monitoring • Backflow auditing • Meter reading • Installing new water service connections

7.1.2. Summary of operations expenditure

Below is a summary of actual operational expenditure for water assets from the previous three years and projected expenditure over the next ten years (as at March 2022).



7.1.3. Maintenance framework

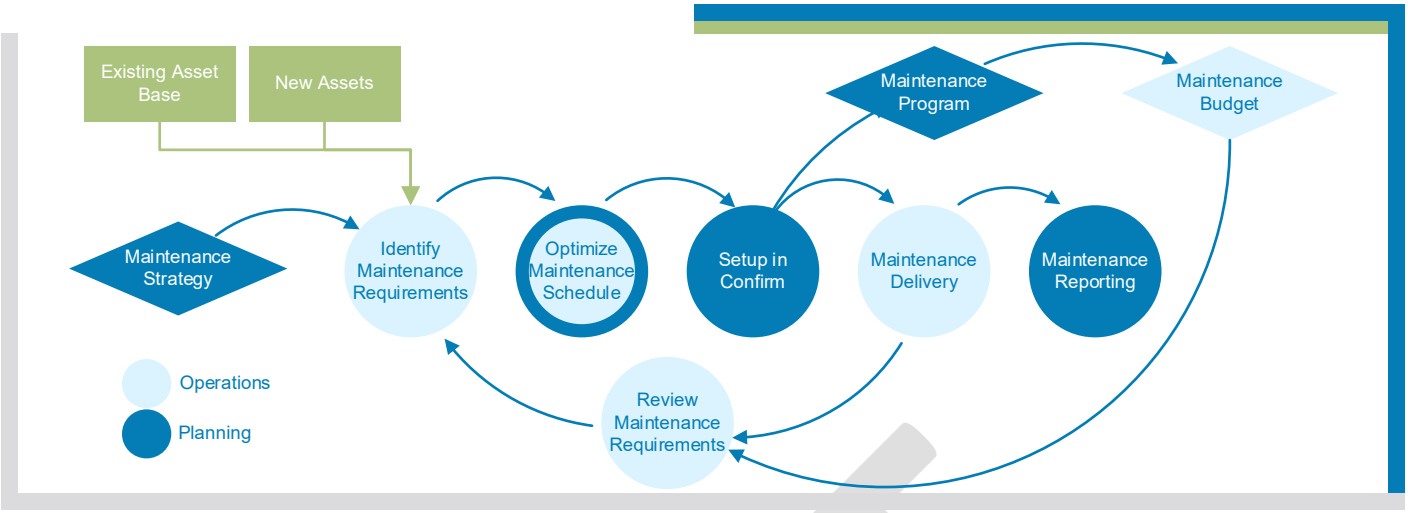
The table below provides examples of maintenance activities undertaken on water supply assets.

Maintenance Activities	Inspections	Maintenance	Repairs
Catchment	Weekly park inspections	Slashing	Fallen trees, rotting boardwalks
Source			
Treatment	Various Electrical/Mechanical Inspections	Equipment services, pump overhauls, calibrations, repainting, cleaning	Leaks, vibration, corrosion, electrical faults
Distribution	Monthly Reservoir Inspections	Repainting, line clearing	Mains breaks

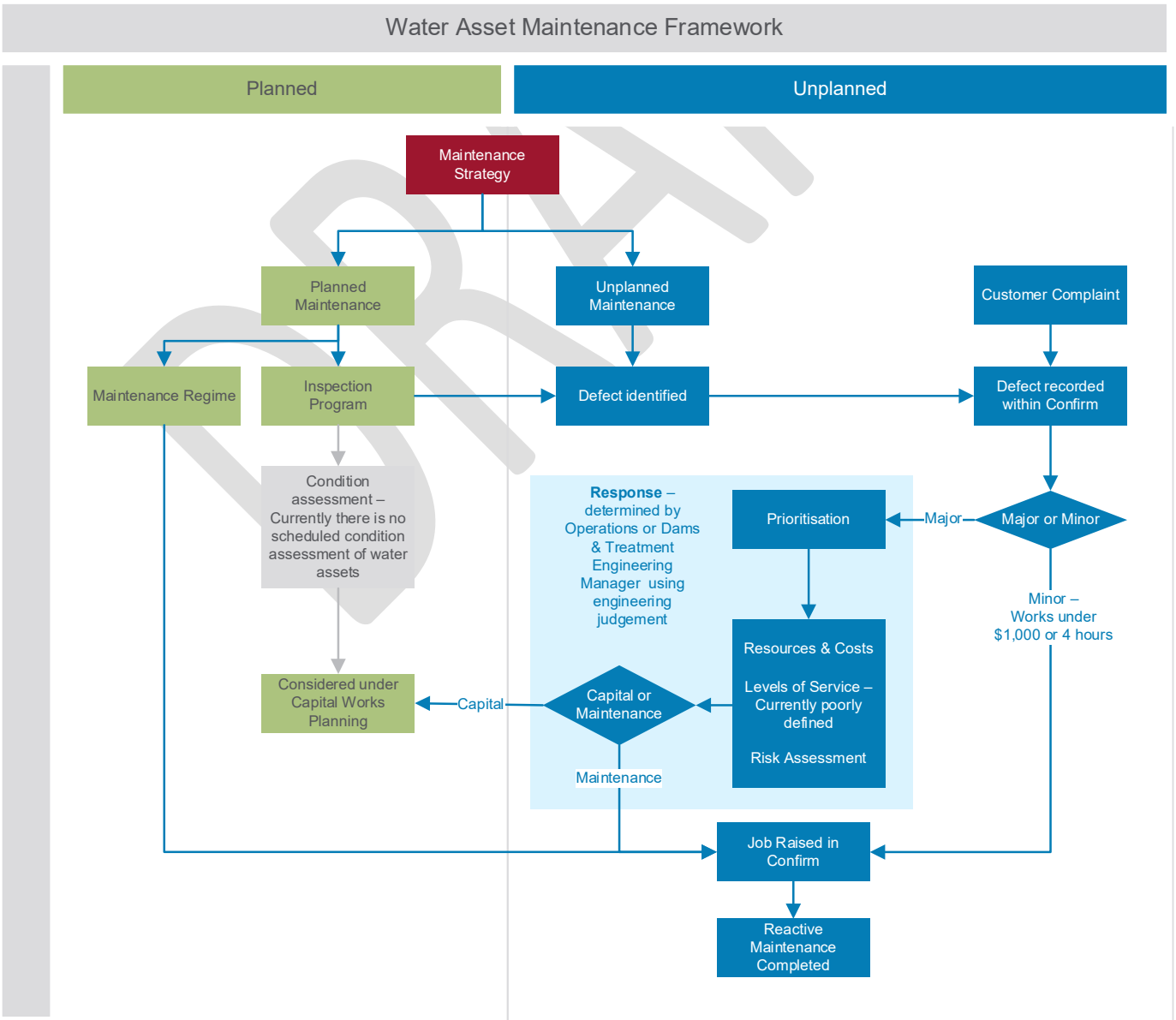
Our Asset Maintenance Strategy discusses our systems and approach to planned and reactive maintenance across the organisation. Our maintenance activities are largely reactive in nature, however, a planned schedule of works undertaken by our mechanical and electrical team and some tasks undertaken by the dams and treatment officers is managed within our Asset Information Management System Confirm. Not all maintenance activities for these teams are managed in Confirm, and maintenance undertaken by our water distribution team is not recorded or scheduled within Confirm.

Planned maintenance programs are currently based on a fixed time cyclic schedule. That is, set tasks are scheduled to reoccur at a set interval, e.g. every 6 months. Condition monitoring and data does not feed into planned maintenance activities. Much of our maintenance is managed reactively, with planned maintenance scheduled for some asset types but not all.

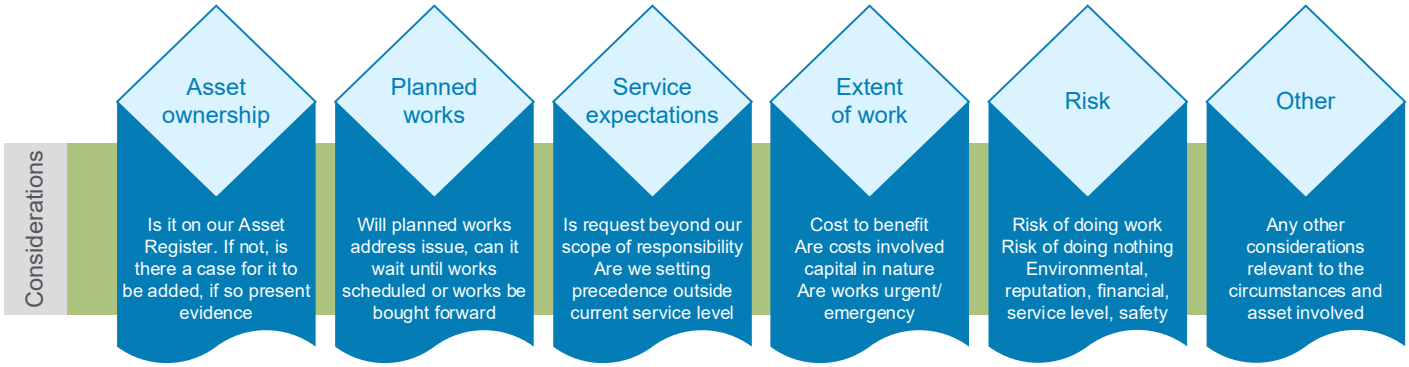
The diagram below provides an overview of how we identify and review planned maintenance requirements.



Defects identified are entered into our asset information system Confirm and referred to the Operations Engineering Manager and Dams & Treatment Engineering Manager to determine suitable response. Only a small number of defects are currently being recorded in Confirm however and improvements in recording of defects is required.

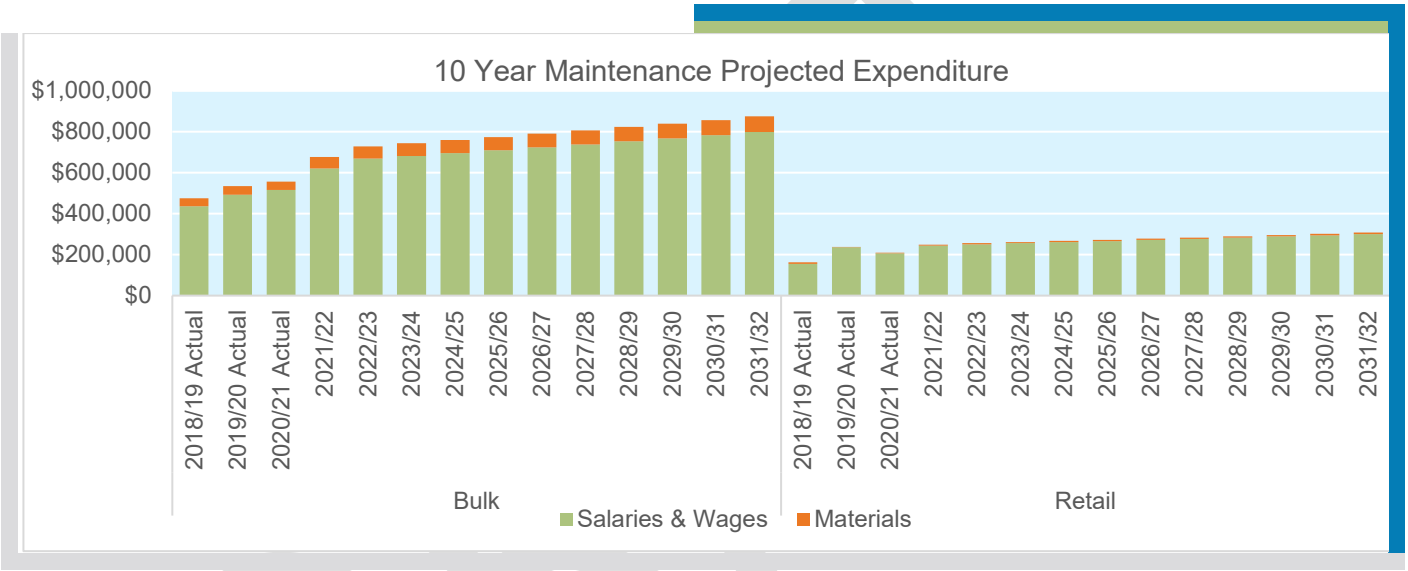


When looking at customer requests and maintenance to rectify defects, the following considerations form part of the decision-making process.



7.1.4. Summary of maintenance expenditure

Below is a summary of actual maintenance expenditure for water assets over the previous three years and projected expenditure over the next ten years (as at March 2022).



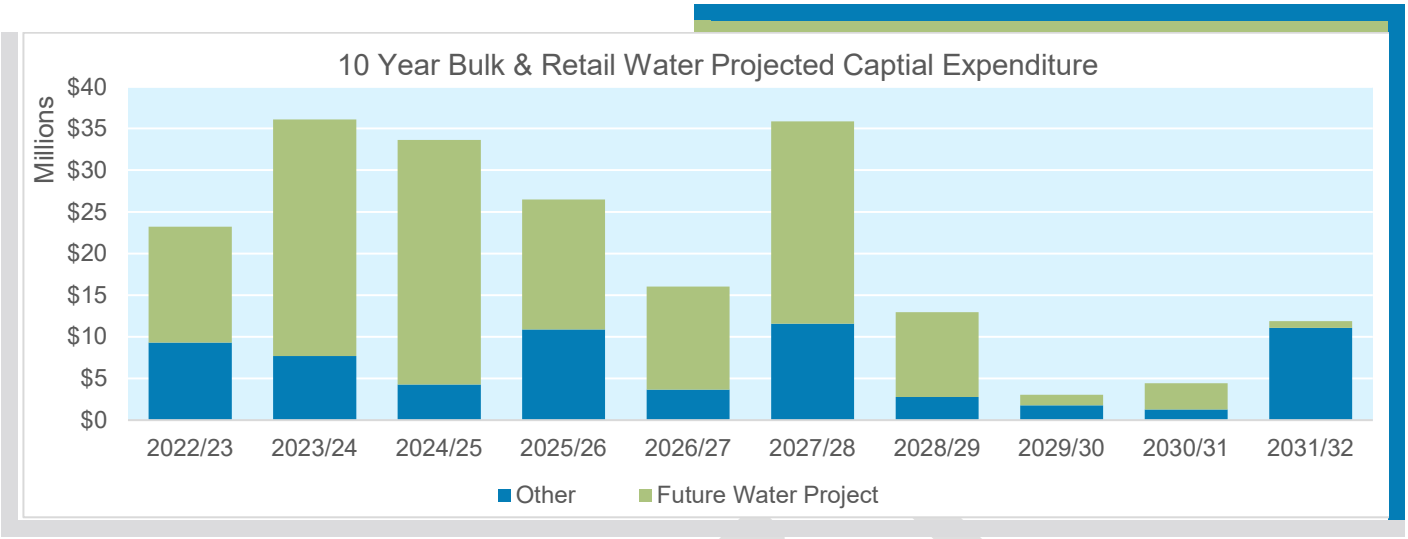
Increases in salaries and wages for maintenance over the last four years has been due to improvements in the reporting and break up of costs between operations and maintenance. Impact on maintenance requirements as a result of changes from the Future Water Project 2060 have not yet been considered and are not reflected in the graph above.

7.2. Capital works

Our long term capital works forecast is based on known major capital works and asset renewals based on asset remaining useful life, condition and current replacement costs from the latest asset valuations. Our annual capital works plan is reviewed and updated each year based on risk based renewal prioritisation, augmentation plans, planned defect remediation, condition of existing assets and budget estimates based on preliminary project design. Requirements for new assets are also identified and included in the capital works plan.

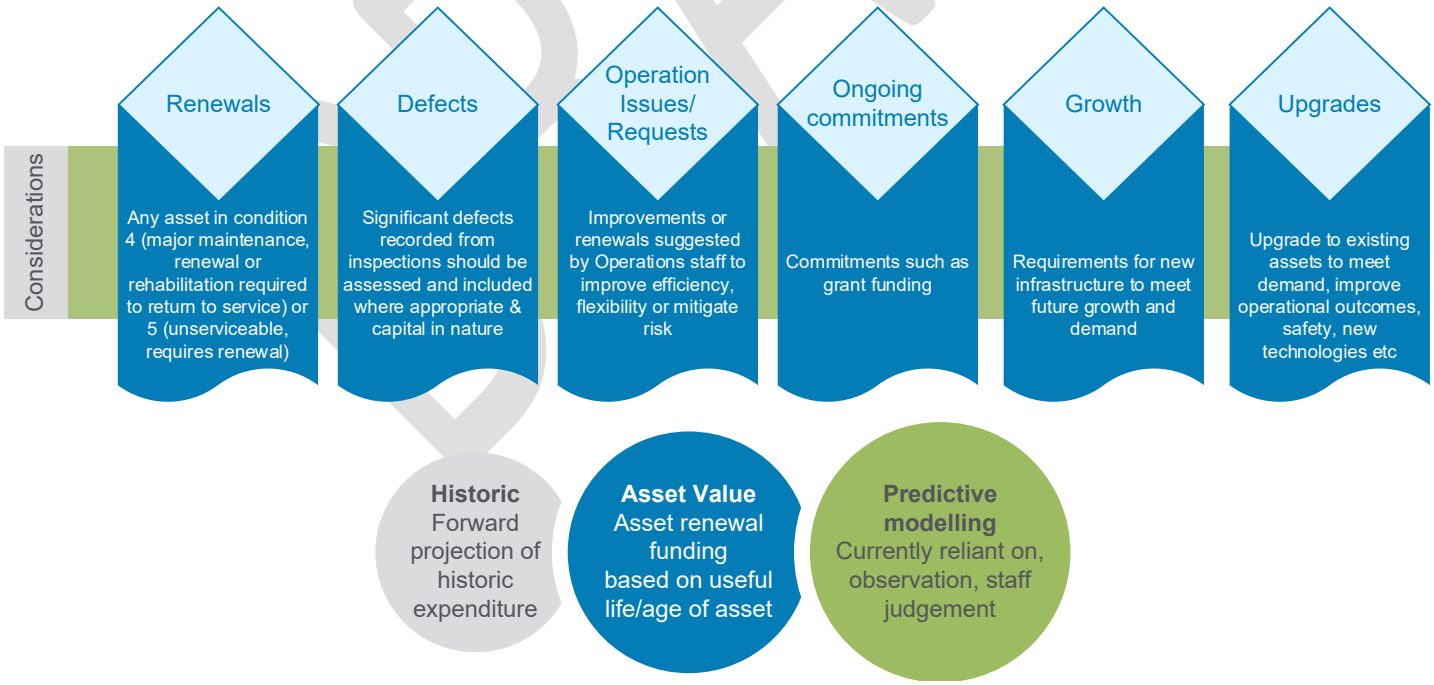
		Description
Capital works include:	Renewal	Works undertaken on or replacement of existing assets to ensure they continue to provide required service levels.
	New	The construction or acquisition of assets that did not previously exist
	Upgrade	Upgrading of existing assets to meet growth in demand or address gaps in service levels. This may be replacing a water main with a larger diameter pipe for example.

We have significant capital works over the next ten years with $143million for implementation of our Future Water Project to secure our future water supply and $88million for renewals and upgrades of existing assets.



7.2.1. Renewal/Replacement

Asset renewals and replacements are undertaken to ensure the ongoing reliability of existing infrastructure to deliver its required service. It is major work that does not increase the design capacity but restores, rehabilitates, replaces or renews the existing assets, for example, replacement of an existing water main with the same size, replacement of existing pumps and components with the same capacity, replacement of treatment process units with the same capacity and replacing filter bed material. Our capital works planning process begins in July each year, with budget submissions in November and our annual budget adopted at our June Council meeting in the subsequent year. The following inputs are considered in the capital works planning process:



Renewal strategy

Assets requiring renewal or replacement are identified from estimated remaining useful life as recorded in our asset register, inspections programs, failure history and our risk management process. There are currently no formally defined intervention levels to guide renewal strategies for our water assets. We rely on staff judgement for the best approach depending on individual situations. This may include a run to fail strategy for assets with low criticality and risk, while intervention would occur earlier or redundancy/spares maintained for more critical assets.

Renewal ranking criteria

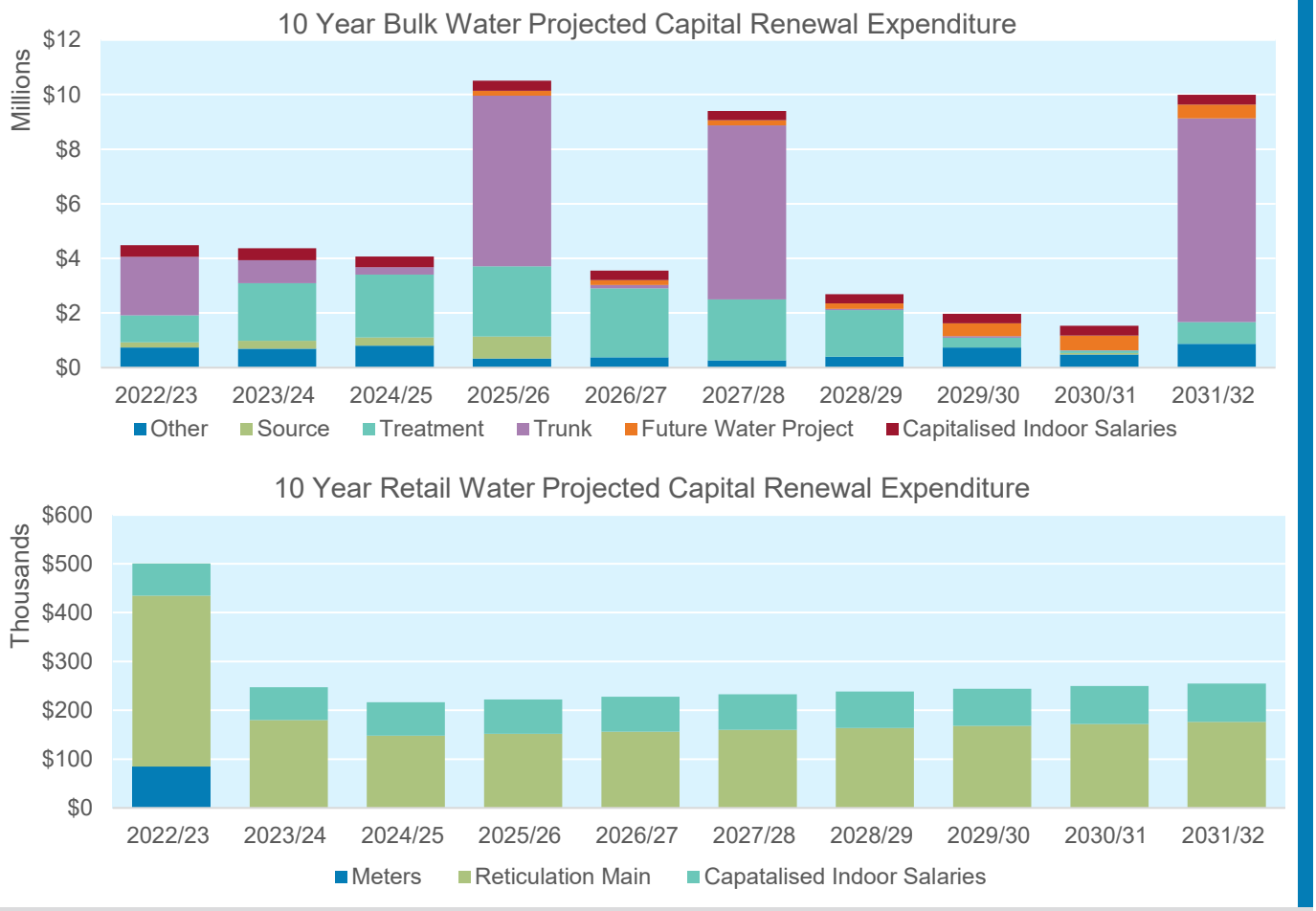
Renewals are prioritised by assessing proposed works against the following criteria to determine the risk and consequence of the asset failing should the works not be completed:

	Description
Safety	The potential for injury to staff or public due to operation or failure of an asset/service
Staff Morale	The subjective assessment of impacts on staff morale from ongoing operational issues
Loss of Service	The ability of the asset to perform its required service
Reputation	Potential for reputational damage/media attention from operation or failure of an asset/service
Redundancy	Are there alternative options to provide service
Water Quality	Impact of ongoing operation on water quality
Environmental	Potential for environmental damage as result of the operation or failure of an asset/service
Third Party Losses	The potential for damage to third parties from non-functional asset/provision of service
Business Cost	The cost to repair/replace the asset so it can provide its required service along with any other incidental costs to business

The impact of each of these criteria are ranked as: Insignificant | Minor | Moderate | Major | Catastrophic

Summary of future renewal expenditure

The graph below provides an overview of our projected expenditure on capital renewals of our water assets over the next ten years (as at March 2022).



7.2.2. Creation/Acquisition/Upgrade plan

The creation of new assets or upgrade of our existing assets is undertaken to meet growth in demand or to address gaps in service level delivery. The requirement for new or upgraded assets is identified from various sources, for example strategic plans such as our IWCM.

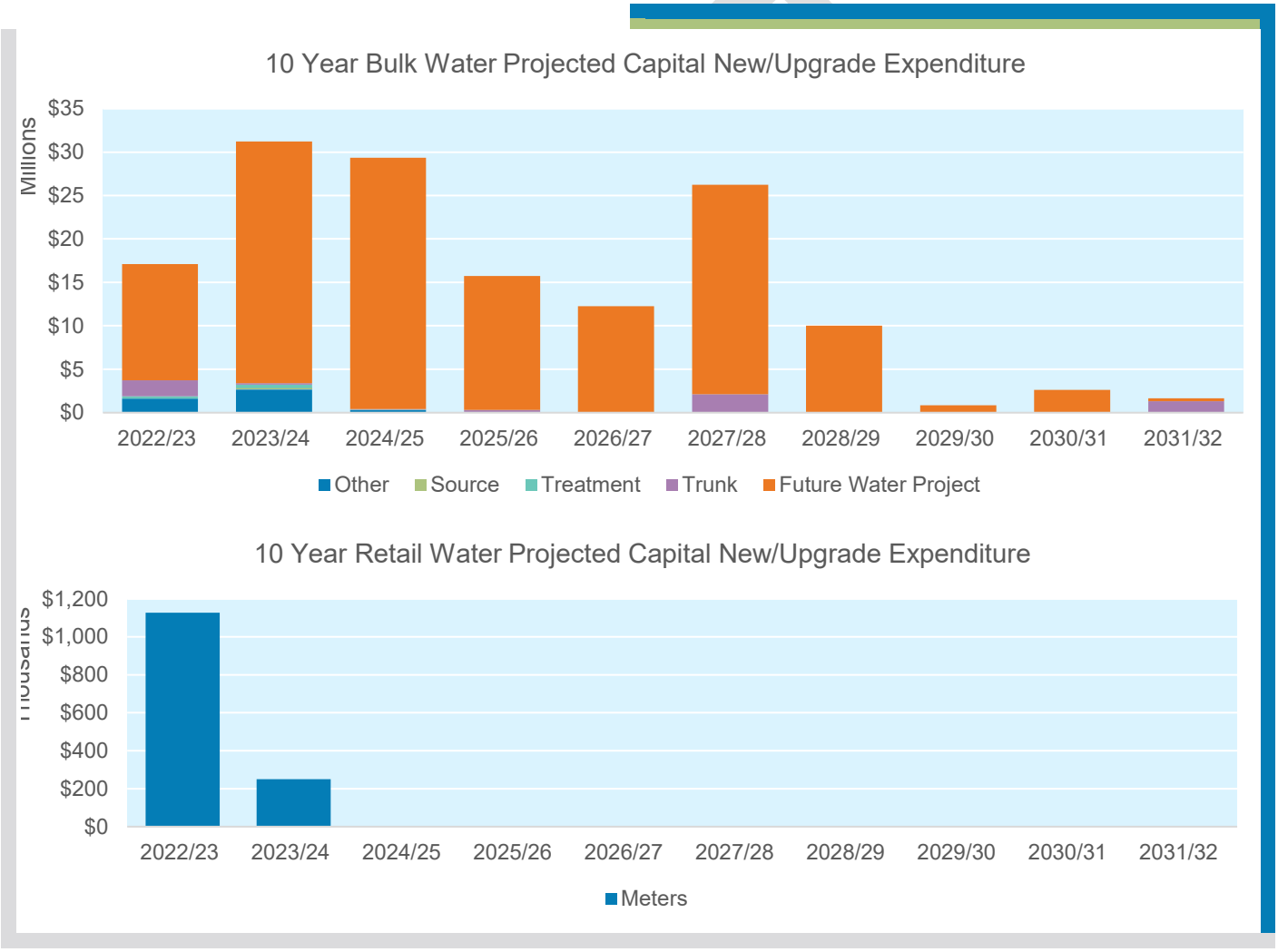
The IWCM is a strategic plan to secure our region a high-quality drinking water supply for future generations, which has identified several capital works projects which will result in the creation of new assets or upgrading of assets.

Capital investment strategy

The requirement for new or upgraded water assets are identified from several sources including strategic planning documents such as our IWCM, demand forecasting and analysis of existing service provision. Proposed capital works are ranked by priority, available funds and scheduled in the capital works plan.

Summary of future upgrade/new assets expenditure

The graph below provides an overview of our projected expenditure on capital new/upgrade works over the next ten years (as at March 2022).



7.2.3. Disposal plan

Disposal includes any activity associated with the disposal of a decommissioned asset. We will dispose of an asset when it becomes uneconomical to maintain and/or replace, or the service it provides is no longer required. Assets identified for disposal will be investigated to determine the required levels of service and the available options for alternate service delivery, if any. Disposal of assets from our asset register requires the approval of the General Manager.

7.2.4. Major works

The following major works are included in the projected capital expenditure over the next ten years:

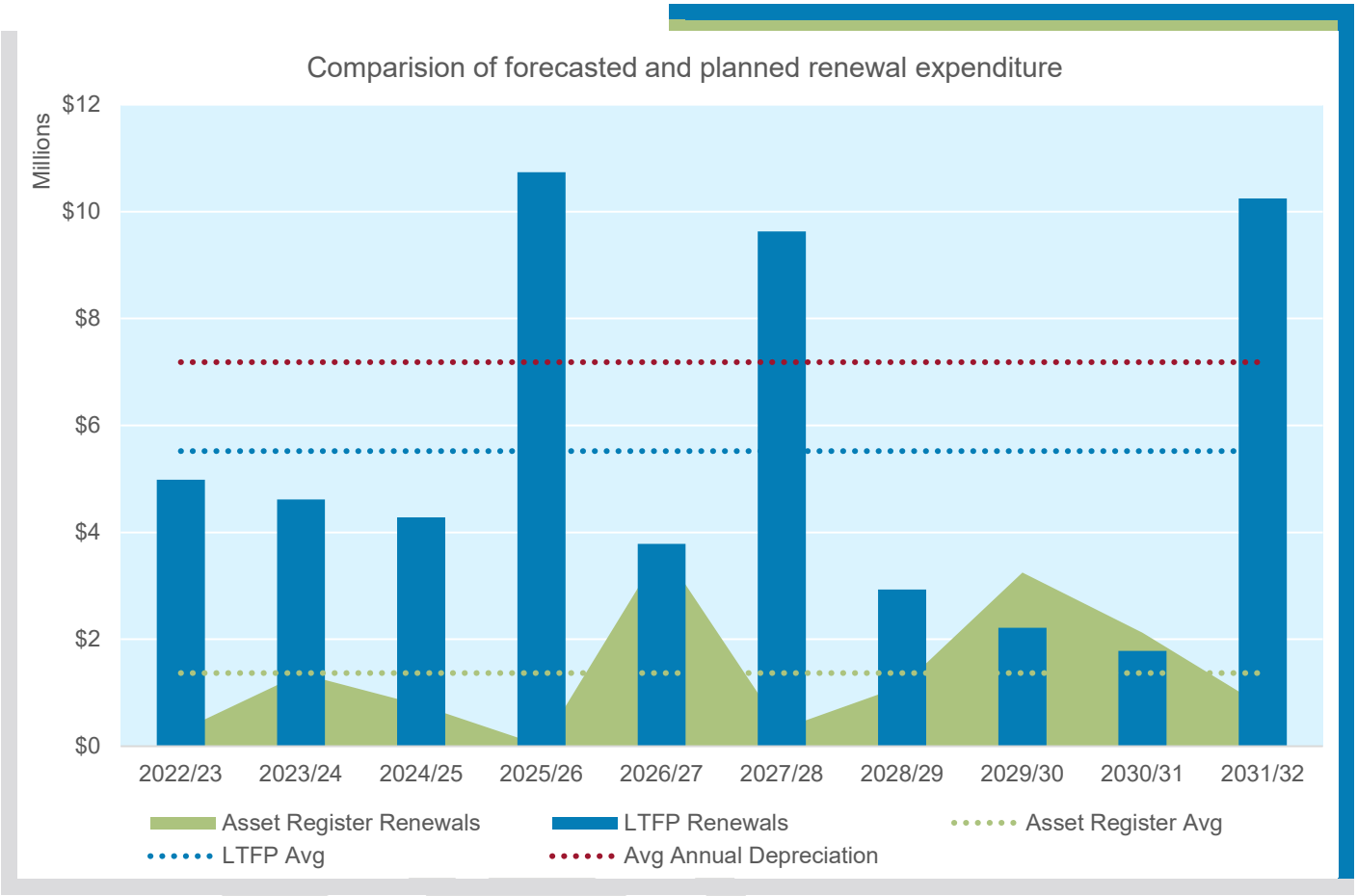
Major Capital Expenditure Works

	Works	New/Upgrade	Renewal
Trunk Mains	Broadwater 150 trunk main upgrade	$810,000	$990,000
	Coraki 225 trunk main renewal		$6,250,000
	Knockrow 450 trunk main renewal	$1,314,600	$7,449,400
	St Helena 600 trunk main upgrade	$7,247,000	$7,247,000
	St Helena 300 upgrade	$2,088,750	$6,266,250
Nightcap WTP	PLC switchboard upgrade	$365,750	$1,097,250
	Nightcap WTP site services renewal	$6,425,000	
	Treated water renewal	$1,008,000	
	Bulk chemical storage	$311,560	$1,246,240
Retail	Smart meters (retail)	$694,800	$706,800
	Backflow	$1,250,000	
	Reticulation main renewals		$2,345,000
Future Water Project	Water loss implementation	$1,220,040	$813,360
	Marom/Alstonville Renewals		$1,463,000
	Alstonville groundwater	$39,148,000	
	Woodburn new bores	$2,873,900	
	Tyagarah groundwater	$50,909,600	
	Groundwater land acquisitions	$19,098,200	
	Direct potable reuse pilot scheme	$6,369,800	
	Project management	$22,225,000	
	Stage 3 source planning	$2,293,300	
Other	Workplace consolidation	$10,775,000	
	Microwave bridge		$1,082,800
	Servers, storage and UPS renewals		$1,396,000

7.3. Service consequences

Our funding is meeting current service level, capital renewal and upgrade requirements.

The graph below depicts the variance between the expected renewal of assets from our asset register data, asset renewals identified in our long-term financial plan and annual depreciation of our water assets (as at March 2022).



The discrepancy between the long-term financial plan and asset register predicted renewals is largely due to inadequacies in internal processes for updating useful lives with our asset register. Impaired assets are currently addressed within our financial system and asset valuation, but useful lives are not updated in the asset register to reflect identified impairment of assets flagged for renewal or upgrade. An improvement action has been identified to address this issue.

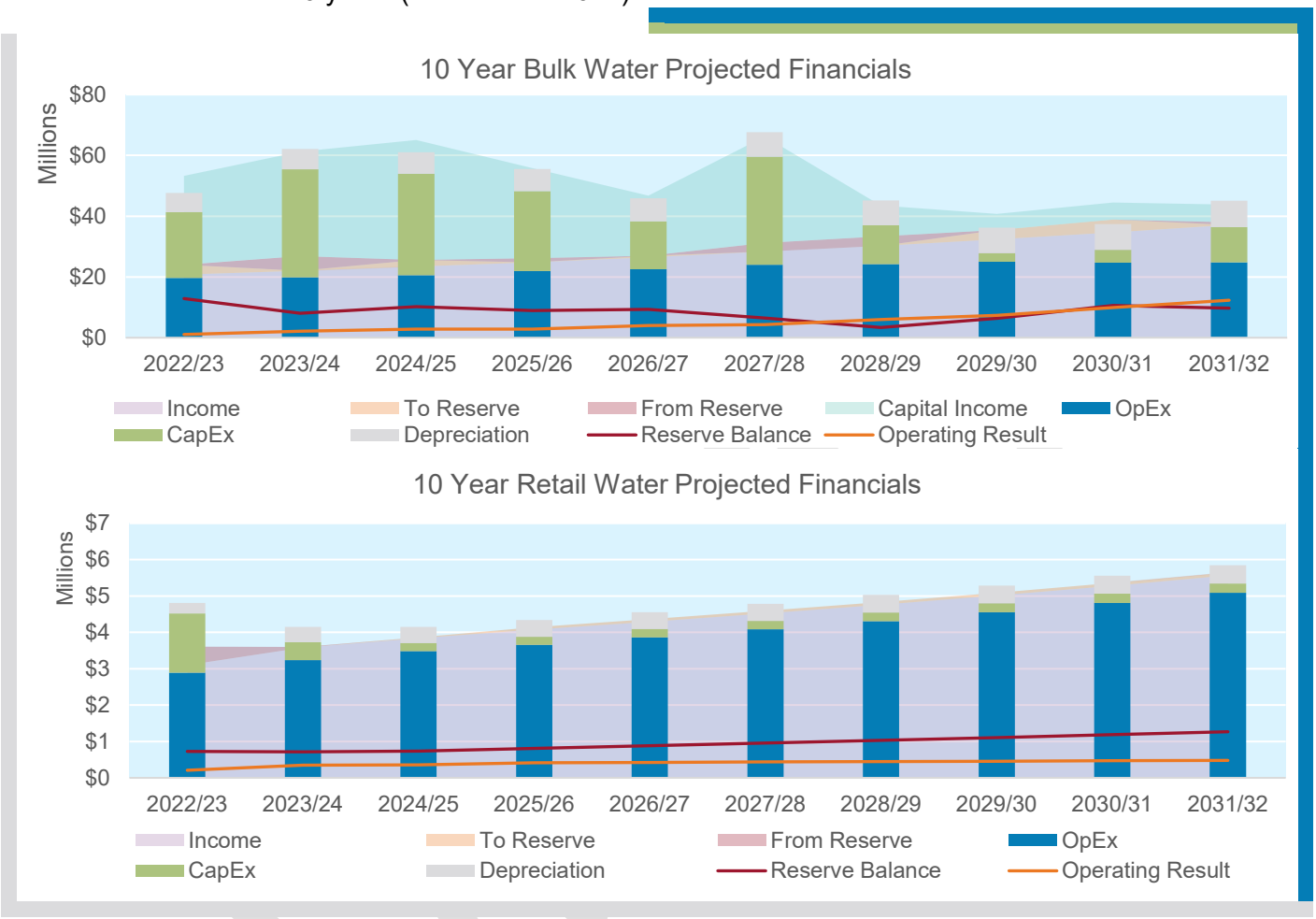
Delivery of the Future Water Project 2060 is critical for securing our water supply into the future and to meet increasing demand. This requires significant capital works projects to be undertaken. Our long-term financial projections show we can meet these needs, however any circumstances that impacts delivery of this project may potentially result in service consequences in the future.

8. Financial Summary

8.1. Financial projections

We undertake long term financial modelling for water supply on an annual basis. The aim of this modelling is to ensure we meet funding requirements of the capital works program and other lifecycle costs associated with operating and maintaining our assets, ensure we maintain an appropriate level of cash reserves and forecast our pricing structure over the long term.

The table below provides a summary of our water supply operating and capital expenses, income and cash reserves over the next 10 years (as at March 2022).



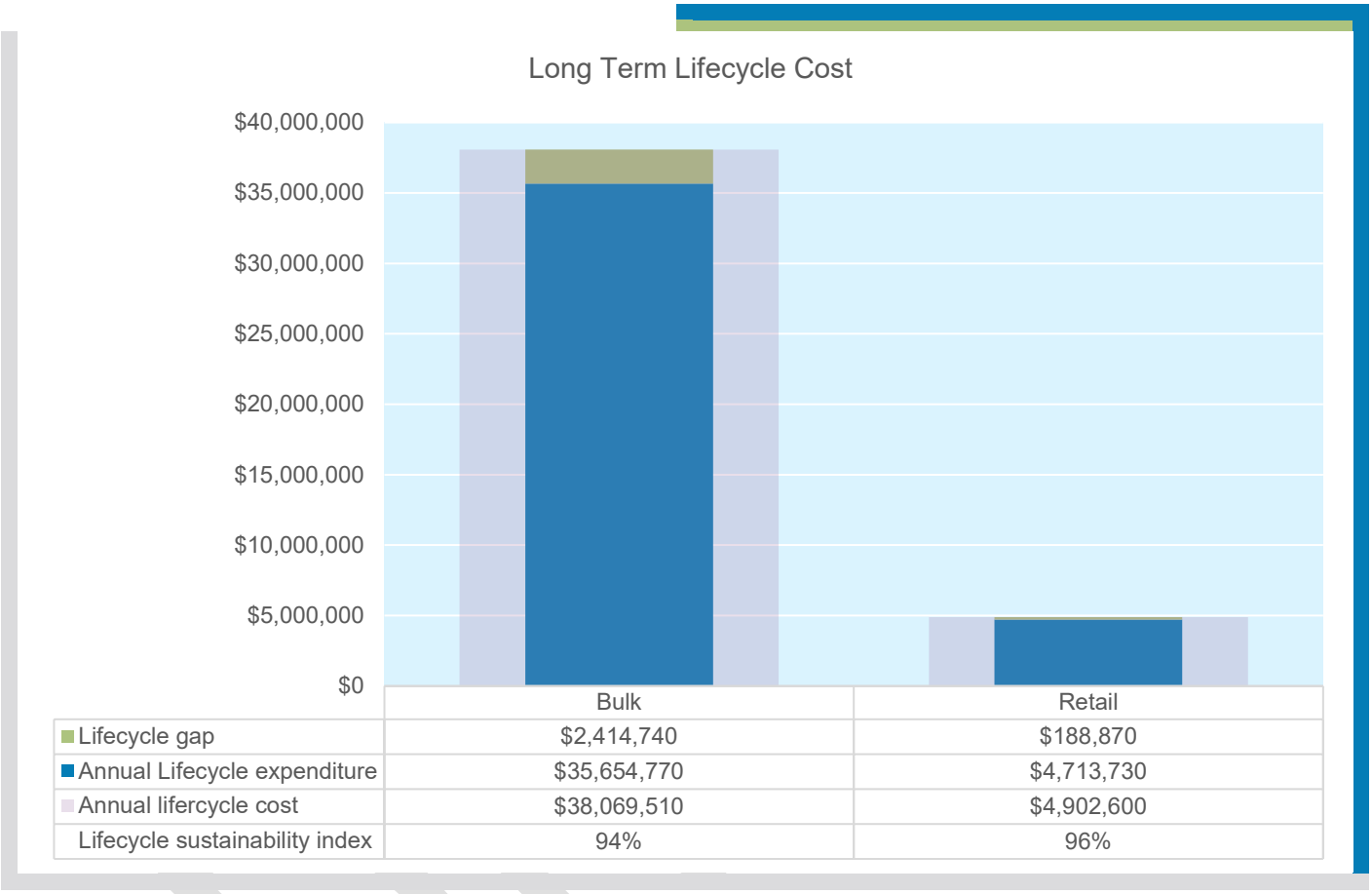
8.2. Financial Sustainability of service delivery

Our bulk water fund is in a healthy position, however significant capital expenditure is required to deliver the Future Water Project over the next ten years. Loans will be taken out to fund this expenditure. There will also be an increase in operational expenditure to deliver and operate these additional water sources and related assets. The cash reserve for the bulk water fund fell from $40million in 2021 to approximately $9.5million in 2022. Our target reserve balance for the bulk water fund is 50% of our yearly operation costs ($12million in 2022). Our bulk fund reserve fell below this target in 2022 and is expected to remain below it for the next ten years before returning above the target in 2033. Current projections show an estimated cash reserve of $19million in 2033.

Our retail water fund is also in a healthy position, however delivery of the smart metering program in 2022 will lower our cash reserves. Reserves will fall to $714,900 in 2024 before rising slowly over the next ten years. This will mean our cash reserves for the retail fund will remain well below our target balance for the next ten years (current target balance $2million).

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the asset life. Life cycle costs include operations and maintenance expenditure and asset consumption (depreciation expense). Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure will vary depending on the timing of asset renewals. A shortfall between life cycle cost and life cycle expenditure is the life cycle gap. A gap between life cycle costs and life cycle expenditure gives an indication as to whether present expenditure covers the assets that are being consumed each year.

The graph below shows the sustainability of our lifecycle costs for water assets (as at March 2022).



	Bulk	Retail
Lifecycle gap	$2,414,740	$188,870
Annual Lifecycle expenditure	$35,654,770	$4,713,730
Annual lifercycle cost	$38,069,510	$4,902,600
Lifecycle sustainability index	94%	96%

8.3. Funding strategy

Our funding sources are outlined below.

	Description	% of Total*
Water Sales - Bulk	Income from sale of bulk water to our constituent Councils	73%
Developer Contributions	Income from developer contributions toward future bulk water supply	14%
Water Sales - Retail	Income from sale of water to our retail customers	12%
Other	Other income such as developer contributions, interest, grants, fees, rental etc.	1%

Funding sources

*average percentage of total funding over next 4 years

Funding for the Future Water project 2060 capital works over the next ten years will be sourced from loans and our reserves.

8.4. Assumptions

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

Key assumptions made in this AMP are:

- Asset inventory is correct as at 30 June 2020 for the purpose of providing annual depreciation costs for the asset classes and condition assessments
- Maintenance allocations are largely based on maintaining the current level of expenditure
- All cost values are presented in current (2022) dollars

Accuracy of future financial forecasts may be improved in future revisions of this AMP by the following actions:

- Implementation of improved systems for better capture of asset data
- Update and refining the required renewal expenditure based upon improved data within the asset register
- Improving asset inspection and reporting procedures
- Review of the renewals program based on condition and useful life data
- Review of asset renewal profiles and depreciation rates/calculations as improved information becomes available
- Ongoing review and update of the levels of service and the required operating and maintenance regimes

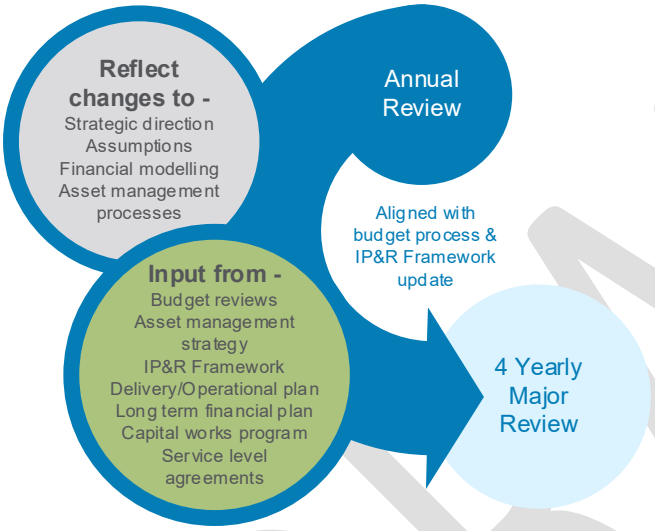
9. Plan Improvement & Monitoring

9.1. Improvement program

Our Asset Management Strategy was adopted by Council in August 2020. It outlines our commitment to continual improvement of our asset management practices. This strategy identified improvement actions to be implemented over the next four years to advance our overall asset management maturity. These improvement actions cover all aspects of our infrastructure asset management across our functional areas and services. A detailed implementation plan is currently being developed to outline the issues being addressed, desired outcomes, indicators of success and general approach to the improvement actions. There is significant work to be undertaken, and part of the monitoring and review process outlined below will include reviewing both the approach and resources required to carry out our improvement plan and adjust implementation of actions as required.

9.2. Monitoring and review

This asset management plan forms part of our overall asset management system. Monitoring and review of the document and outcomes achieved is undertaken as part of our planned review process for the asset management system.



9.2.1. Monitoring and review procedure

Review of our asset management plan will incorporate any changes to our processes from implementing asset management improvement actions, as well as reflecting any financial or strategic direction adjustments or changes to any assumptions the plan is based upon. The updated plan will be presented to Council for formal adoption.

9.2.2. Review Frequency

Our asset management plan will be reviewed on an annual basis. A major review and update will be undertaken every four years in line with our IP&R framework updates.

9.2.3. Performance measures

The performance and outcomes of our asset management, including implementation of this plan is monitored by our Asset Management Steering Committee. Formal performance measures and reporting are currently under development.

9.3. Roles & Responsibilities

The table below outlines the roles and responsibilities for the asset management plan.

Asset Management Plan		
Development	Asset Management System Officer	Utilise industry standards to develop and draft the document
Review	Asset Management Steering Committee Relevant Operations, Planning & Finance staff Leadership Team	Review and provide input on content
Update	Asset Management System Officer	Complete update of document
Adoption	Leadership Team Council	Formally adopt the document
Delivery	Operations, Planning & Finance teams	Deliver the actions outlined in the plan