

GLEN INNES SEVERN COUNCIL



WATER

ASSET MANAGEMENT PLAN PART 4



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1. EXECUTIVE SUMMARY

In addition to the overarching summary of Council assets in the Core Asset Management Plan, it is worth noting here the system of management of the Glen Innes Water supply.

Originally constructed in 1930, the town was served with a raw water supply through cast iron pipes. Many of these pipes remain in service, and today present a challenge regarding deposits of iron and manganese that accumulate on the rough pipe walls at times when those minerals are present in the treated supply.

Fortunately, the construction of a new off stream storage has largely eliminated the issue of manganese discoloration as all water is aerated prior to treatment, causing the mineral to precipitate out and be collected in the filtration process. In the past, blue green algae prevented the use of that facility, however this plan identified the need for a carbon dosing system, which was installed at the off-stream storage and commissioned in August 2017, thereby allowing its continued use through times when algae are present.

A new bore was installed and commissioned at the Glen Innes Aggregates Quarry in October 2019, after reaching Level Three (3) Water Restrictions, in compliance with the Drought Management Plan.

The only issues that may remain are in those areas where pipe circulation is incomplete, and dead ends occur. That situation allows particular bacteria (iron bacteria) to attack pipe walls and cause discoloration. While not a health issue, it is problematic from an aesthetic perspective and dead ends are eliminated as resources allow.

Old mains are also routinely renewed in those locations where road works are undertaken, to lower the risk of water leaks or future main breaks damaging newly constructed road assets.

The off-stream storage has not only provided quality assurance, but also water supply assurance in two ways. The bulk of water stored is sufficient to provide approximately 32 months of supply after depletion of available water in the Beardy Waters, when used in conjunction with the Red Range Road and Eerindii Ponds Bores. In addition, the new pumping arrangement and backup diesel powered unit provides for multiple sources in the event of infrastructure failure or water quality issues in a particular supply.

The business is operating at a break even cost basis, with additional surplus revenue used to address capital renewal works.

2. INTRODUCTION

2.1 BACKGROUND

This asset management plan covers the following infrastructure assets:

Table 2.1: Assets covered by this Plan

Asset Type	Quantity	Replacement Value	Accumulated Depreciation
Reticulation Mains	110 km	\$ 14,409,780	-\$ 4,422,903
Rising Mains	9 km	\$ 2,600,784	-\$ 649,612
Bores	4	\$ 410,526	-\$ 53,981
Pump stations	4	\$ 1,835,274	-\$ 964,376
Reservoirs	6	\$ 3,984,455	-\$ 1,862,919
Weirs	2	\$ 5,023,699	-\$ 124,481
Offstream Storage	3	\$ 630,918	-\$ 1,779,825
Treatment Works	2	\$ 12,554,216	-\$ 4,478,228
Total	N/A	\$ 41,449,652	-\$ 14,336,324

2.1.1 KEY STAKEHOLDERS

Refer to Core Asset Management Plan.

In addition to the Core Asset Management Plan, specific stakeholders in the preparation and implementation of this asset management plan are:

Federal and State Governments and Agencies	Department of Planning, Industry, and Environment
	Office of Environment and Heritage
	Office of Local Government
	Dams Safety NSW
	Independent Pricing and Regulatory Tribunal of NSW
Community	Existing customers
	Future customers
	NSW Fire and Rescue
	Downstream landholders

2.2 GOALS AND OBJECTIVES OF ASSET MANAGEMENT

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

Table 2.2: Council Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in AMP
IM 3.3.3 - Implement the Drought Management Plan and review as necessary.	The community has a plan in place to manage times of drought.	The Drought Management Plan sits within the resourcing strategy and is reviewed regularly including after each drought event.
IM 3.4.1 - Manage water functions according to adopted service levels.	The water business is managed according to adopted service levels.	The AMP sets the overall framework for the management of the water business. It defines the levels of service and describes how these will be attained.
IM 3.4.3 - Implement the Water Asset Management Plan and review as necessary.	Ensure annual asset renewal expenditure is targeted to ensure assets are renewed at a pace equal to asset consumption.	The AMP defines the asset renewal ratios required to meet ongoing asset consumption. It also defines the condition rating of assets and the planned capital renewals program that directly feeds into the annual operational plan and budget.
IM 3.4.5 - Implement the Integrated Water Cycle Management Plan and review as necessary.	The community has a current Integrated Water Cycle Management Plan in place.	The Integrated Water Cycle Management Plan sits within the resourcing strategy and is reviewed regularly with an operational budget set to cover the expenses of the review.

2.3 PLAN FRAMEWORK

Refer to Core Asset Management Plan.

2.4 CORE AND ADVANCED ASSET MANAGEMENT

Refer to Core Asset Management Plan.

3. LEVELS OF SERVICE

3.1 CUSTOMER RESEARCH AND EXPECTATIONS

Major expectations of the stakeholders are as follows:

EXISTING AND FUTURE CUSTOMERS AND GLEN INNES SEVERN COUNCIL

- A water supply that is acceptable and sustainable in terms of reliability, quality, quantity and price.
- A scheme that minimises adverse effects on the environment.
- A scheme that does not limit the future development potential of the town.
- An equitable system of charging which customers readily understand and complies with best practice outcomes.
- Good service in respect to response time for dealing with problems.

THE GENERAL PUBLIC

- That the water supply is safe from a public health perspective and that there is an adequate supply i.e. that no restrictions are in place.

COUNCIL EMPLOYEES

- A healthy and safe work environment.
- Fair and consistent management practices.
- Opportunity to provide input into current and future work practices and plans.

DOWNSTREAM LANDOWNERS

- Extraction volumes do not unreasonably reduce the flow of water in the Beardy Waters downstream of the weirs.

DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT (WATER)

- That the long-term viability of the state's water resources is not compromised.
- That future works meet the relevant standards in departmental publications.
- That best-practice management practices are in place, including:
 - Strategic Business Planning;
 - Pricing & Developer Charges (including Liquid Trade Waste Approvals);
 - Demand Management;
 - Drought Management;
 - Annual Performance Reporting; and
 - Integrated Water Cycle Management.
- That all the necessary licences are secured or renewed. Current licences include:
 - Licence No 90AL832586 - Beardy Weir - 2252ML, Expires 09/02/2026
 - Licence No 90AL827292 - Rocky Ponds Creek, 36ML, Expires 31/05/2025
 - Licence No 90AL827830 - Red Range Road Bore, 198ML, Expires 17/01/2025
 - Licence No 90WA836403 - Quarry Bore, 46ML, Expires 12/09/2039

- Licence No 90CA827699 - Deepwater Weir - 64ML - Expires 31/05/2025
- Licence No 90AL316700 - Mann River - 20ML - Expires 20/06/26

HERITAGE NSW ENVIRONMENT PROTECTION AUTHORITY (EPA)

- A scheme that disposes of wastes in a responsible manner and does not cause any harm to the environment.
- That Council complies with conditions imposed on any discharge licences.

DAMS SAFETY NSW

- That Council meets its obligations under the Dams Safety Act (2015) in respect of the Beardy Waters Weir.

OFFICE OF LOCAL GOVERNMENT

- That Council has considered the implications of the National Competition Policy and in particular, competitive neutrality and competitive tendering.

INDEPENDENT PRICING AND REGULATORY TRIBUNAL OF NSW

- That Council has taken into consideration the principles associated with Voluntary Structural Reform.
- That Council has a system of transparent reporting of costs and services.

3.2 LEGISLATIVE REQUIREMENTS

Refer to Core Asset Management Plan.

LOCAL GOVERNMENT ACT (1993)

- Section 68 - Council approval is required to carry out plumbing works.
- Section 60 - Ministerial approval is required to construct or extend a water treatment works or dam.
- Sections 634 to 640 - Water supply offences.
- Regulations - Water, Sewerage and Drainage.

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT (1997)

- No specific licencing is required under this Act, which replaced all previous pollution control acts.

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT (1979)

- All proposals, activities, and functions which are investigated, designed, planned, constructed, and operated by Council should be studied at all stages for their environmental impact on the basis of scale, location and performance.
- The findings of environmental studies should be reported initially in Reviews of Environmental Factors (REF), which indicate the need for further studies, their extent and depth, and the degree of public or other involvement.

- An Environmental Impact Statement (EIS) is a comprehensive report compiled from extensive studies. An EIS is required for:
 - Designated developments (part IV EP&A Act);
 - Projects that significantly affect the environment (part V EP&A Act); and/or
 - When designated by a State Environmental Planning Policy or in an LEP.

DAMS SAFETY ACT (2015)

- Dams Safety NSW has provided Councils across NSW with a twelve-month transition period to comply with all requirements of the new act and associated regulations.
- Under the new departmental arrangements, the training function previously provided by the Dams Safety Committee has been ceased, with Dams Safety NSW performing a pure regulatory function only.
- Additional requirements to have the weir assessed by a competent person (deemed by legislation to mean a registered engineer with specialist expertise in dam safety) at least every 15 years will be met in this transition period.

PUBLIC HEALTH ACT (2010)

The objectives of the Public Health Act are to:

- Protect and promote public health.
- Control the risk to public health.
- Promote the control of infectious diseases.
- Prevent the spread of infectious diseases.
- Recognise the role of local governments in protecting public health.

FLUORIDATION OF PUBLIC WORKS SUPPLIES ACT (1957)

- Council requires approval from the Department of Health to add Fluoride to the water supply (approval was granted on 10 June 1981 but Council has ceased dosing fluoride to the Glen Innes supply). Recommencement of fluoridation will require a community consultation process to be undertaken before any approval is granted.

WATER MANAGEMENT ACT (2000)

- The Natural Resources Access Regulator (NRAR) regulates conditions associated with the operation of dams and pumps for the extraction of water. Council is in discussion with the regulator regarding problematic conditions on existing licences that are not able to be complied with.

WORK HEALTH AND SAFETY ACT (2011)

- This Act impacts on all operations, including water. Council is required to provide a safe working environment and supply equipment to ensure safety.

INDEPENDENT PRICING AND REGULATORY TRIBUNAL ACT (1992)

- The Act empowers the Independent Pricing and Regulatory Tribunal (IPART). The tribunal sets principles and guidelines related to charging for water supply and sewerage. These include:
 - Charges must reflect the cost (user-pays); and

- Charges must be transparent.

3.3 CURRENT LEVELS OF SERVICE

Refer to Core Asset Management Plan.

3.4 DESIRED LEVELS OF SERVICE

Refer to Core Asset Management Plan.

AVAILABILITY OF SUPPLY

Pressure

The Water Loss Management Plan has seen two (2) pressure-reducing valves installed, creating a multi-zoned reticulation system and allowing excessive pressures to be reduced to more manageable levels. This has significantly reduced water losses throughout the reticulation system. Minimum pressure supply of 200kPa (static pressure) has been set as the supply standard.

Consumption Restrictions in Droughts

In recent years Council has developed the Eerindii Ponds, the Glen Innes Aggregates off stream storage facility. This facility provides approximately thirty-two (32) months' supply under level 5 restrictions after depletion of the Beardy Waters Weir, when used in conjunction with the Quarry and Red Range Road Bores.

Council's initiatives will alleviate the need to impose water restrictions except in an exceptionally severe drought, ensuring that the town can prosper and not be held back in any way due to a shortage of water.

Table 3.4a: Community Levels of Service

KEY PERFORMANCE INDICATOR	COMMUNITY LEVEL OF SERVICE	PERFORMANCE MEASUREMENT PROCESS	TARGET PERFORMANCE	CURRENT PERFORMANCE
Safety	Ensure public safety around high risk assets such as pump stations, water treatment plants, storage lagoons and reticulation fittings.	Reported hazards from Customer Service requests.	< 10 reported hazards pa.	Nil occurrences.
		Number of injuries.	No injuries.	Nil reported.
Quality	Minimal disruption to residential water schemes.	Reported unplanned events from Customer Service requests.	< 10 reported events pa.	5 occurrences (based on number of mains breaks)
Quantity	Satisfactory provision of water treatment assets to cater for long term growth.	Analysis undertaken every three (3) years.	Water infrastructure provides for a minimum of 125% of instantaneous peak demand.	Water infrastructure provides for a minimum of 200% of instantaneous peak demand.
Responsiveness	Maintenance staff to respond to reticulation failures within a given timeframe.	Response to emergency situations within one (1) hour of the alarm being raised.	90% of alarms to be responded to within one (1) hour of notification.	This is generally accepted to be satisfied, but exact response times are not documented.

Cost	Complaints and enquiries are responded to in a timely manner.	Dedicated customer service officer for infrastructure related enquiries.	Respond to 95% of written complaints or enquiries (complaints other than supply failure) within 10 working days.	A new customer service process has been implemented that provides for same day response in most cases.
	Costs are maintained within annual budget allocations.	Job Costing System.	Total annual (non-capital) expenditure is less than 102% of budget.	Total annual (non-capital) expenditure is less than 102% of budget.
	Service charges are to represent good value to the community.	Service charges identified for future years in the Long-Term Financial Plan.	Annual service charges are calculated according to best practice guidelines.	Annual service charges are calculated according to best practice guidelines.
Legislative Compliance	Compliance.	All schemes to ensure appropriate compliance with the WH & S Act, POEO Act and NSW Health approvals.	All schemes to comply with relevant legislation, in particular the need for a risk-based management approach according to the Australian Drinking Water Guidelines.	All schemes to comply with relevant legislation, in particular the need for a risk-based management approach according to the Australian Drinking Water Guidelines.
Function	Ensure systems meet user requirements and cater for residential growth.	All network infrastructure to be verified via network observation and analysis.	Systems cater for loadings during peak events.	Systems cater for loadings during peak events.

Reliability	Water supply is not affected by drought conditions.	Water supply records.	Severe water restrictions should not be imposed for more than 5% of the time, that they should not be imposed more often than once in every 10 years and the water supply should be capable of supplying 90% of normal demand through a repeat of the worst drought on record.	Permanent Level 1 water restrictions.
	Supply users are advised of planned supply interruptions in a timely manner.	Customer Service Officer.	Planned: Domestic customers will receive 48 hours written notice and Industrial (including Commercial) will receive seven (7) days written notice. Unplanned: Not to occur more than three (3) times per year not last longer than 12 hours for any resident.	Domestic customers receive 48 hours written notice by letter box drop and Industrial (including Commercial) will receive seven (7) days written notice.
Sustainability	Facilities are managed for future generations.	Master planning. Long-Term Financial Plan.	Key Financial Ratios are maintained.	Asset renewal ratio is 1.0. Asset maintenance ratio is 1.0

Table 3.4b: Technical Levels of Service

KEY PERFORMANCE INDICATOR	COMMUNITY LEVEL OF SERVICE	PERFORMANCE MEASUREMENT PROCESS	TARGET PERFORMANCE	CURRENT PERFORMANCE
Quality	Treated water is to comply with relevant standards.	NATA accredited laboratory to test samples.	100% compliance with the Australian Drinking Water Guidelines, published jointly by the National Health and Medical Research Council (NHMRC) and the Australian Water Resources Council (AWRC).	Council has implemented the recommended water-quality monitoring programme that involves weekly biological testing (from alternating sites at various locations within the network) and a monthly comprehensive physical and chemical analysis. Testing is by a NATA-certified laboratory.

Quantity	Condition.	Water quality complaints for colour.	Nil complaints under normal operating conditions (not involving main breaks or fire service activity).	9 reported, however, all were associated with routine mains flushing.
	Structural & hydraulic defects.	Hydraulic reserve capacity capable of supplying hydrant service level of 10 litres per second at 20 meters head.	Maintain service level across the network 99% of the time.	Service level is maintained across the network except during planned and unplanned outages.
	Collection, treatment, storage and reticulation infrastructure to cater for current number of domestic connections plus allowance for projected long-term growth.	Network Analysis undertaken on infrastructure.	> 99% of network having adequate capacity.	100% of network has adequate capacity

	Supply failure rectification is carried out expediently.	Customer request system.	<p>Priority 1 – water main break (discharging large quantity of water):</p> <ul style="list-style-type: none"> • During normal working hours – Attend site within one (1) hour; • After hours – Attend site within (2) hours. <p>Priority 2 – water service break (affecting single customer):</p> <ul style="list-style-type: none"> • During normal working hours – Attend site within two (2) hours; • After hours – Attend site within 2 hours. <p>Priority 3 – slow leak in water service or water main:</p> <ul style="list-style-type: none"> • Attend site within two working days. 	This target is being met throughout the service area.
	Provide minimum levels of pressure and flow.	Hydrant testing.	Provide minimum residual pressure of 20 metres head of water in the reticulation system whilst delivering a minimum of 10 litres per second through a hydrant.	This target is being met throughout the service area.

Safety	Supply meets peak day demands.	Flow meters and continuous pressure monitoring.	Provide for a peak day demand of 3000 litres per occupied residential tenement.	This target is being met throughout the service area.
	Water network free of preventable hazards & deficiencies.	WorkCover & insurance claims for personal injury or property damage.	Zero claims per annum.	Nil claims.
Function		Reported hazardous conditions via Customer Request System.	< 10 reported hazards pa.	Nil reports.
	Fit for purpose network and structures.	Compliance with design standards & maintenance programs.	100% compliance.	100% compliance.

4. FUTURE DEMAND

4.1 DEMAND FORECAST

Refer to Core Asset Management Plan.

4.1.2 DEMAND FACTORS

To enable fair and planned distribution of funding throughout the Council area, some of the factors influencing the prioritising of works are:

- Changing community expectations and demographics.
- Known areas of systems capacity limitations.
- Systems and processes with high maintenance demands.
- Development at the boundaries of the water supply zones.

In the relevant asset classes, some issues which may influence future asset provision are:

- Resident expectations will be raised for the provision of treated water outside the existing water supply zones and village areas.
- There will be an increased need to renew infrastructure in older land divisions.

More concentration on water re-use initiatives will occur.

Refer to Council's Demand Management Plan for details.

4.2 CHANGES IN TECHNOLOGY

Further development of Geographic Information Systems (GIS) and asset management systems will improve the management of water infrastructure, particularly the coordination of maintenance activities, through enhanced data collection, analysis and dissemination systems.

Automated water meter reading and analysis has the potential to radically improve the level of knowledge of water flows systemically and to individual properties. Subject to a successful grant funding allocation Council has resolved to install automated water meter reading technology to each metered connection.

4.3 DEMAND MANAGEMENT PLAN

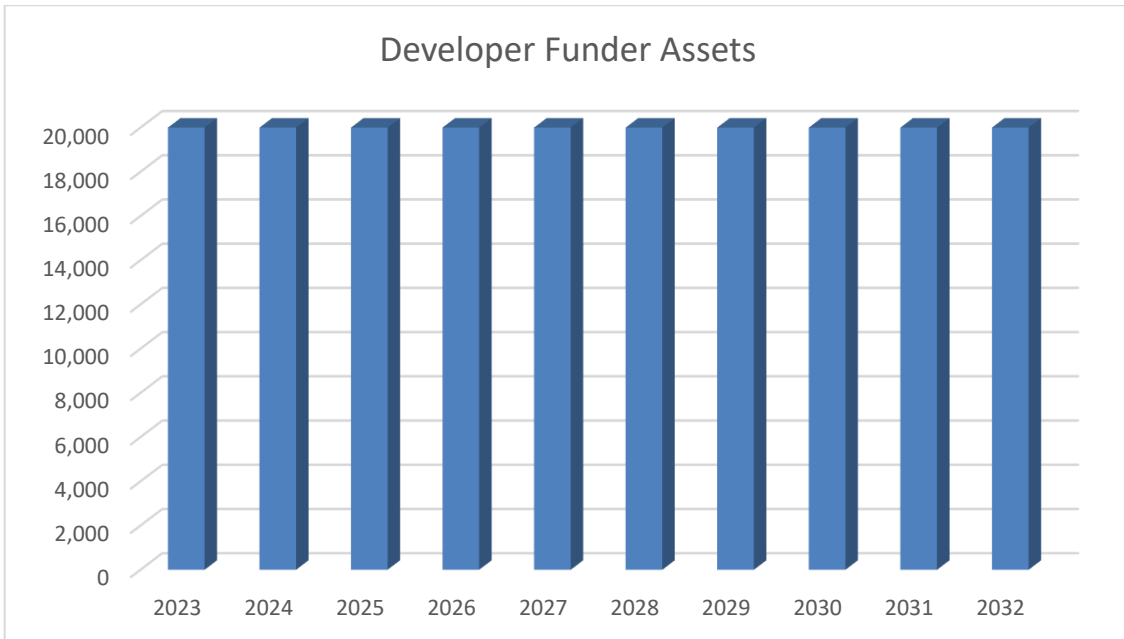
Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Demand management practices include non-asset solutions, insuring against risks and managing failures.

Refer to Council's Demand Management Plan for further details.

4.4 NEW ASSETS FROM GROWTH

The new assets required to meet growth will be acquired from land developments and constructed by Council. The new asset values are summarised in Fig 4.4.

Fig 4.4: New Assets from Growth



4.4.1 ASSUMPTIONS USED IN PROJECTED ASSET GROWTH

Refer to Core Asset Management Plan.

5. LIFECYCLE MANAGEMENT PLAN

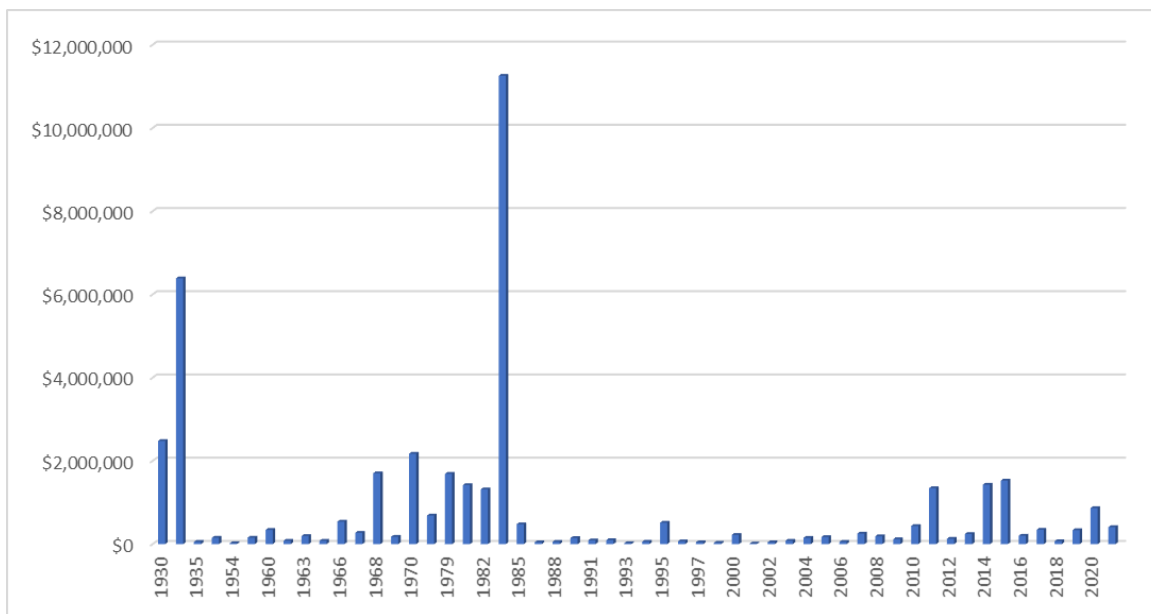
The lifecycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in section 3) while optimising life cycle costs.

5.1 BACKGROUND DATA

5.1.1 PHYSICAL PARAMETERS

The age profile of Council’s assets is shown below.

Fig 5.1.1: Asset Age Profile



5.1.2 ASSET CAPACITY AND PERFORMANCE

Council’s services are generally provided to meet design standards where these are available.

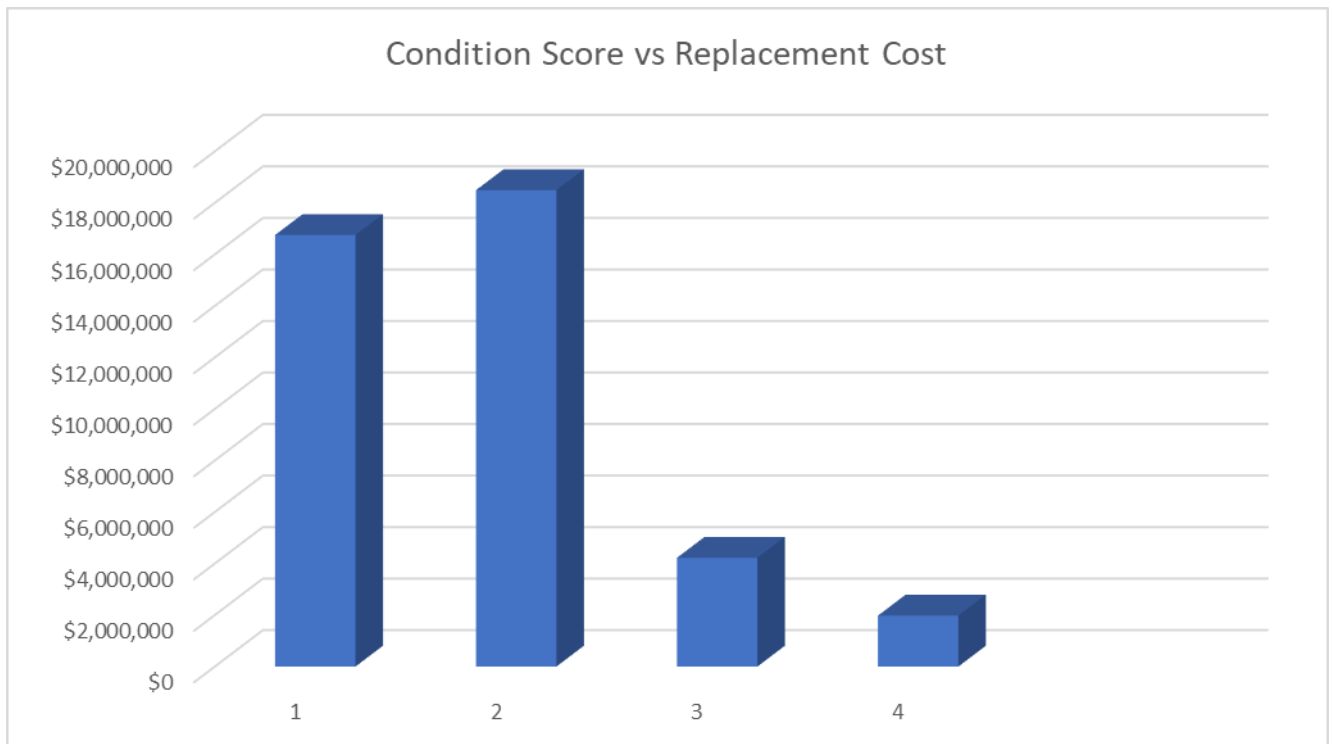
Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

LOCATION	SERVICE DEFICIENCY
Water Mains	Mains not constructed to maintain circulation flow in some areas (dead ends).
Water Quality	Colour issues caused by iron and manganese build up in mains near dead ends.

5.1.3 ASSET CONDITION

Fig 5.1.3: Asset Condition Profile



Condition is measured using a 1 – 5 rating system.¹

Rating	Description of Condition
1	Excellent: Only planned maintenance required.
2	Very good: Minor maintenance required plus planned maintenance.
3	Good: Significant maintenance required.
4	Average: Significant renewal/upgrade required.
5	Poor: Unserviceable.

¹ IIMM 2006, Appendix B, p B:1-3 ('cyclic' modified to 'planned')

5.1.4 ASSET VALUATIONS

Table 5.1.4a: Asset Summary

Asset Type	Quantity	Replacement Value	Annual Depreciation
Reticulation Mains	110 km	\$ 14,409,780	-\$ 160,061
Rising Mains	9 km	\$ 2,600,784	-\$ 28,898
Bores	4	\$ 410,526	-\$ 6,631
Pump stations	4	\$ 1,835,274	-\$ 60,088
Reservoirs	6	\$ 3,984,455	-\$ 42,033
Weirs	2	\$ 5,023,699	-\$ 3,604
Offstream Storage	3	\$ 630,918	-\$ 51,946
Treatment Works	2	\$ 12,554,216	-\$ 190,165
Total	N/A	\$ 41,449,652	-\$ 543,425

Sustainability reporting reports the rate of annual asset consumption for the asset category as a whole and compares this to asset renewal, upgrade and expansion, as shown in Table 5.4 below:

Table 5.1.4b: Financial Reporting Ratios

FINANCIAL REPORTING CRITERION WATER SUPPLY INFRASTRUCTURE - %	
Asset Consumption Rate	1%
Asset Renewal Rate	1%
Asset Upgrade Expansion Rate	1%

5.2 RISK MANAGEMENT PLAN

An assessment of risks associated with service delivery from infrastructure assets has identified critical risks to Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, being those assessed as 'Very High' (VH) - requiring immediate corrective action and 'High' (H) – requiring prioritised corrective action identified in the infrastructure risk management plan are summarised in Table 5.2.

Table 5.2: Critical Risks and Treatment Plans

ASSET AT RISK	WHAT CAN HAPPEN	RISK RATING (VH, H)	RISK TREATMENT PLAN
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Reticulation	Contaminated water supply.	Multiple.	The system is managed according to the risk-based Drinking Water Quality Management Plan for Glen Innes and Deepwater.
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5.3 ROUTINE MAINTENANCE PLAN

Routine operations and maintenance are the regular ongoing works that are necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again.

5.3.1 MAINTENANCE PLAN

Maintenance includes reactive, planned and cyclic maintenance work activities.

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

Planned maintenance is repair work that is identified and managed through a maintenance management system (MMS). MMS activities include inspection, assessing the condition against failure/breakdown experience, prioritising, scheduling, actioning the work and reporting what was done to develop a maintenance history and improve maintenance and service delivery performance.

Cyclic maintenance is replacement of higher value components/sub-components of assets that is undertaken on a regular cycle including repainting, building roof replacement, etc. This work generally falls below the capital/maintenance threshold.

The structure of Council's present Budget account lines does not permit the disaggregation of maintenance

Planned maintenance work is not distinguished from reactive maintenance work in Council's current finance system.

Future revision of this Asset Management Plan will include linking required maintenance expenditures with required service levels.

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

5.3.2 STANDARDS AND SPECIFICATIONS

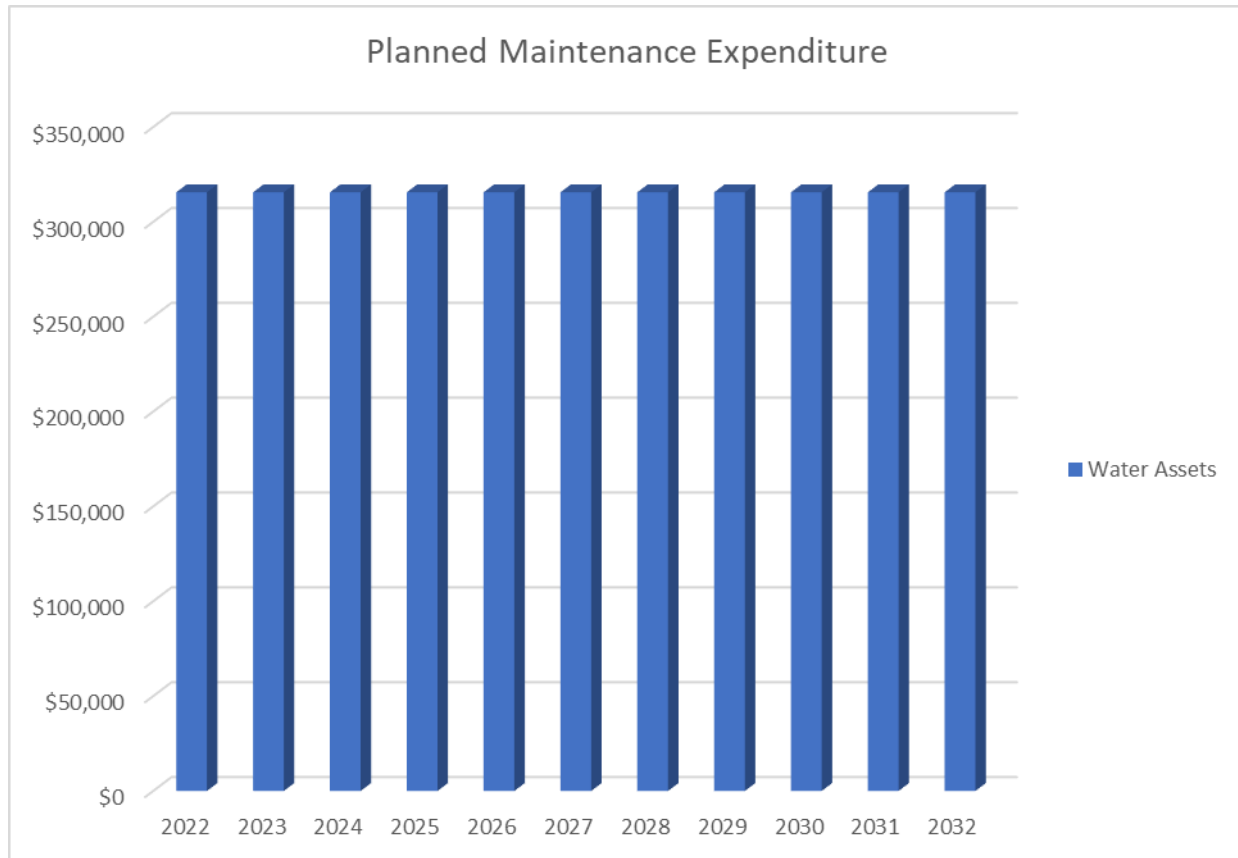
Maintenance work is carried out in accordance with the following Standards and Specifications.

- Maintenance work is carried out in accordance with sound industry practices and requirements set down by manufacturers of proprietary products.

5.3.3 SUMMARY OF FUTURE MAINTENANCE EXPENDITURES

Future maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Fig 5.3.3. Note that all costs are shown in current dollar values.

Fig 4.5.3.3 Planned Maintenance Expenditure



Maintenance is funded from Council's operating budget. This is further discussed in Section 6.2.

5.4 RENEWAL/REPLACEMENT PLAN

Renewal expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is upgrade/expansion or new works expenditure.

5.4.1 RENEWAL PLAN

Assets requiring renewal are identified from assessment of current remaining useful life. In many cases the road network that is driving the renewal program, as road assets inevitably lie above water assets in the field. If a road asset is to be rehabilitated, it makes sense to rehabilitate underlying assets at the same time, unless they have an expected remaining life that is longer than the expected life of the new road asset.

The priority ranking criteria is detailed in Table 5.4.1.

Table 5.4.1: Renewal Priority Ranking Criteria

CRITERIA	PRIORITY
Pipe is located under planned road works, and is in potentially obstructing road making equipment due to shallow depth	1
Pipe is located under planned road works, and is in condition 3,4 or 5	2
Non pipe assets in condition 5	1
Non pipe assets in condition 4	3

5.4.2 RENEWAL STANDARDS

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

- AS/NZS 3500
- AusSpec & Natspec

5.4.3 SUMMARY OF FUTURE RENEWAL EXPENDITURE

Projected future renewal expenditures are forecast to increase over time as the asset stock ages. The costs are summarised in Fig 5.4.3. Note that all costs are shown in current dollar values.

The projected capital renewal program is shown in Appendix B. This program has been determined from existing asset data and is a projection of the expected life from the construction year. As the bulk of the network was constructed in 1938 a theoretical glut of work will be required in 2018, however in reality this work will be carried out over an extended period to maximise efficient use of resources. Condition of mains is best ascertained by water mains break data. The incidence of mains breaks remains low, and so the effective life of pipe assets appears to have been underestimated in the past.

The plan moving forward is to renew assets according to the priority ranking criteria above, expending an amount equal to depreciation each year.

Fig 5.4.3a: Projected Capital Renewal Expenditure

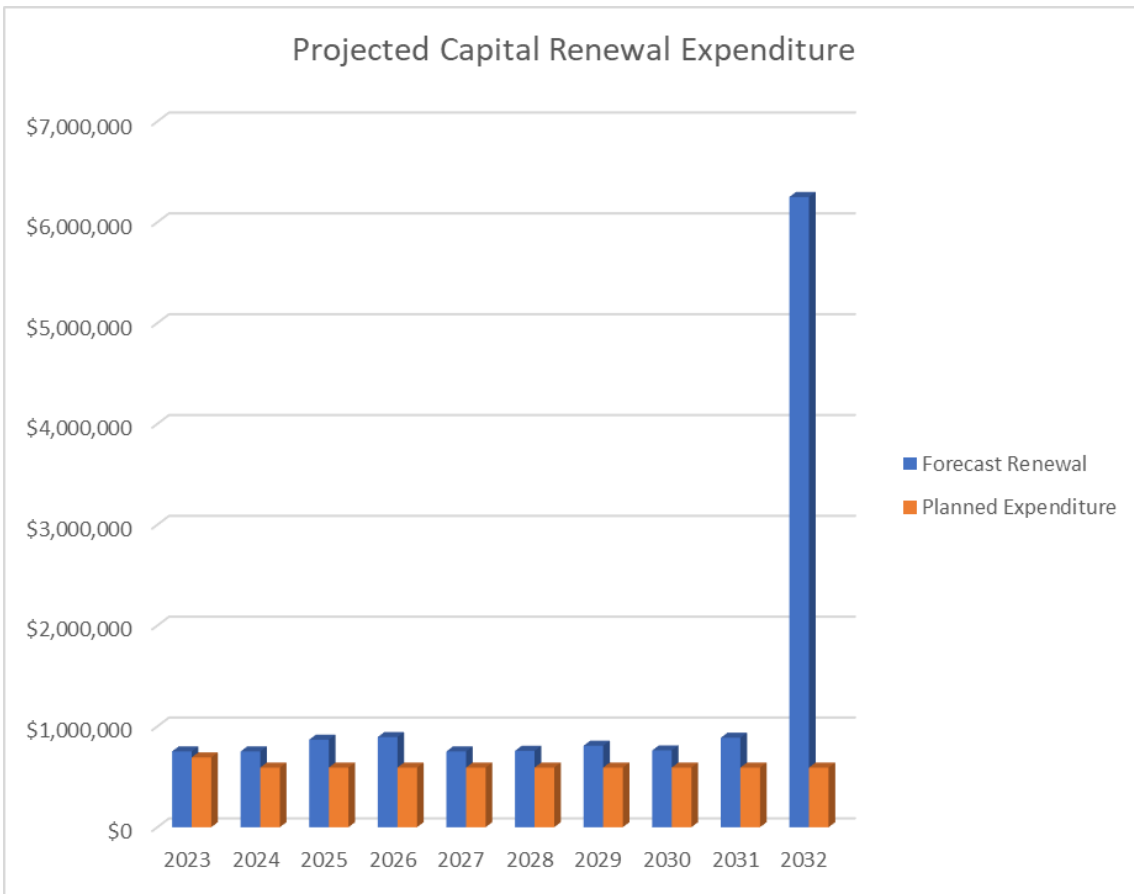
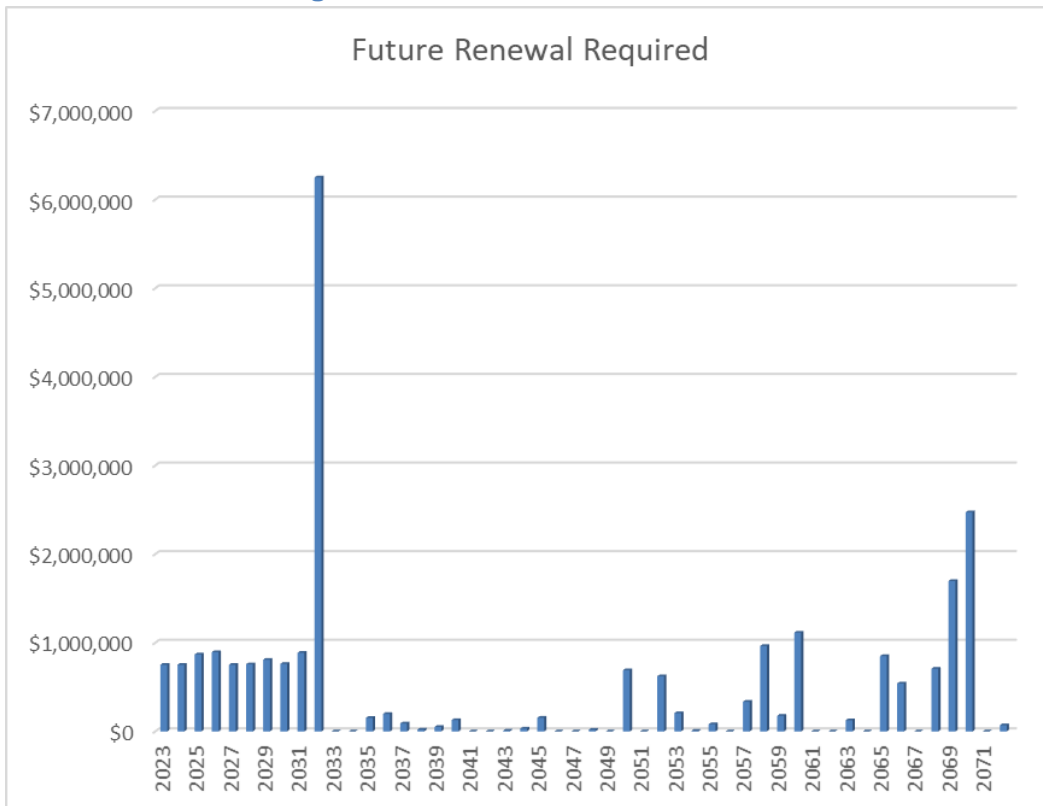


Fig 5.4.3b: 50-Year Future Renewal



Renewals are to be funded from Council's capital works program and grants where available. This is further discussed in Section 6.2.

5.5 CREATION/ACQUISITION/UPGRADE PLAN

New works are those works that create a new asset that did not previously exist or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development. These assets from growth are considered in Section 4.4.

5.5.1 SELECTION CRITERIA

Council has recently upgraded the head works and storage capacity of the Glen Innes supply system. This has been funded through the taking out of loans and government grants.

New reticulation assets and upgrade/expansion of existing assets are identified from various sources such as customer requests or developer payment for works. There is generally no funding proposed for future new assets from funds held in reserve. These assets are funded either from private works income or through cost savings in existing projects.

Table 5.5.: New Assets Priority Ranking Criteria

CRITERIA	PRIORITY
Required for development	New assets required for development are generally funded by private works costs borne by the developer.
Gravity main duplication or upsizing for increased demand	These assets are constructed as part of the renewal program where there are cost savings due to reduced cost of having service lines traversing road pavements.
Connection of dead-end mains to provide circulation of supply	These assets are constructed as part of the renewal program where there are cost savings due to reduced cost of maintenance of attending to customer complaints in an area.

5.5.2 STANDARDS AND SPECIFICATIONS

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

5.5.3 SUMMARY OF FUTURE UPGRADE/NEW ASSETS EXPENDITURE

Refer to Section 4.4.

New assets and services are to be funded primarily from developer payments for works as quoted. This is further discussed in Section 6.2.

5.6 DISPOSAL PLAN

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. Assets identified for possible decommissioning and disposal are shown in Table 5.6. These assets will be further reinvestigated to determine the required levels of service and see what options are available for alternate service delivery, if any.

Table 5.6 Assets identified for Disposal

ASSET	REASON FOR DISPOSAL	TIMING	CASHFLOW FROM DISPOSAL
Various	End of service life.	As per capital renewal program.	Nil.

Where cash flow projections from asset disposals are not available, these will be developed in future revisions of this asset management plan.

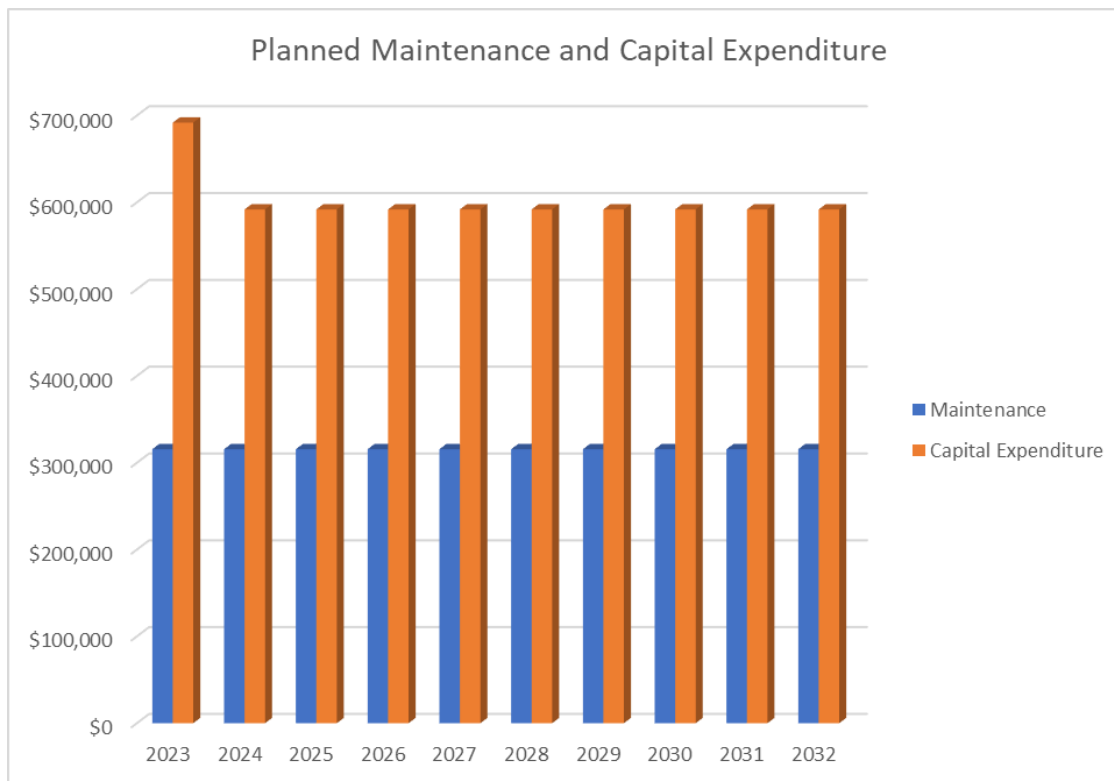
6. FINANCIAL SUMMARY

This section contains the financial requirements resulting from all the information presented in the previous sections of this asset management plan. The financial projections will be improved as further information becomes available on desired levels of service and current and projected future asset performance.

6.1 FINANCIAL STATEMENTS AND PROJECTIONS

The financial projections are shown in Fig 6.1 for planned operating (operations and maintenance) and capital expenditure (renewal and upgrade/expansion/new assets).

Fig 6.1: Planned Maintenance and Capital Expenditure



Note that all costs are shown in current dollar values.

6.1.1 SUSTAINABILITY OF SERVICE DELIVERY

There are two (2) key indicators for financial sustainability that have been considered in the analysis of the services provided by this asset category, these being long term life cycle costs and medium-term costs over the 10 year financial planning period.

Long term - Life Cycle Cost

Life cycle costs (or whole of life costs) are the average costs that are required to sustain the service levels over the longest asset life. Life cycle costs include maintenance and asset

consumption (depreciation expense). The annual average life cycle cost (10-year forecast) for the services covered in this asset management plan is \$859,000.

Life cycle costs can be compared to life cycle expenditure to give an indicator of sustainability in service provision. Life cycle expenditure includes maintenance plus capital renewal expenditure. Life cycle expenditure will vary depending on the timing of asset renewals. The life cycle expenditure (10-year average forecast) is \$917,000.

A gap between life cycle costs and life cycle expenditure gives an indication as to whether present consumers are paying their share of the assets, they are consuming each year. The purpose of this water asset management plan is to identify levels of service that the community needs and can afford and develop the necessary long-term financial plans to provide the service in a sustainable manner.

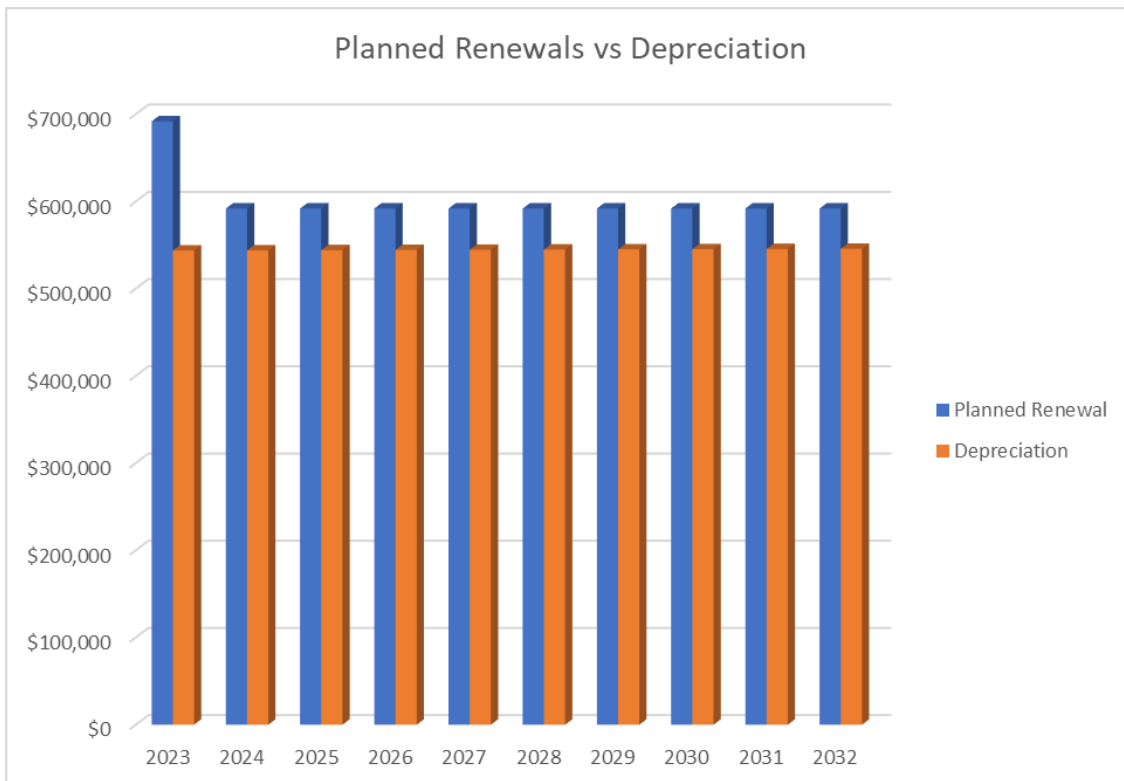
The life cycle surplus for services covered by this asset management plan is \$58,000. The life cycle sustainability index is 107%.

Medium term – 10 Year Financial Planning Period

Funding for the remainder of the delivery program will be adequate to keep pace with asset consumption using the previous financial modelling that is contained in the asset register. These will be reviewed, and it is hoped that actual costs will prove to be much lower than have been adopted in the past. The current iteration of this plan provides accurate modelling as project history accumulates and costs with associated variables become more accurately known.

Council will manage the ‘gap’ by developing this asset management plan to provide guidance on future service levels and resources required to provide these services.

Fig 6.1.1: Planned Renewals vs Depreciation



6.2 FUNDING STRATEGY

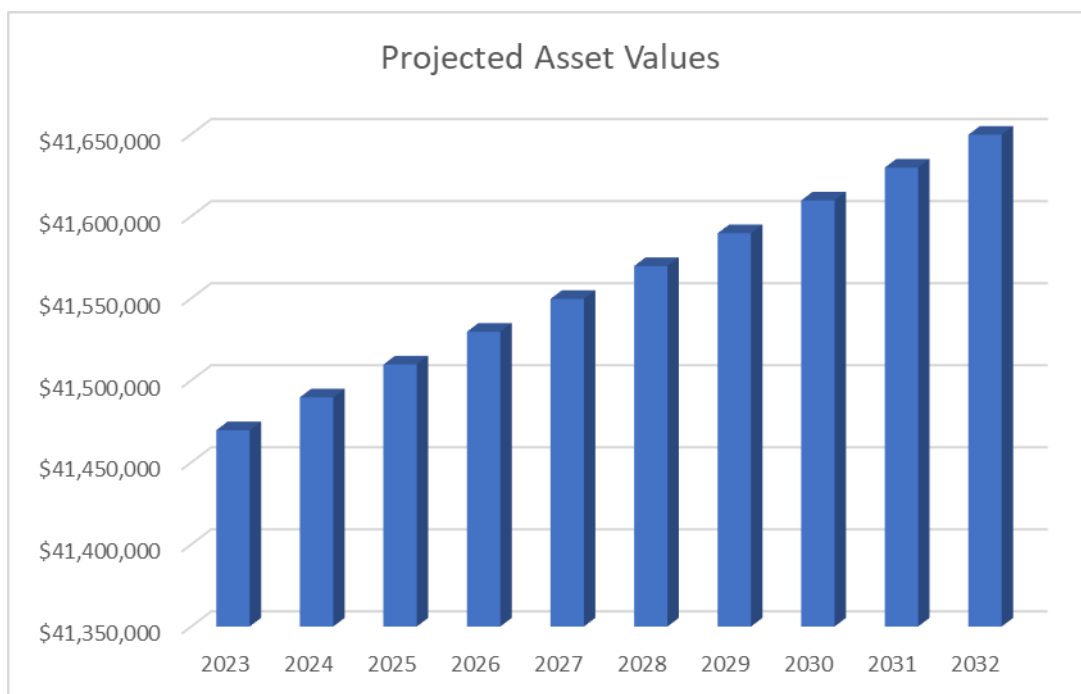
Projected expenditure identified in Section 6.1 is to be funded from Council's operating and capital budgets. The funding strategy is detailed in the Council's 10-year long term financial plan.

Achieving the financial strategy will require an ongoing commitment to fund the increasing demand for asset renewals. Renewal costs may outpace increased revenue from development growth.

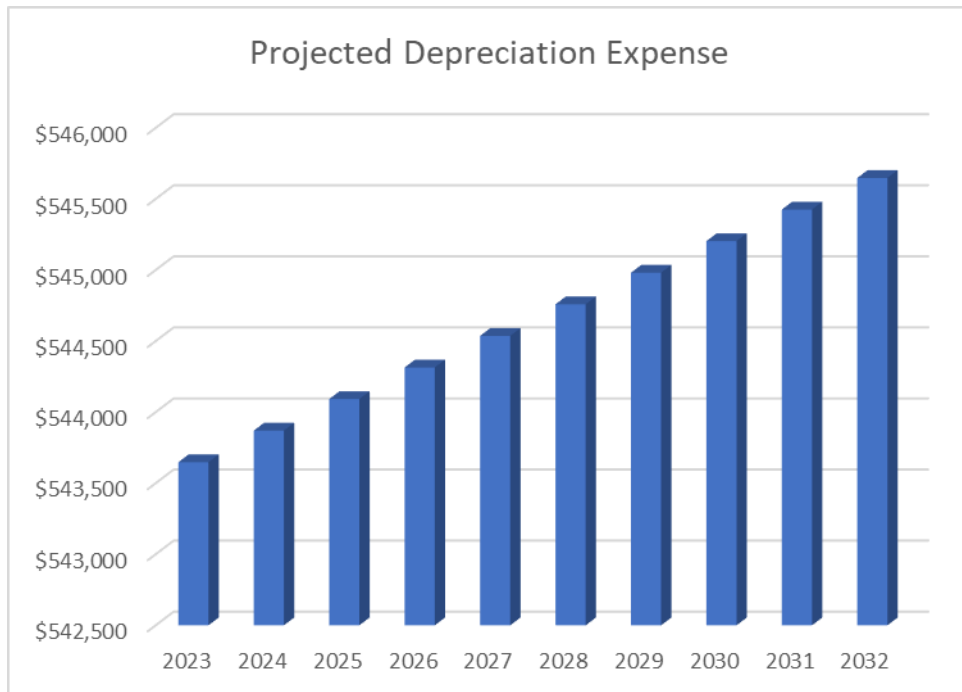
6.3 VALUATION FORECASTS

Asset values are forecast to increase as additional assets are added to the asset stock from construction and acquisition by Council and from assets constructed by land developers and others and donated to Council. Fig 6.3a shows the projected replacement cost asset values over the planning period in current dollar values.

Fig 6.3a: Projected Asset Values



Depreciation expense values are forecast in line with asset values as shown in Fig 6.3b.

Fig 6.3b: Projected Depreciation Expense

The depreciated replacement cost (current replacement cost less accumulated depreciation) will vary over the forecast period depending on the rates of addition of new assets, disposal of old assets and consumption and renewal of existing assets.

6.4 KEY ASSUMPTIONS MADE IN FINANCIAL FORECASTS

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

Table 6.4: Key Assumptions

PARAMETER	DOCUMENT SECTION	ASSUMPTION
Asset Values	Core Asset Management Plan, Section 5	GIS – recorded quantities and reviewed unit rates, as at June 30 of previous year.
Depreciation	Core Asset Management Plan, Section 7	Depreciation curve method as AASB116 with reviewed useful lives applicable as at June 30 of previous year.
Levels of service	Section 3 above	Present levels maintained or enhanced.
Demand	Section 4 above	Renewals using current technology, uniform population and asset stock growth to 2030.
Maintenance and Renewal Expenditure	Section 5 above	Similar pattern to previous years, with regular increases to recognise larger asset stock.

Maintenance costs for water supply assets will typically increase to allow for the increase in total asset value (reflecting the higher costs associated with managing a larger asset stock). Again, asset values are predicted to increase over the reporting period. Maintenance costs will need to be closely monitored to ensure that sufficient funds are available to optimise long-term expenditure and not create a backlog.

7. ASSET MANAGEMENT PRACTICES

7.1 ACCOUNTING/FINANCIAL SYSTEMS

Refer to Core Asset Management Plan.

7.2 ASSET MANAGEMENT SYSTEMS

Refer to Core Asset Management Plan.

7.3 INFORMATION FLOW REQUIREMENTS AND PROCESSES

Refer to Core Asset Management Plan.

7.4 STANDARDS AND GUIDELINES

Refer to Core Asset Management Plan.

7.5 DATA CONFIDENCE LEVEL

Data confidence levels for this AMP are rated as B or C.

8. PLAN IMPROVEMENT AND MONITORING

8.1 PERFORMANCE MEASURES

Refer to Core Asset Management Plan.

8.2 IMPROVEMENT PLAN

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

Table 8.2: Improvement Plan

TASK NO	TASK	RESPONSIBILITY	RESOURCES REQUIRED	TIMELINE
1.	Implement automated water meter reading system.	Manager Integrated Water Services	A budget of \$600,000 has been allocated in 2021/2022 financial year for stage 2.	July 2022
2.	Review Strategic Plans including IWCM.	Manager Integrated Water Services	External consultant.	June 2023
3.	Develop priority ranking system for water upgrade program.	Manager Asset Services	Annual road rehabilitation plan to correlate underground service renewals.	Annually
4.	Undertake annual review of this Asset Management Plan.	Manager Asset Services	Staff time.	Annually for December Council meeting.
5.	Separate maintenance expenditure into reactive and proactive lines.	Chief Financial Officer	New finance system.	As new finance system is implemented.

8.3 MONITORING AND REVIEW PROCEDURES

Refer to Core Asset Management Plan.

REFERENCES

Refer to Core Asset Management Plan.