Gwydir Shire Council

Transport
Asset Management Plan

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Executive Summary

Introduction

This Asset Management Plan (AMP) has been developed to guide and provide a foundation for the responsible management of Gwydir Shire Council's transport assets and services, aligned with contemporary best practice and standards and the requirements of the NSW Integrated Planning and Reporting framework.

The AMP has been developed with reference to Council's Asset Management Policy and Asset Management Strategy and should be read in conjunction with those documents. It also provides alignment between Council's Long-Term Financial Plan, Community Engagement Strategy, Community Strategic Plan, Operational and Delivery Plans.

Asset Portfolio

This Transport AMP covers the key road infrastructure assets owned or controlled by Council that underpin the delivery of critical transport and drainage services to the community. These assets include roads, bridges, footpaths and storm water assets. The scope and value of this portfolio is summarised below.

Table 1 Transport asset portfolio quantity and value

Asset Type	Quantity	Value
Bridges	298	$ 52,237,644
Footpaths	114	$ 3,378,803
Kerb & Guttering	225	$ 2,016,868
Sealed	4,619	$ 246,903,065
Unsealed	3,057	$ 102,131,037
Urban Storm Water Drainage	211	$ 6,614,181
Total	8,524	$ 413,281,598

The condition of Council's assets is assessed and rated on a five-point scale from 'Excellent' to 'Very Poor'. The breakdown of the transport asset portfolio's condition by value, based on the currently available asset register data, is shown in Figure 3.

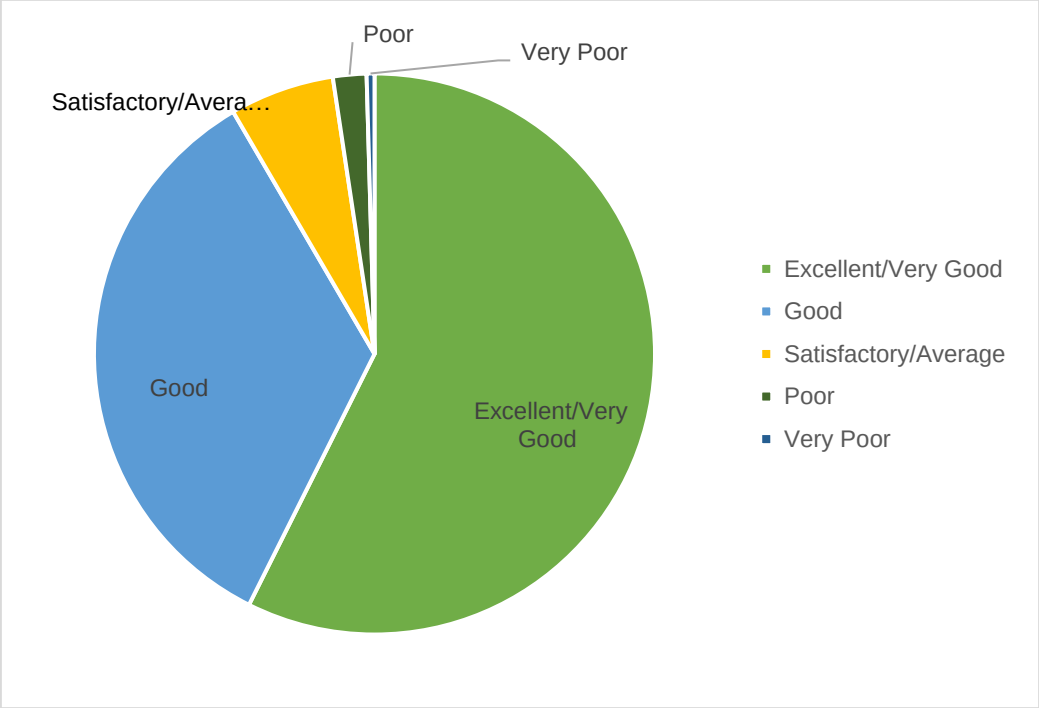

Figure 1 Asset condition breakdown by value

The large majority (92%) of assets by value can be seen as being in the two highest levels of condition, indicating that current management and maintenance regimes for roads assets are appropriate.

Asset Demand

The primary demand drivers of population growth, demographics, and climate change have been considered in assessing likely roads service demand on assets, and together suggest minimal levels of growth in demand are likely to occur across the 10-year AMP planning period.

Changes in demand arising from these drivers will be managed through a combination of managing existing assets, upgrading of existing assets, providing new assets to meet demand, and demand management.

Levels of Service

Council maintains close and regular engagement with the community on levels of service, in line with its Community Engagement Strategy 2022-2026. In 2024, Council conducted a shire wide survey to inform community priorities and desires regarding levels of services. Following a change in maintenance practices on sealed and unsealed roads, survey results will be combined with measured engineering outputs to inform structured levels of service. This plan targets aspirational levels of service adopted by Council prior to the formation of this plan.

Risk Management

Council's risk assessment processes are set out in the Gwydir Shire Council's Risk Management Appetite and other associated documents. Critical risks are those assessed as either 'Very High' or 'High' under this framework and are regularly reported to Council. Climate change and associated asset resilience is an increasing source of transport service and asset risk, and consequently an increasing area of management focus. These risks have been identified in Council's Climate Change Adaptation Plan.

Financial Projections

Capital and operating expenditures for the transport asset class have been based on life cycle modelling and include expenditures for operations, maintenance, renewal, growth and acquisitions, and disposal. The total expenditure forecast across these categories, and the breakdown across the ten-year planning horizon, are shown in Figure 2.

The total projected expenditure across the ten years is $86.8 million with an annual average of $7.89 million. Anticipated capital renewal peaks in 2025 and 2027 will be reviewed with a view to smoothing the overall expenditure profile.

In summary, this transport AMP is anticipated to be fully funded, with total funding across the ten-year period expected to meet combined expenditure requirements.

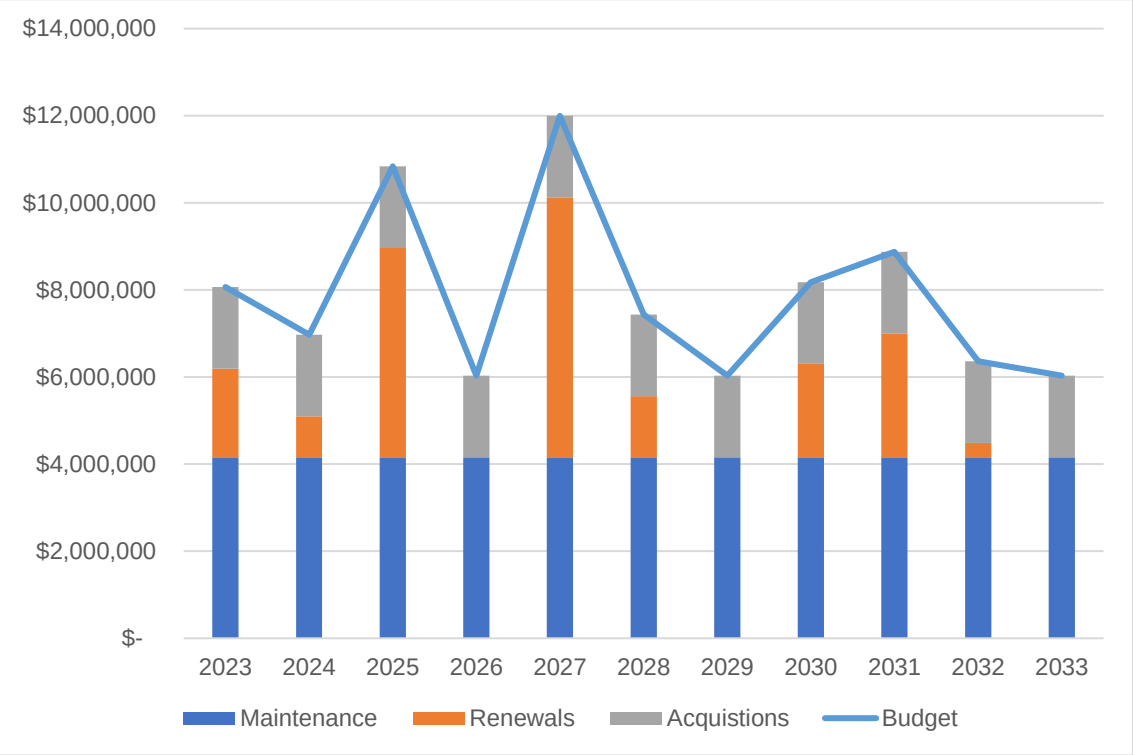

Figure 2 Life cycle expenditure forecast - water supply assets

Plan Improvement and Monitoring

This AMP has identified several specific improvement initiatives which are consolidated with those of other asset classes in Council's Asset Management Improvement Plan, which is part of its Asset Management Strategy document. Key among these are:

- Developing and implementing an asset criticality assessment framework as a basis to identify and prioritise critical assets, and develop appropriate strategies to mitigate risks
- Improving and formalising condition assessment processes, data and reporting
- Reviewing Levels of Service with community input, and the development of appropriate measures and targets
- Further investigating climate related impacts on demand, and risks
- Improving financial processes, tools and data to support more detailed budgeting.

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1. Introduction

1.1 Background

Gwydir Shire Council (Council) is required under the *Local Government Act 1993* (the Act) and the associated Integrated Planning and Reporting framework to develop and implement a series of plans, including Asset Management Plans (AMPs) for all critical assets owned or managed by Council.

Council views this framework as a foundation for the improvement of its asset management practices, and this AMP as a means to guide the responsible management of Council's transport assets and services, aligned with contemporary best practice and standards.

1.2 Context

The goal for local governments in managing infrastructure assets is to meet customer-defined Levels of Service (LoS) in the most cost-effective manner for present and future stakeholders. The key elements of infrastructure asset management are:

- Providing defined LoS and monitoring performance in accordance with stakeholder expectations
- Undertaking works to maintain compliance with LoS
- Managing the impact of growth through demand management and infrastructure investment
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined LoS
- Identifying, assessing, and appropriately controlling risks
- Linking to and informing the Long-Term Financial Plan (LTFP) which identifies required forecast expenditures and how they will be allocated.

This AMP supports achievement of that goal by documenting how Council will manage its assets to sustainably deliver required transport services, identify and manage associated risks, and responsibly plan and deploy Council funds and resources. It reflects and incorporates the latest available information and asset data as at June 2023.

The AMP has been developed with reference to Council's Asset Management Policy and Asset Management Strategy and should be read in conjunction with those documents. It also provides alignment between the Long-Term Financial Plan, Community Engagement Strategy, Community Strategic Plan, Operational and Delivery Plans.

The AMP is aligned to guidance provided in the ISO 55000 suite of Asset Management standards, the Institute of Public Works Engineering Australasia (IPWEA) NAMS+ toolkit and International Infrastructure Management Manual (IIMM), while meeting the requirements of the NSW Government's Integrated Planning and Reporting framework.

1.3 Scope

This AMP covers the key transport infrastructure assets owned or managed by Council that underpin the delivery of critical services to the community. These assets include roads, culverts, bridges, footpaths, kerb & gutters, bulk earthworks and causeways. A more detailed summary of the transport asset portfolio is provided in Section 2.

This AMP covers a 10-year timeframe to 2033 and will be reviewed annually in line with Integrated Planning and Reporting Framework requirements.

1.4 Strategic Framework

1.4.1 Integrated Planning & Reporting

The NSW Government's Integrated Planning and Reporting framework (IP&R) mandates that all NSW Councils develop and implement an integrated hierarchy of planning documents, summarised briefly below[1].

- **Community Strategic Plan,** which outlines the goals and objectives of the community as defined through the Community Engagement Strategy.
- **Community Engagement Strategy**, which demonstrates how Council plans and undertakes community engagement activities.
- **Resourcing Strategy,** which details how the delivery of programs resulting from the Community Strategic Plan are managed and resourced. It includes:
    - Long Term Financial Plan
    - Workforce Management Plan
    - Asset Management Planning.

1.4.2 Asset Management Planning

The IP&R's Asset Management Planning requirements are met by, and documented in, Council's Asset Management Policy, Asset Management Strategy and asset class-specific AMPs. These are, in turn, supported by Council's asset management processes, people, information and systems. The documents that together make up Council's asset management framework are summarised in Table 2.

Table 2 Key Council asset management documents

Document Name	Key Document Contents
Asset Management Policy	Documents and confirms Council's commitment to asset management, and the principles and approach to be adopted in its planning and implementation.
Asset Management Strategy	The Asset Management Strategy outlines: • The Asset Management Objectives (AMOs). • Strategies to meet the AMOs. • How the AMP is implemented. • How Council will develop, implement, and continually improve its asset management capability. • Relevant background information on matters including governance, roles and responsibilities, supporting information systems and process that are applicable to all AMPs.
Asset Management Plan (this document)	The AMP outlines the approach to delivering asset management objectives for the relevant asset class. The document details the asset class-specific risks and strategies to support and align with Council-wide asset management policies and strategies, demand factors, levels of service, risk management practices, financial

[1] Further details of the IP&R are contained in Council's separate Asset Management Strategy document

Document Name	Key Document Contents
	resources required, and improvement initiatives.
Long Term Financial Plan	Provides a 10-year budget forecast to demonstrate financial sustainability and how the Operational Plan and Delivery Programs are resourced.
Delivery Plan	Describes Council's commitment to deliver over a 4-year period to meet the strategic goals and objectives. Describes what can be delivered with the available resources.
Operational Plan	Identifies annual projects and activities to deliver against the Delivery Plan.

1.5 Governance, roles and responsibilities

The successful delivery of asset management relies on a defined governance model and the relationships between executive management, corporate services, operational services and delivery services.

Council's organisational and governance structure, and the key asset management responsibilities, are described in Council's Asset Management Strategy.

In the context of Transport assets, the key asset management roles are performed by the following Council positions and/or business units.

Broad Asset Management Role	Responsible Council Party
Asset Custodian	Director of Engineering Services
Asset Manager	Director of Engineering Services
Asset Maintainer	Engineering Asset Coordinator & LEMO, with delivery via specialist contractors and RMS

2. Asset Portfolio

This section provides an overview of the assets covered by this AMP.

2.1 Asset Types and Value

The composition of the transport asset base is summarised in Table 3 below. In total, the asset portfolio has a current value of $413,281,599.

Table 3 Asset quantity and value

Asset Type	Quantity	Value
Bridges	298	$52,237,644
Footpaths	114	$3,378,803
Kerb & Guttering	225	$2,016,868
Sealed	4,619	$246,903,065
Unsealed	3,057	$102,131,037
Urban Storm Water Drainage	211	$6,614,181
Total	8524	$ 413,281,598

According to the 2023 OLG General Data Return, the transport network of Gwydir comprises:

- 146.69 km Sealed State Roads
- 255.49 km Sealed Regional Roads
- 326.29 km Sealed Shire Roads
- 1676.17 km Unsealed Shire Roads
- 63.29 km Urban Roads

Therefore, Gwydir Shire Council maintains a road network totalling 2,321.24 km.

2.2 Asset Condition and Performance

2.2.1 Condition Assessment Process

The physical condition of assets provides an important indicator of their ability to perform their required function, their likelihood of failure, and their expected operations and maintenance costs, and is consequently a key input to asset management planning.

Condition assessments and capturing of condition data are undertaken regularly as part of routine maintenance or as part of a program of rolling annual inspections which covers all roads assets yearly, or more frequently if budget and resourcing allows. Council intends to continue to improve its collection of asset condition data and to document its approach in future revisions of this AMP.

Improvement Action 1:

Update future versions of this section of the AMP to include details of condition assessment frequencies, methodologies, and reporting.

In line with industry standards and NSW Office of Local Government guidance, Council uses a five-point scale to assess and rate asset condition, as summarised in Table 4.

Table 4 Condition ratings and descriptions

Rating	Condition	Description
1	**Excellent / Very Good**	New or as new condition. Only planned cyclic inspection and routine maintenance required.
2	**Good**	Good condition with minor defects. Minor routine maintenance along with planned cyclic inspection and maintenance.
3	**Satisfactory / Average**	Average/fair condition with some significant defects requiring regular maintenance on top of planned cyclic inspections and maintenance.
4	**Poor**	Poor condition with asset requiring significant renewal/ rehabilitation, or higher levels of inspection and substantial maintenance to keep the asset serviceable.
5	**Very Poor**	Very poor condition. Asset physically unsound and/or beyond rehabilitation. Renewal required.

2.2.2 Asset Condition Profile

A breakdown of the transport asset portfolio's condition by value, based on the currently available asset register data, is shown in Figure 3.

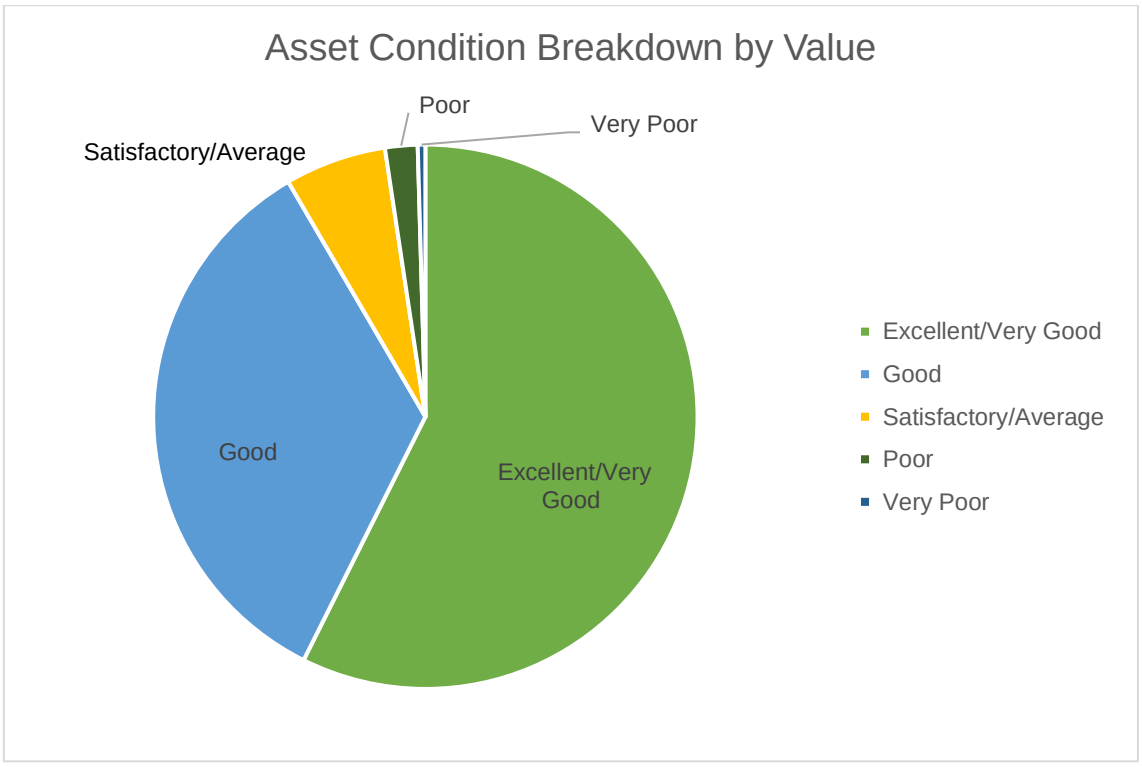

Figure 3 Asset condition breakdown by value

The vast majority (92%) of assets by value can be seen as being in 'Excellent', 'Very Good' or 'Good' condition, indicating that current management and maintenance regimes for transport assets are appropriate, and that major renewal investment is unlikely to be required in the medium term.

Of those assets in poorer levels of condition, the following have been identified for investigation of appropriate rectification works and investment.

Transport Assets Requiring Major Reconstruction

For the purposes of this AMP, an asset's condition was determined by taking the average of subcomponents with condition ratings in the GSC asset data spreadsheet. Of the 8524 assets within the scope of works, 357 were determined to require major reconstruction (245) or unserviceable (112).

Unserviceable Assets

Assets shown in the asset register to be rated as 'Very Poor' or unserviceable are shown in Table 5.

Table 5 Assets rated Very Poor

Transport Asset	Subcomponent
Adams Scrub Road Segment - 030 - Pavement	Unsealed Local Roads Structure
Adams Scrub Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Alma Lane Segment - 010 - Pavement	Unsealed Local Roads Structure

Alma Lane Segment - 020 - Pavement	Unsealed Local Roads Structure
Alma Lane Segment - 030 - Pavement	Unsealed Local Roads Structure
Avon Downs Road - Segment - 010	Culverts on Unsealed Roads
Baroma Road - Segment - 020	Culverts on Unsealed Roads
Blue Nobby Road - Segment - 060	Culverts on Unsealed Roads
Bora Link Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Boundary Creek Road - Segment - 010	Culverts on Sealed Local Roads
Bundawarra Road Segment - 020 - Pavement	Unsealed Local Roads Structure
Bundawarra Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Bushes Access Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Carlington Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Clifton Hill Road Segment - 010 - Pavement	Unsealed Local Roads Structure
County Boundary Road - Segment - 010	Culverts on Unsealed Roads
County Boundary Road - Segment - 020	Culverts on Unsealed Roads
County Boundary Road - Segment - 020	Culverts on Unsealed Roads
County Boundary Road - Segment - 050	Culverts on Unsealed Roads
Cracknells Road - Segment - 030	Culverts on Unsealed Roads
Cracknells Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Cranky Rock Road - Segment 040 - Seal	Sealed Local Roads Surface
Crooble Road - Segment - 060	Culverts on Unsealed Roads
Crooble Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Crooble Road Segment - 050 - Pavement	Unsealed Local Roads Structure
Dunollie Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Elcombe Road - Segment - 140	Culverts on Sealed Local Roads
Elcombe Road - Segment - 280	Culverts on Sealed Local Roads
Elcombe Road - Segment - 280	Culverts on Sealed Local Roads
Eulourie Road - Segment - 010	Culverts on Unsealed Roads
Fairford Road Segment - 080 - Pavement	Unsealed Local Roads Structure
Flemings Road - Segment - 020	Culverts on Unsealed Roads

Floods Tank Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Gineroi Road - Segment - 040	Culverts on Unsealed Roads
Gineroi Road - Segment - 040	Culverts on Unsealed Roads
Glen Erin Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Glenesk Road - Segment - 010	Culverts on Unsealed Roads
Glenesk Road - Segment - 040	Culverts on Unsealed Roads
Goat Road - Segment - 030	Culverts on Unsealed Roads
Goat Road - Segment - 030	Culverts on Unsealed Roads
Gournama Road - Segment - 030	Culverts on Unsealed Roads
Gragin Road - Segment - 100	Culverts on Sealed Local Roads
Gragin Road - Segment - 110	Culverts on Sealed Local Roads
Gragin Road - Segment - 110	Culverts on Sealed Local Roads
Gragin Road - Segment - 130	Culverts on Unsealed Roads
Gragin Road - Segment - 140	Culverts on Unsealed Roads
Gragin Road - Segment - 150	Culverts on Unsealed Roads
Halls Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Hybernia Road - Segment - 050	Culverts on Unsealed Roads
Hybernia Road Segment - 030 - Pavement	Unsealed Local Roads Structure
Hybernia Road Segment - 050 - Pavement	Unsealed Local Roads Structure
I.B. Road - Segment - 080	Culverts on Unsealed Roads
Kiora Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Kirkton Road Segment - 020 - Pavement	Unsealed Local Roads Structure
Kirkton Road Segment - 030 - Pavement	Unsealed Local Roads Structure
Left : Brainard Street - Martyn Street	Kerb & Guttering
Left : Hill Street Intersection - Riddell Street	Kerb & Guttering
Left : Start of Kerb Left - Start of Causeway	Kerb & Guttering
Lockharts Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Michells Lane (aka Ironbark Road) - Segment - 060	Culverts on Sealed Local Roads
Minilya Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Minilya Road Segment - 020 - Pavement	Unsealed Local Roads Structure

Mistake Road - Segment - 010	Culverts on Unsealed Roads
Mistake Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Myall Downs Road - Segment - 010	Culverts on Unsealed Roads
Myall Downs Road - Segment - 010	Culverts on Unsealed Roads
Myall Park Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Nooroo Road - Segment - 020	Culverts on Unsealed Roads
North Star Rd - RR7705 - Segment - 250	Culverts on Sealed Regional Roads
North Star Rd - RR7705 Segment - 130 (Causeway) - Base	Sealed Regional Roads Structure
North Star Rd - RR7705 Segment - 130 (Causeway) - Sub Base	Sealed Regional Roads Structure
Noumea Road - Segment - 010	Culverts on Unsealed Roads
Nunga Road Segment - 020 - Pavement	Unsealed Local Roads Structure
Nunga Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Nunga Road Segment - 060 - Pavement	Unsealed Local Roads Structure
Nunga Road Segment - 070 - Pavement	Unsealed Local Roads Structure
Oakey Creek Road - Segment - 010	Culverts on Unsealed Roads
Peach Tree Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Peates Road - Segment - 010	Culverts on Unsealed Roads
Peates Road - Segment - 020	Culverts on Unsealed Roads
Peates Road - Segment - 050	Culverts on Unsealed Roads
Peates Road - Segment - 090	Culverts on Unsealed Roads
Peates Road Segment - 090 - Pavement	Unsealed Local Roads Structure
Plevna Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Plevna Road Segment - 020 - Pavement	Unsealed Local Roads Structure
Ponderosa Access Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Right : Hill Street Intersection - Riddell Street	Kerb & Guttering
Right : Junction Street to Link Street	Kerb & Guttering
Right : Maitland Street to End Kerb Right	Kerb & Guttering
Right : Market Street - Start Kerb Left	Footpaths
Right : Martyn Street - Heber Street	Kerb & Guttering
Right : Stewart Avenue - Seal Change	Kerb & Guttering

Rocky Springs Road Segment - 040 - Pavement	Unsealed Local Roads Structure
Ross Road - Segment - 010	Culverts on Unsealed Roads
Strathallan Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Strathallan Road Segment - 020 - Pavement	Unsealed Local Roads Structure
Swifts Road Segment - 010 - Pavement	Unsealed Local Roads Structure
The Glen Road Segment - 010 - Pavement	Unsealed Local Roads Structure
The Ranch Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Thornleigh Road - Segment 070 - Pavement	Unsealed Local Roads Structure
Tolga Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Tumba Road - Segment - 010	Culverts on Unsealed Roads
Tumba Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Tumba Road Segment - 020 - Pavement	Unsealed Local Roads Structure
Tumba Road Segment - 030 - Pavement	Unsealed Local Roads Structure
Twin Creek Road Segment - 010 - Pavement	Unsealed Local Roads Structure
Upper Bingara Road - Segment - 070	Culverts on Unsealed Roads
Warialda Rd - RR63 - Segment - 240	Culverts on Sealed Regional Roads
Warialda Rd - RR63 - Segment - 350	Culverts on Sealed Regional Roads
Warialda Rd - RR63 - Segment - 370	Culverts on Sealed Regional Roads
Wearnes Rd - Segment - 040	Culverts on Unsealed Roads
Yammacoona Estate Road Segment - 020 - Pavement	Unsealed Local Roads Structure

3. Asset Demand

Asset demand is driven by a range of factors including levels of service, population growth, climate change, technology, legislation requirements and economic factors. The following section outlines the key demand drivers relevant to Council's transport asset portfolio and provides analysis to summarise their potential impacts on the asset classes.

3.1 Demand Drivers

3.1.1 Population Growth and Demographics

Population growth is one of the most direct drivers of transport asset demand. Data from the latest Australian Bureau of Statistics Census of Population and Housing for the Gwydir Shire LGA shows a gradual long-term decline in population between 1996 and 2021 of approximately 17%. Looking forward, the online NSW Population Projections Explorer indicates the population of Gwydir Shire will gradually rise to 5,576 by 2041.

Changes in the population of Gwydir Shire since 1996 is shown below.

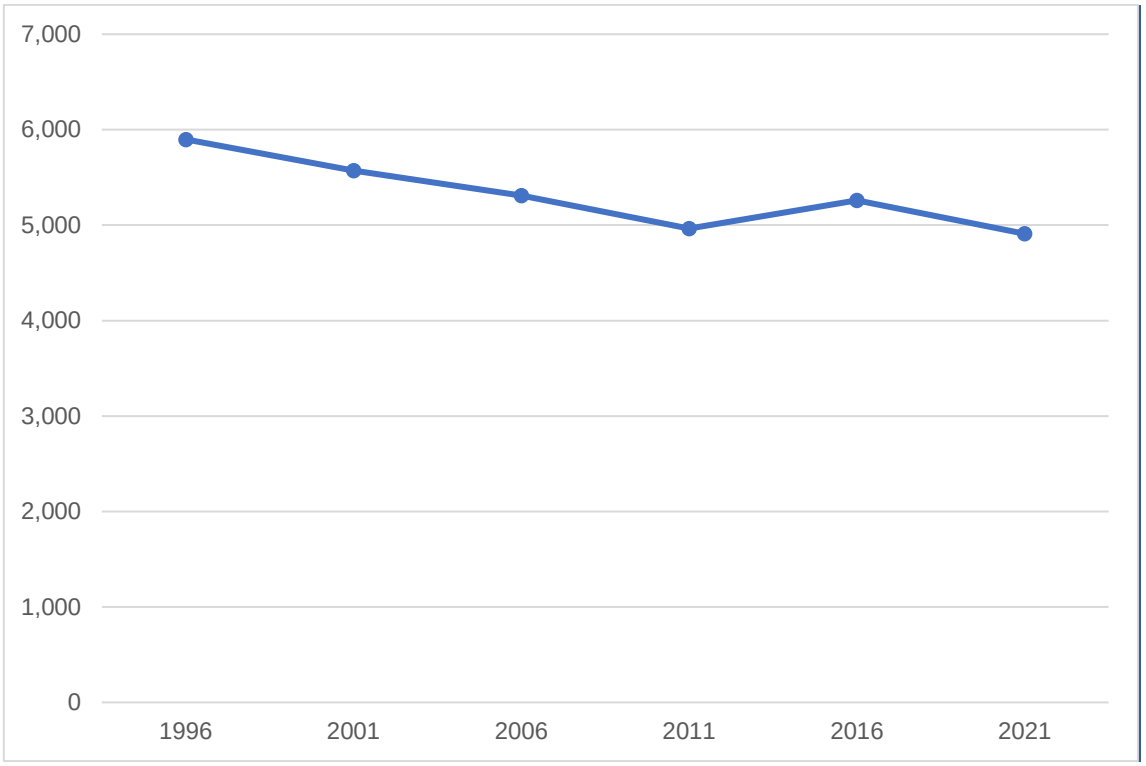

Figure 4 Gwydir LGA population

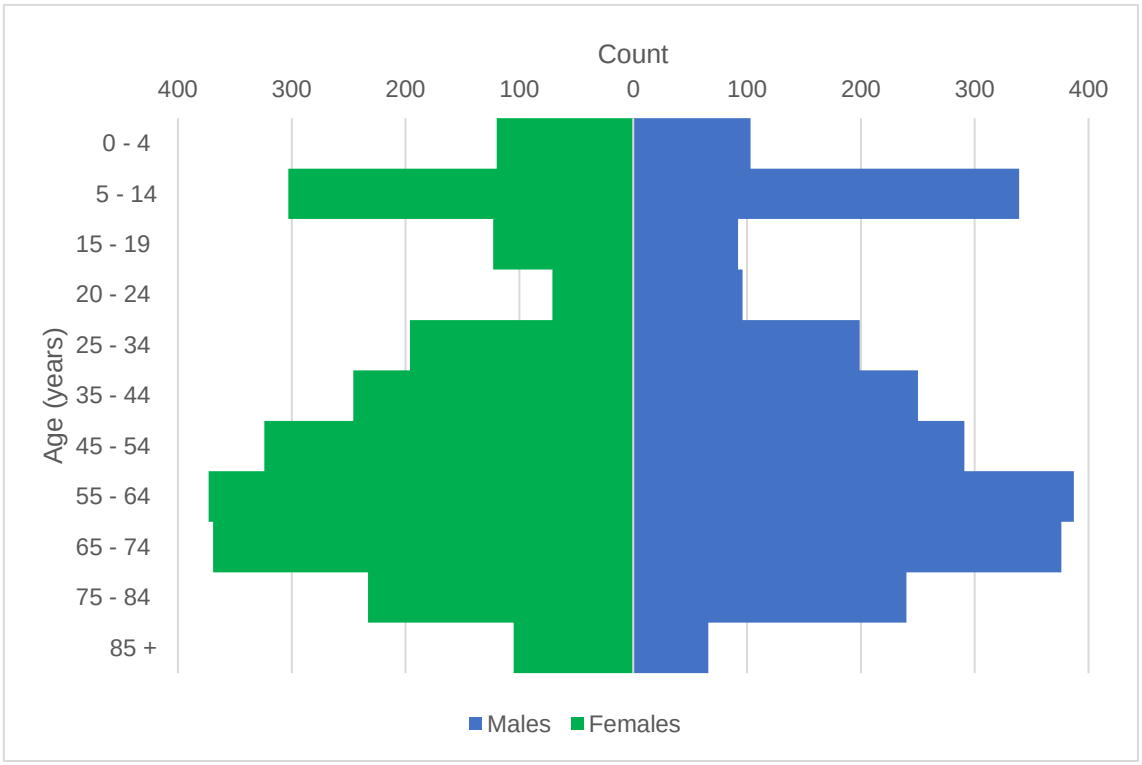

Figure 5 Gwydir LGA demographic distribution (2021)

The distribution of ages indicates a greater proportion of people over the age of 45, with a median age of 50 years. As with many regional areas, Gwydir Shire is also experiencing an ageing population trend, and slight increase in dwelling occupancy rate of 0.0 to 0.5 % per annum. When coupled with the relatively low population growth rates, these demographic factors suggest minimal levels of growth-related demand are likely to occur across the 10-year AMP planning period.

3.1.2 Climate Change

The results of climate change can have a significant impact on the assets being managed and the services that they provide. In the context of the asset management planning process, climate change can be considered as both a future demand driver and a risk.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which Council responds to and manages those impacts. As an increasingly important input to its asset management planning, Council should consider both how to manage existing assets given potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

A NSW government climate report[2] projects anticipated changes to temperature, frequency of hot days and cold nights, rainfall and fire conditions for the medium and long terms for the New England Northwest region, which includes, but is not specific to, Gwydir Shire. The projections nonetheless provide a good starting point for undertaking a hazard risk assessment and identifying potential management options.

[2] NSW Government Office of Environment & Heritage, New England North West Climate change snapshot, November 2014.

Table 6 Climate change snapshot summary

Effect	Trend	Near Future (2020-2039) Projection	Far Future (2060-2079) Projection
Temperature	Increase	Maximum temperatures to increase by 0.7 °C. Minimum temperatures to increase by 0.7 °C.	Maximum temperatures to increase by 2.2 °C. Minimum temperatures to increase by 2.3 °C
Number of hot days (maximum temperature above 35 °C)	Increase	7 additional hot days per annum	24 additional hot days per annum
Number of cold nights (minimum temperature below 2 °C)	Decrease	9 fewer cold nights per annum	26 fewer cold nights per annum
Rainfall	Variable	Changes in annual rainfall ranging from –9 % to +13 %	Changes in annual rainfall ranging from –8 % to +24 %
Forest Fire Danger Index (FFDI)	Increase	Increase in number of days with a FFDI above 50 (Severe). Increase in average FFDI.	Further increase in number of days with a FFDI above 50 (Severe). Additional increase in average FFDI.

Climate change has multiple potential impacts on the management of Council's roads assets. Transport assets are particularly vulnerable to rainfall patterns and floods, which have occurred with increasing frequency in recent years in the region, and which have led to substantial additional maintenance and repair costs, or early replacement due to damage. Some examples of these impacts and potential responses are shown in Table 7.

Table 7 Impact of climate change on assets

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Example Management Actions
Storm intensity	More extreme weather events	Localised flooding damage. Loss of access or serviceability. Exceedance of drainage capacity and associated damage. Increased cost of vegetation management	Improved drainage. Targeted sealing of unsealed roads. Drainage upgrades and repairs
Drought	An increase in drought conditions (hotter and drier) for extended periods	Insufficient soil moisture for grading and maintenance. Dust problems.	Expensive tankering in of water
Fire	Longer, more severe fire seasons	Destruction of roadside infrastructure. Loss of service.	Manage potential vegetation fuel sources with hazard reduction burning ahead of fire season. Invest in fire resistant building materials. Appropriate site selection for assets and infrastructure.

Council recognises the importance of understanding climate implications and that these continue to be monitored and addressed in future versions of this AMP.

Improvement Action 2:

Undertake a climate change impact review and risk assessment to determine what mitigation measures and management strategies are appropriate for the asset class.

Update this Section of the AMP to include key findings and any mitigation measures.

3.2 Demand Management

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

Non-asset solutions focus on providing the required service without the need for Council to own the assets, and management actions including reducing demand for the service, or reducing the level of service (eg. by allowing some assets to deteriorate beyond current service levels).

There are several forms of non-asset solutions that have proven to be effective for transport demand management. These include:

- The population of residents in the Shire is observed to be between 5,000 and 6,000 and appears to be on a downward trend, although in the long term will be steady.
- Consider the requirements when looking at an aging population.
- New technologies including energy efficiency and resilient construction materials can be considered when capital upgrades or new roads are being planned for.

These points should be considered when planning for the management of portfolio assets and how each could affect demand for transport assets.

4. Levels of Service

Council has recently conducted a wholesale change to its maintenance practices on both sealed and unsealed roads. These changes include the addition of rollers and watercarts with maintenance graders and the establishment of a dedicated sealed road heavy patching crew. This will result in an overall increase in delivered levels of service, which when incorporated with ongoing, widespread community consultation will inform levels of service congruent with Council's increased capacity and community desires

Levels of Service (LoS) are used to link the business outcomes of the asset owner with the assets used to provide the services. LoS are required to:

- Describe the service outputs the organisation intends to deliver to customers via the asset portfolio
- Relate to service attributes such as quality, reliability, timeliness, accessibility, and cost
- Be measurable and recordable
- Providing a basis for the setting of 'trigger points' for reviews of maintenance strategies, renewals and asset replacements, upgrades and provision on new assets.

4.1 Community Engagement

Key to the development of LoS is close and regular engagement with the community. Council's Community Engagement Strategy 2022-2026 lists the various strategies Council employs to inform the community and seek feedback. These include:

- Digital surveys and suggestion box
- Social media channels
- Staff newsletters
- Advertising
- Deliberative panels
- Rate notice flyers
- TV and radio
- QR codes
- Community meetings
- Newspaper articles
- E-newsletters
- Notice boards
- Community newsletter and mailouts
- Mayoral column
- Youtube posts
- Face to face and one on one discussions

4.2 Levels of Service and Measures

LoS are clear statements of the outcomes expected to ensure the relevant goals and outcomes for the asset portfolio are being met. They should align with Council's asset management objectives and strategies, and thereby provide a clear line of sight between Council's goals and its delivery of service outcomes.

4.2.1 Customer Levels of Service

Customer (or Community) LoS are statements or measures that describe the service outcomes as they are perceived by, and in terms relevant to and valued by, the customer receiving the services. They are often expressed in terms of quality, function, safety, capacity, etc. These are backed up by one or more Technical Levels of Service, and a practical means of measurement of achievement. Technical Levels of Service

4.2.2 Technical Levels of Service

Technical LoS state how a particular activity or service area is measured in a practical sense. Each technical performance measure is linked to a customer performance measure, in many cases providing a more detailed version or measure where the future target is a planned improvement from the current.

Table 8 provides some examples of LoS and their outcomes from an asset management perspective.

Table 8 Levels of service definitions

Performance Measure	Definition
Customer Levels of Service	
Quality	The asset is in a reasonable operating condition and meets its intended purpose.
Function	The asset meets operational / user requirements, fulfils its purpose and is compliant to all legislative/regulatory criteria/requirements.
Safety	The asset is safe to operate / use and maintain.
Technical Levels of Service	
Operations	The asset is managed in a manner that ensures that it meets the operational requirements and, delivers its intended purpose at the highest standard as practical.
Maintenance / Renewal / Upgrade	The asset is managed throughout its lifecycle at a standard to ensure the asset reliably meets its design performance requirements.
Cost Effectiveness (Budget)	The asset is managed to meet service levels in a cost-effective effective manner throughout its lifecycle.

Table 9 provides examples of the Transport LoS that are currently adopted by Council based on community consultation and engagement undertaken in 2015.

Table 9 Desired transport levels of service

Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service		Optimal Level of Service	
Community Levels of Service						
Quality	Roads are smooth	Customer service requests relating to roughness	TBA		< 8 complaints per month	
Function	Access is available at all times	Customer service requests relating to non-access	TBA		< 2 complaints per month	
Safety	Roads are safe for responsible drivers who drive to the road conditions	Total Number of accidents Number of injury accidents	32 per year 22 per year		<30 per year <20 per year	
Technical Levels of Service						
Condition	Servicing and management	Condition and defects inspections at nominated intervals based on asset class	200 (2009) 160		Defects are reducing	
	Undertake resealing program	Resealing frequency	Regional Arterial Collector	18 years 20 years 24 years	Regional Arterial Collector	13 years 15 years 18 years
	Carry out routine patching	Patching frequency	Potholes not to exceed 200mm diameter		Potholes not to exceed 150mm diameter	
Accessibility	Provide all weather access to Regional, Local Collector and Local Access Road	Duration and frequency of road being impassable	Less than 1 day when road is impassable per year at no more than 2 locations		Less than 1/2 day when road is impassable per year at no more than 2 locations	
Maintenance	Grading of unsealed roads	Average Maintenance Grading Frequency	Arterial Collector Local Minor	2 per year 2 per year 1 per year 0.5 per year	Arterial Collector Local Minor	2 per year 2 per year 1 per year 0.5 per year
		Cost effectiveness ($/km/yr)	Arterial Collector Local Minor	$657/km $472/km $482/km $384/km	Arterial Collector Local Minor	$657/km $472/km $482/km $384/km

Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service		Optimal Level of Service	
		Unsealed Roads Maintenance Budget		$515/km		$515/km
	Repair sealed road hazards and defects	Cost effectiveness ($/km/yr)	Arterial Collector Local Minor	$1805/km $1142/km $364/km $240/km	Arterial Collector Local Minor	$1805/km $1142/km $364/km $240/km
		Sealed Roads Maintenance Budget		$2035/km		$2035/km
		Maintenance Budget	Total $1,355,165 per year		Total $1,355,165 per year	
Safety	Provide Clear Safety Signage	Annual Defect and Condition Survey	Less than 10% signs with defects		Less than 10% signs with defects	
Renewal	Resheeting of Gravel Shire Roads	% age of length resheeted per year	Aerial Collector Local Minor	19.9% per year 5.3% per year 8.2% per year 6.3% per year	Aerial Collector Local Minor	12% per year 10% per year 8% per year 6% per year
		Resheeting Budget	Aerial Collector Local Minor	$472,203/year $437,839/year $391,559/year $132,736/year	Aerial Collector Local Minor	$820,000/year $280,000/year $525,000/year $264,000/year
	Resealing of Sealed Shire Roads	% age of length resheeted per year	Aerial Collector Local Minor Urban	6.09% per year 6.03% per year 0% per year 0% per year 0% per year	Aerial Collector Local Minor Urban	7% per year 6% per year 5% per year 5% per year 5% per year
		Resheeting Budget	Aerial Collector Local Minor Urban	$258,723/year $64,002/year $122,583/year $0/year $163.332/year	Aerial Collector Local Minor Urban	$339,568/year $55,264/year $102,400/year $25,248/year $0/year
	Sealed Shire Road Renewal	Sealed Road Renewal Budget	Aerial Collector Local Minor	$1,521,850/year $0/year $0/year $0/year	Aerial Collector Local Minor	$997,481/year $162.338/year $300,800/year $74,660/year

Performance Measure	Level of Service Objective	Performance Measure Process	Current Level of Service		Optimal Level of Service	
		Renewal Budget	Total	$2,043,000	Total	$2,475,000
Upgrade/New	Upgrading of Road Network	% of properties without all-weather access	% (2017)		All properties have all weather access within 5 years	
		Upgrade/New Budget	**$600,000**		**More than $350,000/yr over 5 years**	

Council recognises that community service and value expectations change over time, and that it is now opportune to re-engage with the Gwydir Shire community to review and, if necessary, revise roads LoS.

Improvement Action 3:

Review existing and potential performance measures, Level of Service metrics, and targets with stakeholders, and publish and adopt these as the basis for future asset management planning decision making. Update this section of future versions of this AMP accordingly.

4.3 Legislative Requirements

There are many legislative requirements applicable to the management of roads assets, examples of which are shown in Table 10.

Table 10 Legislative requirements

Legislation	Requirement
Local Government Act 1993	Sets out role, purpose, responsibilities and powers of local governments including the preparation of a long term financial plan supported by asset management plans for sustainable service delivery.
NSW Roads Act 1993	Defines the “Road Authority” for all classifications of roads in NSW and defines the roles and responsibilities of the “Road Authority”
NSW Road Transport Regulation 2021	Sets out the rules to be followed and responsibilities of users of the road system and how the rules are enforced
NSW Workplace, Health and Safety Act 2011	Sets out the roles and responsibilities to secure the health, safety ad welfare of persons at work
Protection of the Environment Operations Act (1997)	Requirements to provide protection of the environment
Environment Protection and Biodiversity Conservation Act 1999	Provides for the protection of the environment, established the Department of the Environment and defines its functions and powers
Environmental Planning and Assessment Act 1979	Sets out guidelines for land use planning and promotes sharing of responsibilities between various levels of government in the state
Australia Road Rules	The Australian Roads Rules are incorporated into State Traffic Regulations under the Road Traffic Act
Australian Standards	Provides guidance for transport asset managers in use of transport services such as AS 1742; Manual of Uniform Traffic Control Devices
Heavy Vehicle National Law Act 2013 No 42a	Establishes a national scheme for facilitating and regulating the use of heavy vehicles on roads in a way that- (a) promotes public safety; and (b) manages the impact of heavy vehicles on the environment, road infrastructure and public amenity; and (c) promotes industry productivity and efficiency in the road transport of goods and passengers by heavy vehicles; and (d) encourages and promotes productive, efficient, innovative and safe business practices.

There are also often requirements under Australian Standards regarding the design, construction/installation, operation, maintenance, and disposal of assets that are not legislative (referenced in an Act or Regulation) but should be considered as part of “best practice” asset management. Council will continue to monitor applicable standards and reflect any changes in future versions of the AMP.

These lists are not exhaustive. Additional Standards (such as the ISO 55000 suite), guidelines (such as the International Infrastructure Management Manual or IIMM) should also be considered, and other regulation and legislative requirements may exist (or existing documents may change) which are related to Transport. This Section will be reviewed and updated as required.

5. Risk Management

5.1 Risk Assessment Process

Risk Management is defined in ISO 31000:2018 Risk Management – Principles and Guidelines as: "coordinated activities to direct and control with regard to risk".

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure.

Under Councils' risk management process, risks are rated as Very High, High, Medium and Low. Examples of critical risks, being those assessed as 'Very High' (requiring immediate corrective action) and 'High' (requiring prioritised corrective action identified in the Infrastructure Risk Management Plan together with the estimated residual risk after the selected treatment plan is implemented), are summarised in Table 11. These risks, when apparent, are reported to management and Council.

Table 11 Risk and management for transport assets

Service or Asset at Risk	What can Happen	Risk Rating	Risk Treatment Plan
Unsealed Road Network	Reduction in number of roads with all-weather access	H	• Develop road hierarchy and match service levels to available funds
Sealed Road Network	Increase in pavement failures and road roughness due to wearing of sealed surfaces	H	• Increase resealing frequency from 25 years to 15 (collector) and 15-25 (local) years and develop pavement rehabilitation/renewal plan
Causeways	Road closures when storms cause water to be too deep to traverse	H	• Review return interval of causeways and frequency of road closures to formulate upgrade program
Kerb and Gutter	Kerb and Guttering failing to contain stormwater, effecting adjacent properties	H	• Identify ineffective kerb & guttering and replace

5.2 Critical Assets

Contemporary best practice in relation to asset risk management is to use a process of asset ***criticality assessment*** to rate and identify critical assets as the basis for development of priorities and strategies to minimise asset risk.

According to ISO 55000:2014, a critical asset is "*an asset that has potential to significantly impact on the achievement of the organisation's objectives".*

Assets can be safety-critical, environment-critical or performance-critical and can relate to legal, regulatory or statutory requirements.

Council does not currently have a formal asset criticality framework, and recognises that this would improve upon its current, less formal process, help it to conform with leading practice, and more fully meet the requirements of the IP&R. Accordingly, it is proposed that this be pursued as a priority item in the Asset Management Improvement Plan.

Improvement Action 4:

Formulate and implement an asset criticality framework and apply to all assets, as the basis for development and prioritisation strategies for risk mitigation. Update this section of future versions of this AMP accordingly.

5.3 Climate Risk and Resilience

The results of climate change can have a significant impact on the assets being managed and the services that they provide. In the context of the Asset Management Planning process climate change can be considered as both a potential influencer of demand, and a risk. Potential climate change impacts are discussed further in Section 3.1.2.

How climate change will impact on assets can vary significantly depending on the location and the type of services provided, as will the way in which GSC responds to and manages those impacts. As a minimum GSC will consider both how to manage existing assets given potential climate change impacts, and then also how to create resilience to climate change in any new works or acquisitions.

6. Asset Lifecycle Management

Reliably and cost-effectively delivering value from assets across their full life cycle is a fundamental principle of asset management. This section outlines the core lifecycle activities employed by Council in managing its assets.

6.1 Lifecycle Management Overview

Lifecycle management brings together and 'joins up' the decision making associated with each stage of an asset's life, including acquisition, maintenance and operation, and eventual refurbishment, renewal or disposal.

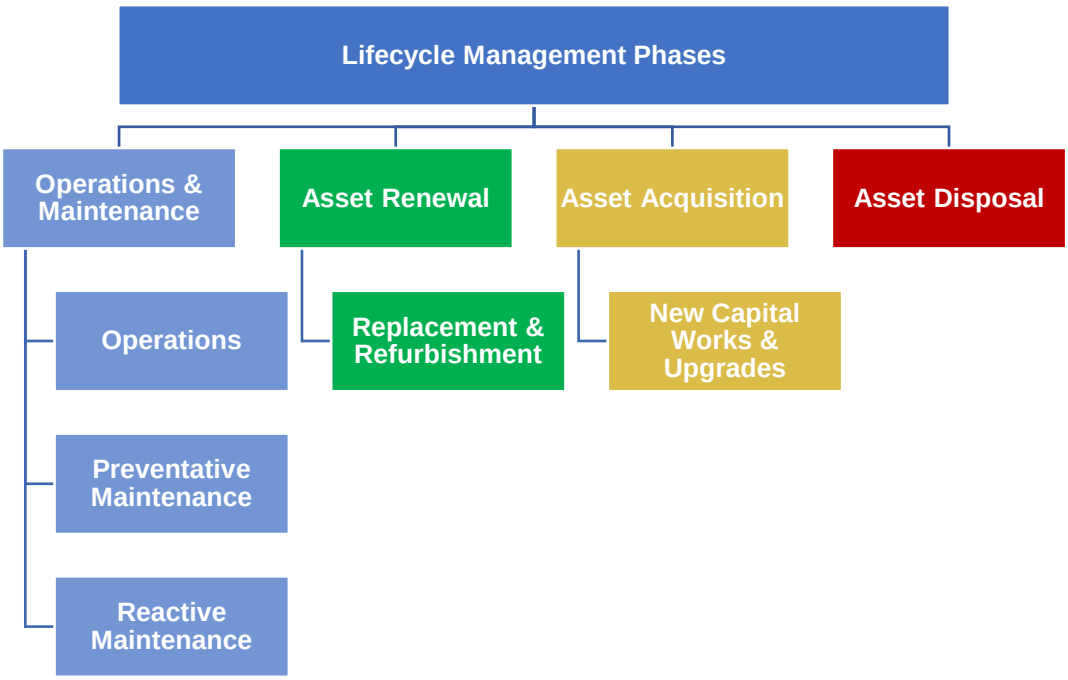

Figure 6 Lifecycle management phases

6.2 Operations and Maintenance

Operations and maintenance strategies determine and guide how the asset will be operated and maintained both on a day-to-day and longer-term basis.

Operations includes regular activities to provide services. Examples of typical operational activities include the various aspects of water treatment, and monitoring and managing networks.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Council's maintenance tasks typically fall under three categories:

- Reactive maintenance: correction of malfunctions and failures on an as-required basis.
- Preventative maintenance: regular and predictable maintenance activities which can be scheduled, such as inspections, application of protective coatings, lubrication, replacement of defective or worn components, etc.
- Mandatory maintenance: activities that are required to ensure legislative compliance such as test and tagging fire equipment or safety equipment testing.

Council's maintenance strategies, including the mix of the above forms of maintenance and the thresholds and frequencies at which interventions are undertaken, are currently risk-based, but reliant on operator experience and generally only informally documented and communicated. The proposed adoption of an asset criticality framework (discussed in Section 5.2) will provide a more transparent and accurate basis for the selection of maintenance and management strategies, and thereby improved management of risk.

Historical costs associated with operations and maintenance are discussed below.

6.2.1 Operations

Council captures and reports operations expenses at a detailed level, however changes to the way that overheads are treated and that costs are categorised means that historical operating costs for transport

assets are not readily able to be extracted and used for forward projections at this time. Historical and projected operations costs will be included in future updates of this AMP.

Improvement Action 5:

Revise classification and treatment of transport operation costs to provide a more accurate basis for forecasting future expenditure. Update this section of future versions of this AMP accordingly.

6.2.2 Maintenance

Council also captures and reports maintenance costs at a detailed level. Historical costs from the past five years, adjusted for inflation, have been used to forecast expenditure over the next 10 years. Council's historical maintenance costs are show in Table 12.

Table 12 Historical maintenance expenses

Maintenance Cost Description	2019	2020	2021	2022	2023	Total
Bridge & Culvert Maintenance	$ 1,567	$ 624	$ 480			$ 890
Urban Streets Road Maintenance	$ 202,301	$ 75,417	$ 86,863	$ 55,208	$ 128,681	$ 109,694
Regional Road Maintenance	$ 818,122	$ 435,010	$ 875,401	$ 1,905,136	$ 2,710,360	$ 1,348,806
Sealed Rural Road Maintenance	$ 498,663	$ 547,142	$ 588,803	$ 687,512	$ 1,430,353	$ 750,495
Unsealed Rural Road Maintenance	$ 1,179,732	$ 1,361,470	$ 1,669,070	$ 3,955,159	$ 1,565,707	$ 1,946,227
Total	$ 2,700,384	$ 2,419,663	$ 3,220,615	$ 6,603,015	$ 5,835,101	$ 20,778,778

The average annual maintenance cost used for lifecycle cost modelling is $4,155,756 in 2023 dollars.

6.3 Renewals and Replacement

Renewal, Replacement and Refurbishment are capital investment works aimed at restoring the service potential of an existing asset to its original level of performance (but not to a higher level[3]). The terms are often used interchangeably or collectively referred to as Renewals, which is the term used in this AMP.

Replacement strategies are designed to provide for the progressive replacement of individual assets that have reached the end of their useful lives. This is managed at a rate that maintains the standard and value of the portfolio as a whole.

Refurbishment strategies allow existing assets to be restored to original service potential through reconditioning or rehabilitation of component parts.

[3] Increasing the service potential to a higher level of performance or capacity is regarded as new capital or acquisition.

Council's renewal planning approach is to endeavour to refurbish where possible, rather than replace, subject to asset condition and the best value-for-money solution. For planning purposes, however, like-for-like replacement costs are generally assumed.

Developing forecast models for renewals based on expected deterioration and asset lives is a practical way of identifying future expenditure requirements. In their simplest form, and in the approach used by Council, life cycle renewal models use rules such as 'replace at end of standard useful life' to identify the timing and quantum of renewal expenditures.

Required levels of expenditure on the renewal plan will vary from year to year and will reflect:

- Age profile of assets
- Condition and performance profiles
- Ongoing maintenance demands, and
- Varying useful lives of individual assets across the portfolio.

Failure to maintain an adequate renewal program will be reflected in a decline in the overall standard of the asset portfolio. Where the actual program falls below budget targets, the shortfall will be reflected in the depreciation of the overall asset portfolio value, resulting in a lower level of service and an increased need for reactive maintenance.

Council's historical renewal capital expenditure over the past 5 years is shown in Table 13.

Table 13 Historical renewals expenditure

Expenditure	2019	2020	2021	2022	2023	Average
Renewal Capital	$ 2,601,305	$ 1,528,292	$ 3,260,994	$ 4,502,022	$ 8,320,012	$ 4,042,525-

6.4 Acquisitions

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

Upgrades to assets should be considered when there is an inability to meet capacity or other LoS requirements, to address new safety risks, or to meet regulatory or statutory requirements. They may also be considered if there is a compelling business case benefit to implementing new technology, or when sourcing of components becomes impractical due to obsolescence. Opportunities for upgrades and new works are generally identified through development plans, corporate planning processes and monitoring of the latest regulations.

Council's evaluation and approval of acquisitions generally includes consideration of the associated future life cycle costs (operations, maintenance, depreciation and replacement) to ensure long-term sustainability of funding.

Council's historical capital acquisition expenditure over the past 5 years is shown in Table 14. While this expenditure can vary widely from year to year due factors such as disaster reconstruction, which is typically grant funded, the five-year average has been used to provide a provision for this expenditure in the financial forecasts.

Table 14 Historical new capital expenditure / acquisitions

Expenditure	2019	2020	2021	2022	2023	Average
Acquisitions	$ -	$ -	$ -	$ 9,373,804	$ -	$ 1,874,761

6.5 Disposals

Disposal is the retirement or sale of assets that have become surplus to requirements or superseded by new or improved systems. Assets may become surplus to requirements for many different reasons. In the case of Council's roads and transport assets however, it is rare that assets are disposed of or decommissioned and hence disposal-related costs or proceeds have not been included.

7. Financial Plan

This section summarises the whole-of-life asset expenditure forecasts for management of this asset class in accordance with established asset management strategies, the desired levels of service, and planned budgets. Projections have been developed using a life cycle cost model (LCCM). There continue to be opportunities for Council to improve its accounting systems and processes to support improved forecasting, and these will be addressed as part of its continuous improvement.

Unless otherwise stated, all values are in current (2023) dollars.

Improvement Action 6:

Progressively improve financial processes to allow budgeting at the level of operations, maintenance, renewal capital, and new capital, for each AMP asset class.

7.1 Operations Expenditure

The forecast operations expenditure is proposed to be shown in this section in future versions of this AMP and following the revision of historical transport operating expense classifications and treatment.

7.2 Maintenance Expenditure

The forecast maintenance expenditure shown Figure 7 is reflective of an assumed continuation of the maintenance expenditure levels of the past 5 years. This represents an annual expenditure of $4,155,756 in real terms. This is considered reasonable given the expected minimal growth of the physical asset portfolio over the forecast period, and the expected continuation of existing maintenance strategies and practices. It is expected that as Council's asset data quality and asset management practices improve over time, savings in unplanned maintenance, in particular, should reduce. Such efficiency dividends have not been incorporated into the projections, however, as with operations expenses, maintenance expenditure is expected to be within or in line with budgeted funds.

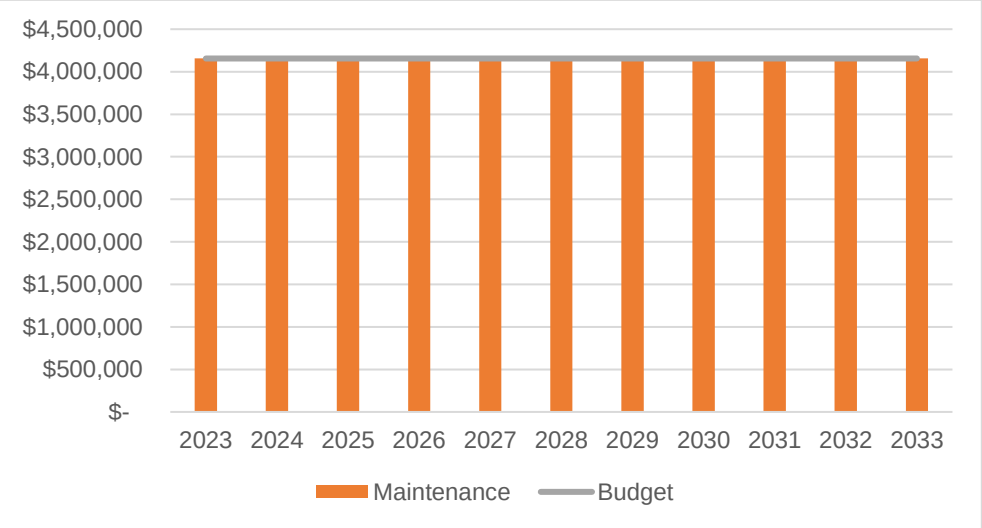

Figure 7 Forecast maintenance expenditure

7.3 Renewal Capital Expenditure

The capital renewal expenditure forecasts include asset renewals, replacement, and capital refurbishment. They do not include upgrades or enhancements of existing assets, or new assets, which are covered in the next section.

Capital renewals expenditure is projected to vary year by year as shown in Figure 8, but the sum of the ten-year expenditure is expected to be within the total budgeted funds for the period.

The anticipated peak in 2025 is due to forecast renewal of unsealed pavement section at Baroma Road, Blue Nobby Road, Buckie Road, Tucka Tucka Road and Yallaroi Road. The further peak in 2027 is for renewal of unsealed pavement sections at Blue Nobby Roads, Eulourie Road, Gineroi Road and Yallaroi Road. These projected peaks will be the subject of more detailed investigation in the lead-up to those years with a view to smoothing the overall expenditure profile.

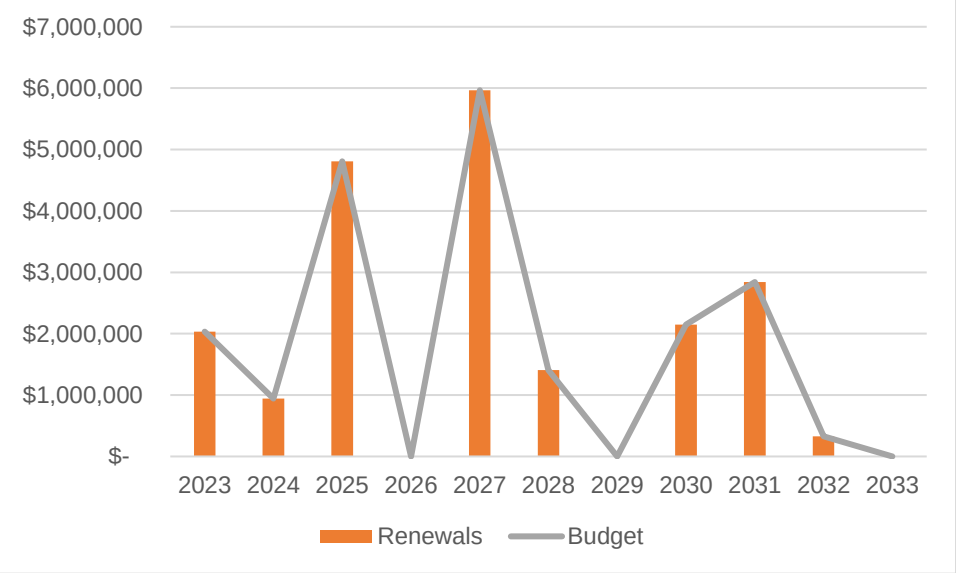

Figure 8 Forecast renewals expenditure

7.4 New Capital / Acquisitions

There are presently no specific transport assets identified for acquisition within the life of the plan, however provision has been made for an annual equivalent to the average of the past five years. This is reflected as $1,874,761 in real terms. Future changes to this outlook will be incorporated in subsequent versions of the AMP.

7.5 Disposal Costs

There are no specific Transport assets identified for disposal within the life of the plan.

7.6 Combined Asset Lifecycle Cost Summary

The combined asset lifecycle forecast summary is presented in Table 15 below, and graphically in Figure 9 overpage.

The total projected expenditure across the eleven years is $86.8 million with an annual average of $7.89 million. The expenditure profile is relatively even across this period with the exception of notable peaks in 2025 and 2027, as discussed in Section 7.3.

Table 15 Life cycle expenditure forecast

Year	Operations Expenditure[4]	Maintenance Expenditure	Renewal Capital	New Capital / Acquisition	Total
2023	n/a	$ 4,155,756	$ 2,033,038	$ 1,874,761	$8,063,555
2024	n/a	$ 4,155,756	$ 942,429	$ 1,874,761	$6,972,946
2025	n/a	$ 4,155,756	$ 4,805,596	$ 1,874,761	$10,836,113
2026	n/a	$ 4,155,756	$ -	$ 1,874,761	$6,030,517
2027	n/a	$ 4,155,756	$ 5,965,705	$ 1,874,761	$11,996,222
2028	n/a	$ 4,155,756	$ 1,405,960	$ 1,874,761	$7,436,476
2029	n/a	$ 4,155,756	$ -	$ 1,874,761	$6,030,517
2030	n/a	$ 4,155,756	$ 2,148,435	$ 1,874,761	$8,178,951
2031	n/a	$ 4,155,756	$ 2,841,460	$ 1,874,761	$8,871,976
2032	n/a	$ 4,155,756	$ 328,367	$ 1,874,761	$6,358,883
2033	n/a	$ 4,155,756	$ -	$ 1,874,761	$6,030,517

In summary, this transport AMP is anticipated to be fully funded, with total funding across the ten-year period expected to meet combined expenditure requirements.

[4] Not currently available. To be provided in future versions of this AMP

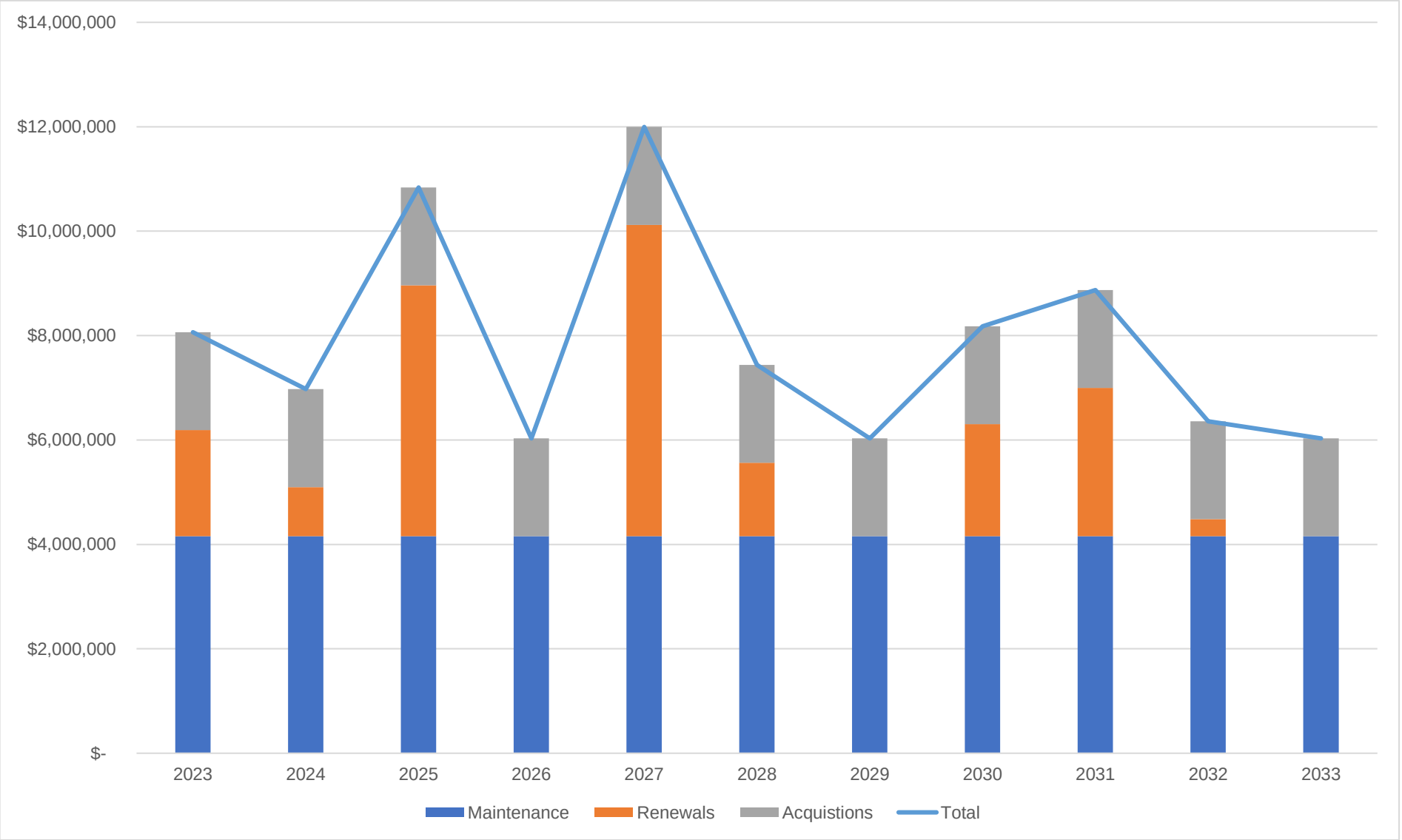

Figure 9 10-year life cycle expenditure forecast

8. Plan Improvements and Monitoring

8.1 Responsibility for Plan Reviews

This plan reflects the desire of Council to effectively manage their assets and ensure alignment with their strategic documents and ISO 55000 best practice standards.

The Asset and Services Team will provide the overarching management of the Asset Management planning process. The AMP will be reviewed and updated regularly to ensure it remains current and reflects the required levels of service and forecasted financials across operations, maintenance, renewals and capital expenditures.

8.2 Asset Management Plan Updates

The AMP includes three elements that need to be reviewed and updated on the following recurrent cycle by the relevant asset custodian, shown below.

Table 16 AMP update schedule

Element	Update Plan	Minimum Recurrent Cycle
Asset Management Plan	Up-to-date data from condition assessments and valuations will be recorded in the asset register.	Annual
	Update the asset summary sections based on condition and asset data.	Annual
	Review the document and update as changes occur with governance structures, new asset management systems, procedures or practices are implemented.	Four Yearly (coinciding with change of Council)
Lifecycle Cost Model	Update when condition data changes, new assets have been created or existing disposed. Update rates used to calculate refurbishment and replacement costs and update upgrades and new works lists.	Annual
Support Documents	Review and update sections on levels of service, risk, criticality, and improvement plan.	Annual

8.3 Asset Management Plan Improvements

In developing this AMP document areas of improvements were identified and actions developed. The list of improvement actions for this asset class is summarised in Table 17 below. Due dates are given to provide an indicative priority only. Reference should also be made to Council's Asset Management Strategy where a consolidated list of initiatives is provided in the Asset Management Improvement Plan, across all asset classes.

Table 17 AMP improvement actions

Item	AMP Section	Improvement Initiative	Responsibility	Due Date
1	5.2	Formulate and implement an asset criticality framework and apply to all assets, as the basis for development and prioritisation strategies for risk mitigation.	Engineering Services Director	31/03/25
2	2.2	Update future versions of the AMP to include details of condition assessment frequencies, methodologies, and reporting.	Asset Custodian	30/06/25
3	3.1.2, 5.3	Undertake a climate change impact review and risk assess outcomes to determine what mitigation measures or other management strategies are appropriate for the asset class. Further guidance on risk management due to climate change can be found in the Climate Risk Ready NSW Guide. The Guide provides a four-step process to conduct or revise a climate change risk assessment aligned to ISO:31000 (2018) risk management guidelines and builds upon national and international best practice in climate change risk assessment and adaptation practice. The assessments generate information that can be used to assist with decisions under conditions of risk and uncertainty and can help when considering the emerging climate change risks alongside tradition risk categories.	Asset Custodian	31/12/24
4	4.2	Review potential water supply performance measures and Level of Service metrics with stakeholders to identify measures of customer and technical objectives. A process should be initiated to develop measures that are SMART (Specific, Measurable, Attainable, Relevant and Time-based) for each Level of Service	TBA	30/06/25
5	6.2.1	Revise classification and treatment of transport operations costs to provide a more accurate basis for forecasting future expenditure, and include in future financial projections.	Assets and Data Finance Officer, CFO, Engineering Services Director	31/12/24
6	7	Progressively improve financial processes to allow budgeting at the level of operations, maintenance, renewal capital, and new capital, for each AMP asset class.	Assets and Data Finance Officer, CFO	30/06/25

Appendix A

References

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ISO 31000:2018 Risk Management – Guidelines

Appendix B

Glossary

Term	Description
Asset	An item, thing or entity that has potential or actual value to an organisation (such as plant, machinery, buildings, etc).
Asset Management (AM)	The coordinated management of activities of an organisation to deliver on its objectives.
Asset Management Framework (AMF)	The overarching AM hierarchy including the AM Policy, Objectives, Strategy and Asset Management Plans.
Asset Management Objectives	Results to be achieved with respect to asset management.
Asset Management Plan (AMP)	Long-term plans (usually 10-20 years or more for infrastructure assets) that outline the asset activities and programmes for each service area and resources applied to provide a defined level of service in the most cost effective way. OR Documented information that specifies the activities, resources and timescales required for an individual asset or a grouping of assets, to achieve the organisation's asset management objectives.
Asset Management Policy	A high level statement or an organisation's principles and approach to asset management.
Asset Management Strategy	A high level action plan that gives effect to an organisation's Asset Management Policy. Documents and specifies how the organisational objectives are to be converted into AM objectives, the approach for developing AM Plans and the role of the AM system in supporting the achievement of AM Objectives. OR ISO55000 definition: Documented information that specifies how the organisational objectives are to be converted into asset management objectives, the approach for developing Asset Management Plans. And the role of the AM system in supporting achievement of the AM objectives.
Asset Management System	A set of interrelated or interacting elements of an organisation, including the AM Policy, AM Objectives, AM Strategy, AM Plans, and the processes to achieve these objectives.
Capital Expenditure (CAPEX)/Captial Investment	Expenditure used to create new assets, renew assets, expand or upgrade assets or to increase the capacity of existing assets beyond their original design capacity or service potential. CAPEX increases the value of asset stock.
Condition	The physical state of the asset.
Condition Assessment (Condition Monitoring)	The inspection, assessment, measurement and interpretation of the resultant data, to indicate the condition of a specific component so as to determine the need for some preventive or remedial action.
Condition Grade	A measure of the physical integrity of an asset or component.
Customer	Any person who uses the asset or service, or is affected by it or has an interest in it either now or in the future. This definition does not necessarily require that payment is made for use of the assets.
Decommission	Actions required to take an asset out of service.
Demand Management	Actions taken to influence demand for services and assets, often undertaken as part of sustainability initiatives and/or to avoid or defer required asset investment.
Disposal	Actions necessary to decommission and dispose of assets that are no longer required.

Facility	A complex comprising many assets which represents a single management unit for financial, operational, maintenance or other purposes.
Infrastructure	Stationary systems forming a network or a portfolio of assets serving whole communities, where the system as a whole is intended to be maintained indefinitely at a particular level of service potential by the continuing replacement and refurbishment of its components. The network may include normally recognised ordinary assets as components.
ISO 55000: International Standard for Asset Management	The globally recognized standard for asset management. Consists of three separate documents: 1. ISO 55000 – the concepts and definitions which underpin the standards, 2. ISO 55001– the requirements that make up the standard for effective and efficient AMS, and 3. ISO 50002 – guidance on implementing, maintaining and controlling the AMS. The standard was released in early 2014 and replaced the long-standing British Standard commonly known as PAS 55.1
Leadership	A process of guiding and maximising the efforts of a team towards the achievement of a shared vision.
Level of Risk	The level of risk is its magnitude. It is estimated by considering and coming consequences and likelihoods. A level of risk can be assigned to a single risk or to a combination of risks. A consequence is the outcome of an event and has an effect of objectives. Likelihood is the chance that something might happen.
Level of Service	The parameters or combination of parameters that reflect social, political, economic and environmental outcomes that the organisation delivers. Levels of service statement describe the outputs or objectives an organisation or activity intends to deliver to customers.
Life	A measure of the anticipated life of an asset or component, such as time, number of cycles, distance intervals, etc.
Lifecycle	The time interval that commences with the identification of the need for an asset and terminates with the decommission of the asset or any liabilities thereafter.
Lifecycle Cost	Encompasses all AM strategies and practices associated with an asset or group of assets that results in the lowest lifecycle cost.
Long Term Financial Plan (LTFP)	Provides a framework for delivering cost effective services, maximising value and financial sustainability.
Maintenance	Details the specific planned and unplanned maintenance actions for an asset or facility.
Maintenance Plan	Details the specific planned and unplanned maintenance actions for an asset or facility.
Operation	The active process of utilising an asset which will consume resources such as manpower, energy, chemicals and materials.
Performance Measure	Continuous or periodic quantitative and qualitative assessments of the actual performance compared with specific objectives, targets or standards.
Planned Maintenance	Planned maintenance activities fall into three categories: • Periodic – necessary to ensure the reliability or to sustain the design life of an assets.

	• Predicative – condition monitoring activities used to predict failure. • Preventive – maintenance that can be initiated without routine or continuous checking (e.g. Using information contained in maintenance manuals or manufacturer's recommendations) and is not condition-based.
Refurbishment	Major (capital) works to restore the capacity or performance capability of a life-expired asset to its as-new level.
Renewal	Works to replace existing assets or facilities with assets or facilities of equivalent capacity or performance capability, or the refurbishment of such assets to achieve similar performance and service outcomes. (see also Refurbishment, Replacement)
Remaining Useful Life	The time remaining until an asset ceases to provide the required service level or economic usefulness.
Replacement	The complete replacement of an asset that has reached the end of its life, so as to provide a similar, or agreed alternative, level of service.
Risk	The effect of uncertainty on objectives. Risk events are events which may compromise the delivery of the organisation's strategic objectives.
Stakeholder	A person or entity that can affect, be affected by, or perceived themselves to be affected by a decision or activity.
Strategic Plan	A plan containing the long-term goals and strategies of an organisation. Strategic plans have a strong external focus, cover major portions of the organisation and identify major targets, actions and resource allocations relating to the long-term survival, value and growth of the organisation.
Sustainability	Sustainability is the capacity to endure. In the context of AM it is about meeting the needs of the future by balancing social, economic, cultural and environmental outcomes or needs when making decisions today.
Unplanned Maintenance	Corrective work required in the short-term to restore an asset to working condition so it can continue to deliver the required service or to maintain its level of security and integrity.
Useful Life	The period over which an asset or component is expected to be available for use by an entity.
Valuation	The process of determining the worth of an asset or liability. Assessed asset value which may depend on the purpose for which the valuation is required, i.e. replacement value for determining maintenance levels, market value for lifecycle costing.
Whole life cycle	Refer Lifecycle.