CESSNOCK CITY COUNCIL

PLANNING FOR OUR PEOPLE.
OUR PLACE. OUR FUTURE.

ROAD AND ROAD INFRASTRUCTURE NETWORK

ASSET MANAGEMENT PLAN

CESSNOCK CITY COUNCIL

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1.0 EXECUTIVE SUMMARY

1.1 The Purpose of the Plan

The Road Asset Management Plan (AMP) details information about road infrastructure assets with actions required to provide an agreed level of service in the most cost-effective manner while outlining associated risks. The plan defines the services to be provided, how the services are provided and what funds are required to provide over the 10 year planning period. The AMP links to a Long-Term Financial Plan which considers a 10-year planning period.

1.2 Asset Description

This plan covers the infrastructure assets that provides a road network in partnership with other Roads authorities such as Transport for NSW (TfNSW) and neighbouring Councils to allow for safe and efficient pedestrian, cycle and motor vehicle transportation.

Based on available asset information Cessnock Council's Road network comprises of:

- 314 km of Unsealed Roads
- 797 km of Sealed Roads
- 4 km of Runway and Taxiway
- 535 km Kerb & Gutter
- 183 km Footpaths
- 126 Carparks
- 88 Bus Shelters
- 188 Pedestrian Refuges
- 37 Roundabouts
- Various other traffic medians and guardrails.

The above infrastructure assets have replacement value estimated at **$1,128,490,282** as at 30th June 2025.

1.3 Levels of Service

The allocation in the planned budget is insufficient to continue providing existing services at current levels for the planning period.

The main service consequences of the Planned Budget are:

- Reduction in rural road maintenance cycles
- Decrease in LoS for road surface

1.4 Future Demand

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

- Population changes
- Changes in demographics
- Climate change
- Vehicle ownership rates
- Consumer preferences and expectations
- Technological changes
- Economic factors

- Environmental awareness

These demands will be approached using a combination of managing existing assets, upgrading existing assets and providing new assets to meet demand. Demand management practices may also include a combination of non-asset solutions, insuring against risks and managing failures.

1.5 Lifecycle Management Plan

1.5.1 What does it Cost?

The forecast lifecycle costs necessary to provide the services covered by this AM Plan includes operation, maintenance, renewal, acquisition, and disposal of assets. Although the AM Plan may be prepared for a range of time periods, it typically informs a Long-Term Financial Planning period of 10 years. Therefore, a summary output from the AM Plan is the forecast of 10-year total outlays, which for the road and road infrastructure assets is estimated as $580,686,976 or $58,068,700 on average per year.

1.6 Financial Summary

1.6.1 What we will do

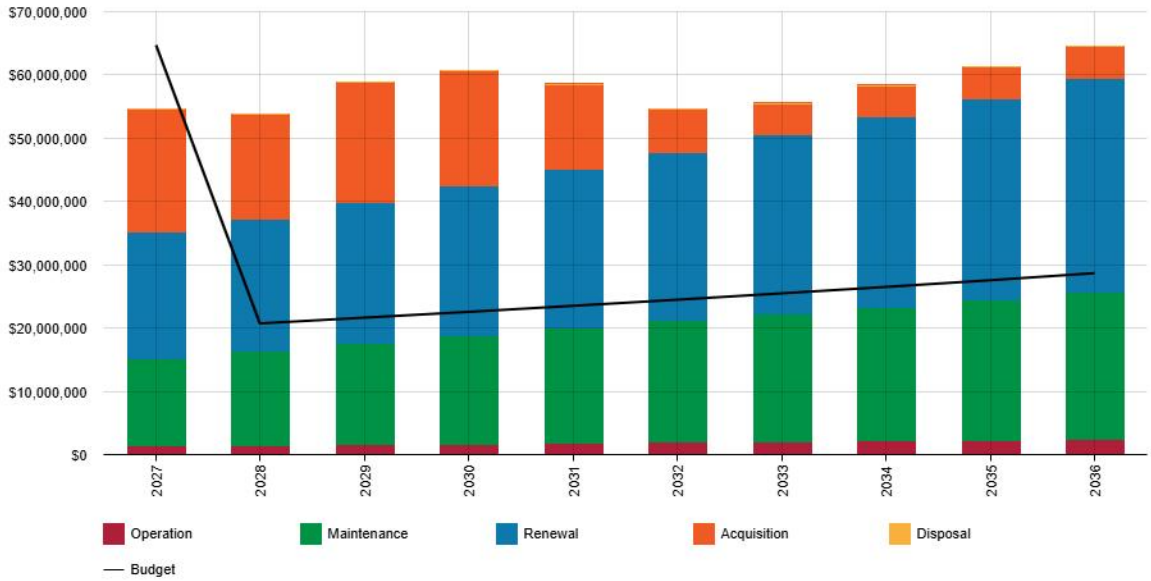
Estimated available funding for the 10 year period is $285,920,736 or $28,592,074 on average per year as per the Long-Term Financial plan or Planned Budget. This is 49.245% of the cost to sustain the current level of service at the lowest lifecycle cost.

The infrastructure reality is that only what is funded in the long-term financial plan can be provided. The Informed decision making depends on the AM Plan emphasising the consequences of Planned Budgets on the service levels provided and risks.

The anticipated Planned Budget for road and road infrastructure assets leaves a shortfall of $29,476,628[1] on average per year of the forecast lifecycle costs required to provide services in the AM Plan compared with the Planned Budget currently included in the Long-Term Financial Plan. This is shown in the figure below.

[1] Includes maintenance, operational, renewal and upgrade costs not accounted for in current budgets

Forecast Lifecycle Costs and Planned Budgets



* Upgrade to Wollombi Road Project skew first years budget as primarily grant funded

We plan to provide services for the following:

- Operation, maintenance, renewal and acquisition of road and road infrastructure assets to meet service levels set by Cessnock City Council in annual budgets.

1.6.2 What we cannot do

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

Sustaining the road and road infrastructure assets at the community desired condition “3” or better.

1.6.3 Managing the Risks

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

The main risk consequences are:

- Major road pavement failure leading to more expensive rehabilitation costs
- Increased risk of motor vehicle accidents due to road failure
- Negative public perception as a result of major pavement failure

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

- Increasing asset inspections.
- Increasing response levels to temporarily repair critical pavement and surface failures.
- Increasing road renewal / reseal programs as an early intervention strategy to reduce the need for more expensive rehabilitation.
- Asset Management Planning Practices

Key assumptions made in this AM Plan are:

- Use of existing inventory and condition data as at 30 June 2024/2025.
- Use of 2023/24 & 2024/2025 Asset Revaluation Manual.
- Planned expenditure values obtained from current budgets and Council's four-year delivery program, and Council's LTFP.

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

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

The Alternate Method was used to forecast the renewal lifecycle costs for this AM Plan.

This AM Plan is based on a reliable[2] level of confidence information.

1.7 Monitoring and Improvement Program

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

- Review and further develop a critical asset management plan and further define critical assets
- Undertake further community consultation to allow a full review of service levels.
- Finalise desired levels of service by establishing current performance and setting performance targets. Have these Levels of Service adopted by Council
- Ensure forecasts within the AMP are the driver of LTFP budgets and CW amounts. Allowance to be made for dedicated assets and ongoing lifecycle costs.
- Proactively implementing a sealing of unsealed roads program
- Improve response to climate change impacts
- A full review of useful lives

[2] confidence level; highly reliable, reliable , uncertain, very uncertain to unknown

2.0 Introduction

2.1 Background

This AM Plan communicates the requirements for the sustainable delivery of services through management of assets, compliance with regulatory requirements, and required funding to provide the appropriate levels of service over the planning period.

The AM Plan is to be read with the Cessnock City Council planning documents. This should include the Asset Management Policy and Asset Management Strategy, where developed, along with other key planning documents:

- Cessnock Community Strategic Plan
- Cessnock City Council Operational and Delivery Plan
- Cessnock City Council LTFP
- Cessnock City Council Annual Reports
- 2023-2024/2024-2025 Infrastructure Asset Revaluation Manual
- NSW OLG Integrated Planning Guidelines
- NSW OLG Integrated Planning Handbook
- Cessnock City Council 2023 Resident Satisfaction Survey Results
- Cessnock City Council 2021 Resident Satisfaction Survey Results
- Cessnock City Council 2015 Asset Management Research Satisfaction Survey Results
- Cessnock City Council 2017 Asset Management Research

Cessnock City Council Asset Management maturity is considered to be 'core'.

The infrastructure assets covered by this AM Plan include road and road infrastructure assets providing transportation services for the community. For a detailed summary of the assets covered in this AM Plan refer to Table in Section 5.

The infrastructure assets included in this plan have a total replacement value of **$1,128,490,282**[3] as at 30th June 2025.

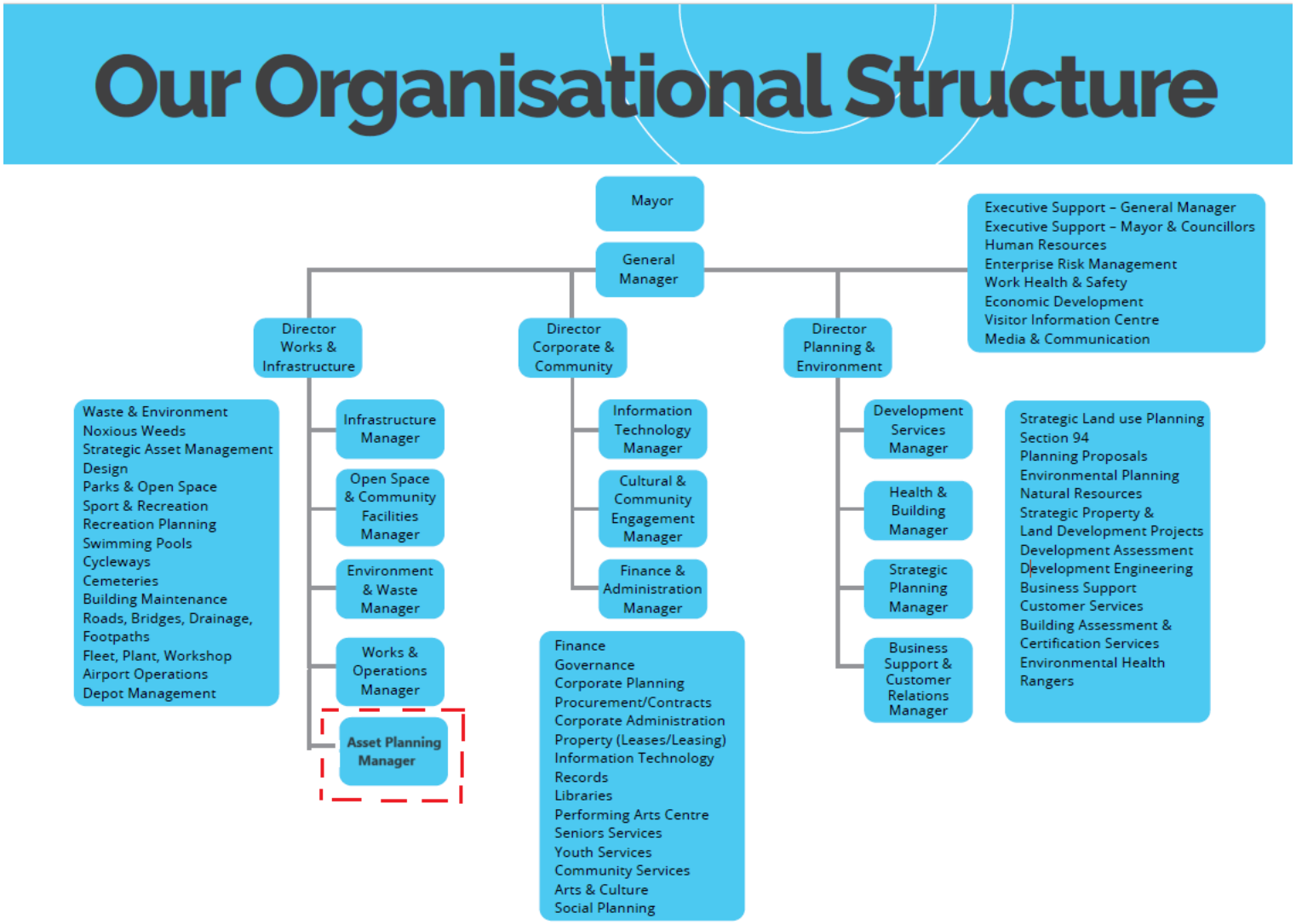
[3] Includes indexation

Key stakeholders in the preparation and implementation of this AM Plan are shown in Table 2.1.

Table 2.1: Key Stakeholders in the AM Plan

Key Stakeholder	Role in Asset Management Plan
Councillors	• Represent needs of the community, • Allocate resources to meet the organisation's objectives in providing services while managing risks, • Ensure the organisation is financially sustainable. • Provide stewardship by ensuring the protection of assets for current and future generations.
General Manager	• Ensure the development and implementation of Council's Asset Management Policy, Plans and Processes and for their integration with Council's Integrated Planning and Reporting Framework under the Local Government Act. • Report on the status and effectiveness of Asset Management within Council.
Council Staff	• Development and implementation of Council's Asset Management Plans and Processes and for their integration with Council's Integrated Planning and Reporting Framework under the Local Government Act. • Ensure integration and compliance of the Asset Management Policy and Strategy with other policies and business processes of Council. • Ensure compliance with legal obligations. • Ensure sound business principles are reflected in the Asset Management strategies and plans that are developed. • Implementation of activities in the Plans. • Engage up to date technologies, methodologies and continuous improvement processes. • Facilitate "Best Appropriate Practice in Asset Management".
Community	• Provides input into the services required and the cost the community is prepared to pay • Set expectation levels

Our Organisational Structure for service delivery from infrastructure assets is detailed below:



2.2 Goals and Objectives of Asset Ownership

Our goal for managing infrastructure assets is to meet the defined level of service (as amended from time to time) in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Providing a defined level of service and monitoring performance,
- Managing the impact of growth through demand management and infrastructure investment,
- Taking a lifecycle approach to developing cost-effective management strategies for the long-term that meet the defined level of service,
- Identifying, assessing and appropriately controlling risks, and
- Linking to a Long-Term Financial Plan which identifies required, affordable forecast costs and how it will be allocated.

Key elements of the planning framework are

- Levels of service – specifies the services and levels of service to be provided,
- Risk Management,
- Future demand – how this will impact on future service delivery and how this is to be met,
- Lifecycle management – how to manage its existing and future assets to provide defined levels of service,
- Financial summary – what funds are required to provide the defined services,
- Asset management practices – how we manage provision of the services,
- Monitoring – how the plan will be monitored to ensure objectives are met,
- Asset management improvement plan – how we increase asset management maturity.

Other references to the benefits, fundamentals principles and objectives of asset management are:

- International Infrastructure Management Manual 2020
- ISO 550004

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

[4] ISO 55000 Overview, principles and terminology

Road Map for preparing an Asset Management Plan

Source: IPWEA, 2020, IIMM, Fig 3.6.2.1

3.0 LEVELS OF SERVICE

3.1 Customer Research and Expectations

Cessnock Council engaged Micromex Research in 2023 to undertake community research. In the telephone and online survey conducted, residents were contacted to discuss their satisfaction and expectations in the delivery of existing road infrastructure. A clear theme established from the survey is that out of all the priority issues within the Cessnock Local Government area, roads and road safety are the highest identified priority (67%). The following other key findings were:

Table 3.1: Customer Satisfaction Survey Levels 2023

Service/Facility	Importance (mean ratings)		Satisfaction (mean ratings)	
	Phone	Online	Phone	Onlin
Maintaining sealed roads	4.84	4.30	1.68	1.40
Maintaining unsealed roads	4.45	4.02	2.00	1.59
Converting unsealed roads to sealed roads	4.07	3.76	1.96	1.52
Regulating traffic flow	4.42	4.04	2.52	1.84
Stormwater drainage	4.29	4.09	2.72	2.11
Roadside drainage	4.34	4.04	2.61	2.02
The provision of footpaths and cycleways	4.01	3.88	2.74	1.98
Maintenance of footpaths and cycleways	4.07	3.91	2.80	2.08
Parking in town centres	4.44	4.00	2.77	2.32

Table 3.1.1: Historical Customer Satisfaction Survey Results

Performance Measure	Importance	Satisfaction	Performance Gap 2021	Performance Gap 2019
Maintaining sealed roads	4.80	1.84	2.95	2.71
Maintaining unsealed roads	4.39	2.02	2.37	2.21
Converting unsealed roads to sealed roads	4.01	2.02	1.99	NA
Regulating traffic flow	4.38	2.67	1.71	1.29
The provision of footpaths and cycleways	4.16	2.61	1.55	1.70
Maintenance of footpaths and cycleways	4.30	2.81	1.49	1.56
Parking in town centres	4.46	2.81	1.65	1.72

In addition, the 2036 Community Strategic Plan indicated the community satisfaction for roads has varied over the past 10 years, see table 3.1.1:

Table 3.1.2: Customer Satisfaction 10 Year

Measure	2012	2014	2016	2021	Target
The road network is effective and in good repair	1.45	1.91	1.87	1.84	Improve

Council also engaged Micromex Research in March of 2015 to undertake further Community Consultation. This was to determine what the community finds as an acceptable condition state of the assets. The concluding evidence from this survey found: "*The majority of residents indicated that 'Condition 3 or better' was the acceptable condition for all assets*". The online component of the 2023 survey suggested the community would prefer (66%) that the Council concentrate on maintaining existing assets in condition 4 & 5.

3.2 Strategic and Corporate Goals

This AM Plan is prepared under the direction of Cessnock City Councils' vision, mission, goals and objectives.

Our vision is:

"Cessnock - Creating a Resilient, Sustainable and Diverse Community".

Councils' Delivery Program has five desired outcomes as identified in the Community Strategic Plan. They are:

1. **Live**
2. **Thrive**
3. **Protect**
4. **Move; and**
5. **Lead.**

Relevant community desired outcomes and strategic directions, and how these are addressed in this asset management plan are:

Table 3.2: Goals and how these are addressed in this Plan

Goal	Objective	How Goal and Objectives are addressed in the AM Plan
Accessible infrastructure, services and facilities	**Objective 4.1 Progress our transport links**	• Continue to apply to State Government for Bus Stop upgrades to comply with accessibility standards • Continue to implement the actions of the Cycleway Strategy
	Objective 4.2 Improve our road network	• Advocate for road funding to better manage traffic impacts on the local road network. • Utilise budget scenarios within the AMP to develop LTFP • Delivery of prioritised capital works programs in line with the AMP

3.3 Legislative Requirements

There are many legislative requirements relating to the management of assets. Legislative requirements that impact the delivery of the roads and road infrastructure assets are outlined in Table 3.3.

Table 3.3: 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. The purposes of this Act are as follows: (a) to provide the legal framework for an effective, efficient, environmentally responsible and open system of local government in New South Wales, (b) to regulate the relationships between the people and bodies comprising the system of local government in New South Wales, (c) to encourage and assist the effective participation of local communities in the affairs of local government, (d) to give councils: • the ability to provide goods, services and facilities, and to carry out activities, appropriate to the current and future needs of local communities and of the wider public; • the responsibility for administering some regulatory systems under this Act; • a role in the management, improvement and development of the resources of their areas. (e) to require councils, councillors and council employees to have regard to the principles of ecologically sustainable development in carrying out their responsibilities.
Local Government Act Annual Report Section 428(2)(d)	(d) A report of the condition of the public works (including public buildings, public road and water sewerage and drainage works) under the control of council as at the end of that year; together with (i) An estimate (at current values) of the amount of money required to bring the works up to a satisfactory standard; and (ii) An estimate (at current values) of the annual expense of maintain the works at that standard; and (iii) The Council's programme for maintenance for that year in respect of the works.
Civil Liabilities Act	*Part 5 - liability of public and other authorities*; covers Councils' obligation to provide a duty of care to its residents within their available funding and/or resources.
Public Works Act	Sets out the role of Council in the planning and construction of new assets.
Environmental Planning and Assessment Act	An Act to institute a system of environmental planning and assessment for the State of New South Wales. Among other requirements the Act outlines the requirement for the preparation of Local Environmental Plans (LEP), Development Control Plans (DCP), Environmental Impact Assessments (EIA) and Environmental Impact Statements.
Work Health and Safety Regulations	Sets out roles and responsibilities to secure the health, safety and welfare of persons at work and covering injury

Legislation	Requirement
	management, emphasising rehabilitation of workers particularly for return to work. Council is to provide a safe working environment and supply equipment to ensure safety.
Threatened Species Conservation Act	An Act to conserve threatened species, populations and ecological communities of animals and plants.
Protection of the Environment Operations Act	Council is required to exercise due diligence to avoid environmental impact and among others are required to develop operations emergency plans and due diligence plans to ensure that procedures are in place to prevent or minimise pollution.
Road Transport (Safety and Traffic Management) Act	Facilitates the adoption of nationally consistent road rules in NSW, the Australian Road Rules. It also makes provision for safety and traffic management on roads and road related areas including alcohol and other drug use, speeding and other dangerous driving, traffic control devices and vehicle safety accidents.
Road Transport (General) Act	Provides for the administration and enforcement of road transport legislation. It provides for the review of decisions made under road transport legislation. It makes provision for the use of vehicles on roads and road related areas and also with respect to written off and wrecked vehicles.
Roads Act 1993	Sets out rights of members of the public to pass along public roads, establishes procedures for opening and closing a public road, and provides for the classification of roads. It also provides for declaration of the RMS and other public authorities as roads authorities for both classified and unclassified roads, and confers certain functions (in particular, the function of carrying out roadwork) on the RMS and other roads authorities. Finally, it provides for distribution of functions conferred by this Act between the RMS and other roads authorities, and regulates the carrying out of various activities on public roads.
Disability Discrimination Act and Disability Discrimination Regulations	The Federal Disability Discrimination Act 1992 (D.D.A.) provides protection for everyone in Australia against discrimination based on disability. It encourages everyone to be involved in implementing the Act and to share in the overall benefits to the community and the economy that flow from participation by the widest range of people.
Native Vegetation Act	This Act regulates the clearing of native vegetation on all land in NSW, except for excluded land listed in Schedule 1 of the Act. The Act outlines what landowners can and cannot do in clearing native vegetation.
AS 1742	Australian Standard 1742 which refers to a variety of road and traffic issues.
NSW Road Rules	A provision of road rules that are based on the Australian Road Rules so as to ensure that the road rules applicable in this State are substantially uniform with road rules applicable elsewhere in Australia.

3.4 Customer Values

Service levels are defined in three ways, customer values, customer levels of service and technical levels of service.

Customer Values indicate:

- what aspects of the service is important to the customer,
- whether they see value in what is currently provided and
- the likely trend over time based on the current budget provision

Table 3.4: Customer Values

Service Objective: Quality			
Customer Values	**Customer Satisfaction Measure**	**Current Feedback**	**Expected Trend Based on Planned Budget**
Well maintained sealed roads	Community Satisfaction Survey	1.54[5]	Improve
Well maintained unsealed roads	Community Satisfaction Survey	1.8	Maintain
Provision of footpaths and cycleways	Community Satisfaction Survey	2.36	Improve
Maintenance of footpaths and cycleways	Community Satisfaction Survey	2.44	Maintain

3.5 Customer Levels of Service

The Customer Levels of Service are considered in terms of:

Condition How good is the service…what is the condition or quality of the service?

Function Is it suitable for its intended purpose…Is it the right service?

Capacity/Use Is the service over or under used…do we need more or less of these assets?

In Table 3.5 under each of the service measures types (Condition, Function, Capacity/Use) there is a summary of the performance measure being used, the current performance, and the expected performance based on the current budget allocation.

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

[5] Where 1 is not satisfied and 5 is very satisfied

Table 3.5: Customer Level of Service Measures

Type of Measure	Level of Service	Performance Measure	Current Performance	Expected Trend Based on Planned Budget
Condition	Provide assets which meet community expectation[6]	Maintain assets at condition 3 "Fair" or better	Sealed Road Segments 79% in condition ≤3[7] Unsealed Roads 86% in condition 1,2,3 Carparks 93% in condition 1,2,3 Runway and Taxiways 0% in condition greater than 3 Kerb and Gutter 99% in condition 1,2,3 Footpaths 97% in condition 1,2,3 Bus Shelters 99% in condition 1,2,3 Pedestrian Refuges 98% in condition 1,2,3 Round-a-abouts 86% in condition 1,2,3	100% in condition 4 "poor" or better
	Confidence levels[8]		High	Medium

[6] Condition of roads, taxiways, runways and carparks is predominately viewed as the assets "surface" although a road is made up of surface, pavement base, pavement subbase and formation. The later two rarely have treatments. A Pavement Condition Index can be created to combine all components – see chapter 5.
[7] When Considering the surface of the road
[8] High (Professional Judgement supported by extensive data), Medium (Professional judgement supported by data sampling, Low (Professional Judgement with no data evidence)

Function				
	Parking in town centres	Customer Survey	2.55	Maintain
	Confidence levels		High	Medium
	Regulating traffic flow	Customer Survey	2.18	Maintain
	Confidence levels		High	Medium
Capacity				
	Converting[9] unsealed roads to sealed roads	Customer Survey	1.74	Maintain
	Confidence levels		High	Medium
	The provision of footpaths and cycleways	Community Satisfaction Survey	2.36	Improve
	Confidence levels		High	Confidence levels

3.6 Technical Levels of Service

Technical Levels of Service – To deliver the customer values, and impact the achieved Customer Levels of Service, are operational or technical measures of performance. These technical measures relate to the activities and allocation of resources to best achieve the desired customer outcomes and demonstrate effective performance.

Technical service measures are linked to the activities and annual budgets covering:

- **Acquisition** – the activities to provide a higher level of service (e.g. widening a road, sealing an unsealed road, replacing a pipeline with a larger size) or a new service that did not exist previously (e.g. a new library).
- **Operation** – the regular activities to provide services (e.g. opening hours, cleansing, mowing grass, energy, inspections, etc.
- **Maintenance** – the activities necessary to retain an asset as near as practicable to an appropriate service condition. Maintenance activities enable an asset to provide service for its planned life (e.g. road patching, unsealed road grading, building and structure repairs),
- **Renewal** – the activities that return the service capability of an asset up to that which it had originally provided (e.g. road resurfacing and pavement reconstruction, pipeline replacement and building component replacement),

Service planners and asset managers plan, implement and control technical service levels to influence the service outcomes.[10]

Table 3.6 shows the activities expected to be provided under the current 10 year Planned Budget allocation, and the Forecast activity requirements being recommended in this AM Plan.

[9] Council has a current policy that does not allow for sealing unsealed roads unless fully external funded.
[10] IPWEA, 2020, IIMM, Chap. 2.2.

Table 3.6: Technical Levels of Service

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance**	Recommended Performance ***
TECHNICAL LEVELS OF SERVICE				
Acquisition/ New	Deliver annual road upgrade program	% completion of annual upgrade programs	60% of upgrade programs in 2024/25.	90% of upgrade programs
		Budget	$45,000,000[11]	Grant Funding and general fund injections
Operation	Infrastructure meets user's needs.	Defects inspections	Road and Road Infrastructure are inspected regularly on a reoccurring routine cycle.	All assets are inspected regularly on a reoccurring routine cycle.
	Collected data for all assets is kept up to date and accurate in the asset database (MyData) and GIS.	Reconcile asset data in MyData and GIS	Reconciliation completed at revaluation intervals	Reconciliation completed annually
		Budget	$1,361,987	$1,479,690[12]
Maintenance	Provide on-going maintenance of Council's road network to ensure fit for purpose	Customer service requests relating to road maintenance Customer service requests relating to footpaths Customer service requests relating to kerb and gutter		
		Budget	$10,973,000	$13,833,310

[11] Grant injection to Wollombi Road Project
[12] With recommended increases from pressure of dedications

Lifecycle Activity	Purpose of Activity	Activity Measure	Current Performance**	Recommended Performance ***
Renewal	Deliver annual renewal programs	% completion of annual renewal programs		100% of renewal programs
		Budget	$7,395,000	$26,000,000
Disposal	Delivery of disposal works	% Complete when items identified within a program	NA	100%
		Budget	*nil*	*nil*

Note: * to drop to $0 year 2
** Current activities related to Planned Budget.
*** Expected performance related to forecast lifecycle costs.
Both current and recommended performance as based of year 1 of the program.

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

4.0 FUTURE DEMAND

4.1 Demand Drivers

Drivers affecting demand include things such as population change, regulations, changes in demographics, seasonal factors, vehicle ownership rates, consumer preferences and expectations, technological changes, economic factors, agricultural practices, environmental awareness, etc.

4.2 Demand Forecasts

The present position and projections for demand drivers that may impact future service delivery and use of assets have been identified and documented.

4.3 Demand Impact and Demand Management Plan

The impact of demand drivers that may affect future service delivery and use of assets are shown in Table 4.3.

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

Opportunities identified to date for demand management are shown in Table 4.3. Further opportunities will be developed in future revisions of this AM Plan.

Table 4.3: Demand Management Plan

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Population	70,765 as at 30/06/2023[13]	The projected population for 2041 is 107,375. As part of State Governmen t policy higher density developmen ts will be encouraged in the Hunter Valley Area. The current levels of growth are anticipated to continue	Population growth will increase traffic volumes, and increase demand on transport infrastructure, such as bus & transport facilities, footpaths & Cycleways, improved road network, etc.	Engage with the community to identify justifiable community needs from other expectations and consider only community needs consistent with Council's charter. Study road condition rating from this plan and prioritise a list of roads to be included in the annual reseal / rehabilitation program. Investigate alternative treatments to lower life cycle costs i.e. seal types, rejuvenation.
Demographic s	Approximately 3% of the residents are from non-English speaking backgrounds	An increase of migrants settling in Cessnock LGA from non-English speaking background s, are expected to increase.	Better Traffic Management Devices are Required, and Clearer Signage	New projects will need to be assessed with a balance between competing demands for compliance and regulation, renewing existing infrastructure, as well as providing expenditure for new infrastructure assets to meet growing service delivery demand

[13] Source: Home | Cessnock City Council | Community profile based on most current Census data

Demand driver	Current position	Projection	Impact on services	Demand Management Plan
Demographics	Over 39% of the population have a long term health condition, of which over 7.8% would need assistance in their day-to-day lives.	Expect to see an increase in demand for services due to the ageing population	Increase in demand for DDA compliant Infrastructure, Services and Equitable Access	Engage with the community to identify justifiable community needs from other expectations and consider only community needs consistent with Council's charter. New projects will need to be assessed with a balance between competing demands for compliance and regulation, renewing existing infrastructure, as well as providing expenditure for new infrastructure assets to meet growing service delivery demand
Climate Change	Scientific evidence supporting the notion of climate change.	Increase severity of weather events, temperature rise, rise in sea level.	Cessnock Road Infrastructure Assets will need to adapt to new climate risks to ensure appropriate infrastructure investment decisions are made to reduce long-term costs.	Investigate alternative treatments to lower life cycle costs, and combat climate impacts i.e. seal types, rejuvenation. Deliver the actions from the Sustainability and Climate Change Strategy. Implement the recommendations for cycleway and shared pathways from the Pedestrian Access and Mobility Plan.

Residential Development	Increase in demand for residential land and infrastructure.	Increase in population (see above)	Increase in demand for maintenance of roads, footpaths and associated infrastructure assets.	Implement enhanced quality control measures for donated assets. New projects will need to be assessed with a balance between competing demands for compliance and regulation, renewing existing infrastructure, as well as providing expenditure for new infrastructure assets to meet growing service delivery demand
Demand driver	**Current position**	**Projection**	**Impact on services**	**Demand Management Plan**
Changes in Land use	Changes in land use will result from rezoning and higher density developments.	As part of State Governmen t policy higher density developmen ts will be encouraged in the Hunter Valley Area. The current levels of growth are anticipated to continue.	Increased loading on existing infrastructure from development works (construction works can cause significant damage to existing infrastructure)	Revise planning controls to increase population density and decrease the extent of new road network. Encourage industry to be near State controlled roads.

4.4 Asset Programs to meet Demand

The new assets required to meet demand may be acquired, donated or constructed. Additional assets are discussed in Section 5.4.

Acquiring new assets will commit the Cessnock City Council to ongoing operations, maintenance and renewal costs for the period that the service provided from the assets is required. These future costs are identified and considered in developing forecasts of future operations, maintenance and renewal costs for inclusion in the long-term financial plan (Refer to Section 5).

4.5 Climate Change Adaptation

The impacts of climate change may have a significant impact on the assets we manage and the services they provide. In the context of the Asset Management Planning process climate change can be considered as both a future demand and a risk.

How climate change impacts on assets will vary depending on the location and the type of services provided, as will the way in which we respond and manage those impacts.[14]

Council currently has an adopted Climate Change Resilience Plan, which can be found on their website. This document sets out the climate change impacts on Council and the Councils' response to climate change.

Risk and opportunities identified to date are shown in Table 4.5.1

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

Climate Change Description	Projected Change	Potential Impact on Assets and Services	Management
Increase flood events	More frequent severe weather events	Assets damaged and temporarily out of service. May require community detours, or create temporary isolation.	Staff attend and put detours in place or close roads where necessary. Insurance in place for recovery works. Communities likely to become isolated (Wollombi/Laguna) have had emergency generators and solar power installed at Councils' community halls.
Increase fire events	Long periods of draught, increasing bush fire risk	Assets damaged and temporarily out of service. May require community detours, or create temporary isolation.	Staff attend and put detours in place or close roads where necessary. Insurance in place for recovery works.

Further review of management measures to be undertaken as an improvement item to this AMP.

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

- Assets will withstand the impacts of climate change;
- Services can be sustained; and
- Assets that can endure may potentially lower the lifecycle cost and reduce their carbon footprint

Table 4.5.2 summarises some asset climate change resilience opportunities.

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

Table 4.5.2 Building Asset Resilience to Climate Change

New Asset Description	Climate Change impact These assets?	Build Resilience in New Works
Reconstructed Roads	Increase rain events, or prolong periods of draught impacting underlying soils causes higher maintenance costs – i.e. pothole repair.	Investigate alternate pavement types; - Council has undertaken trials on recycled plastic component pavement, and recycled "crumbed" rubber component pavement.
New traffic facilities	Increase bush fire threat raises the risk of damaging traffic facilities.	All bus shelters are insured.
New footpaths	Increase rain events, or prolong periods of draught impacting underlying soils causes higher maintenance costs – i.e. lifting sections of pathway	Investigation into flexible pavement options in areas prone to roots or reactive soils.
Reconstructed runway/taxiways	Increase rain events, or prolong periods of draught impacting underlying soils causes higher maintenance costs – i.e. pothole repair.	Investigate alternate pavement types[15]

The impact of climate change on assets is a complex discussion and further opportunities will be developed in future revisions of this AM Plan.

[15] While still needing to conform to CASA construction standards

5.0 LIFECYCLE MANAGEMENT PLAN

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

5.1 Background Data

5.1.1 Physical parameters

The assets covered by this AM Plan include, and their value is shown in table 5.1.1:

- 314 km of Unsealed Roads
- 797 km of Sealed Roads
- 4 km of Runway and Taxiway
- 535 km Kerb & Gutter
- 183 km Footpaths
- 126 Carparks
- 88 Bus Shelters
- 188 Pedestrian Refuges
- 37 Roundabouts
- Various other traffic medians and guardrails.

Table 5.1.1: Assets covered by this Plan

Asset Category	Replacement Value
Roads, Kerb and Gutter, Bus Shelters and Traffic Facilities	$1,021,961,016
Runways and Taxiways	$15,941,476
Footpaths	$90,587,789

An age profile across the road and road infrastructure asset classes is difficult to portray as the historic date built of assets with long useful lives (80, 120 years etc.) is hard to determine. There is potential in future AMP iterations to possibly produce trends in age profiles of much shorter-lived assets replaced within the last 15-20 years (i.e. road surfaces current 24-34 lifespan). Each asset revaluation period undertakes a detailed review of the possible age of assets, including their expected useful life.

5.1.2 Asset capacity and performance

Assets are generally provided to meet design standards where these are available. However, there is insufficient resources to address all known deficiencies. Locations where deficiencies in service performance are known are detailed in Table 5.1.2.

Table 5.1.2: Known Service Performance Deficiencies

Location	Service Deficiency
Sealed Roads – Network wide	Based on the data captured in 2024 it shows that approximately 21% of the network has a surface condition rating in poor/very poor condition (condition 5)
Kerb & Gutter – Network wide	Based on the data captured in 2024 it shows that approximately 1% of the network has a condition rating in poor/very poor condition (condition 5)

Unsealed Roads	Based on the data captured in 2024 it shows that approximately 14% of the network has a condition rating in poor/very poor condition (condition 5)

The above service deficiencies were identified from the 2024 road and road infrastructure condition data capture.

5.1.3 Asset condition

Condition is currently monitored as part of the 5 yearly revaluation period, with Asset staff undertaking spot checks annually/when developing capital works programs.

Condition is measured using a 1 – 5 grading system[16] as detailed in Table 5.1.3. It is important that a consistent approach is used in reporting asset performance enabling effective decision support. A finer grading system may be used at a more specific level, however, for reporting in the AM plan results are translated to a 1 – 5 grading scale for ease of communication.

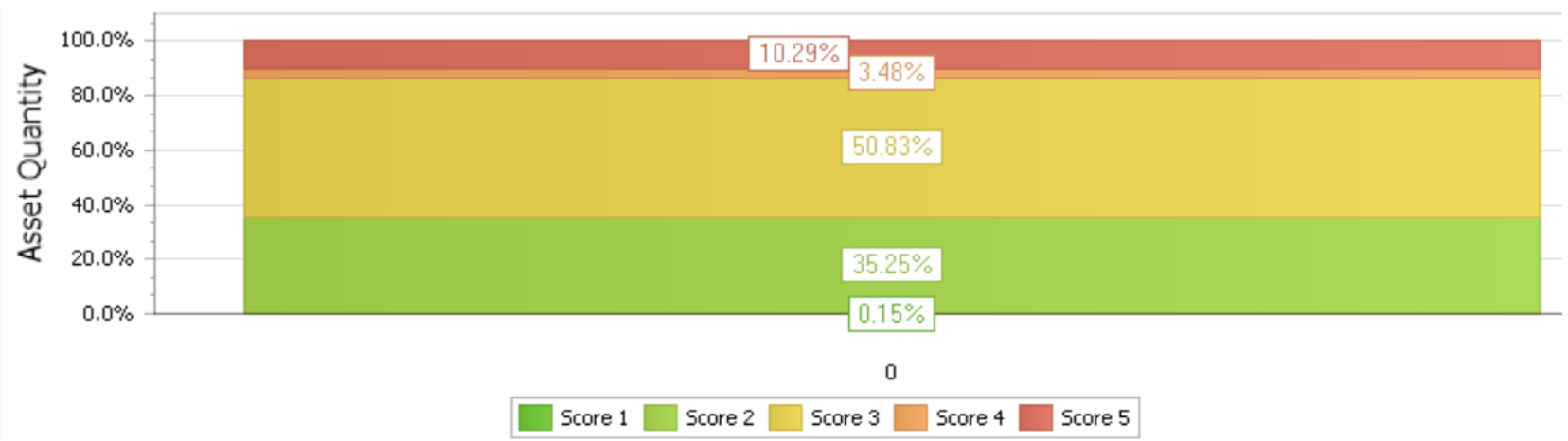
Table 5.1.3: Condition Grading System

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

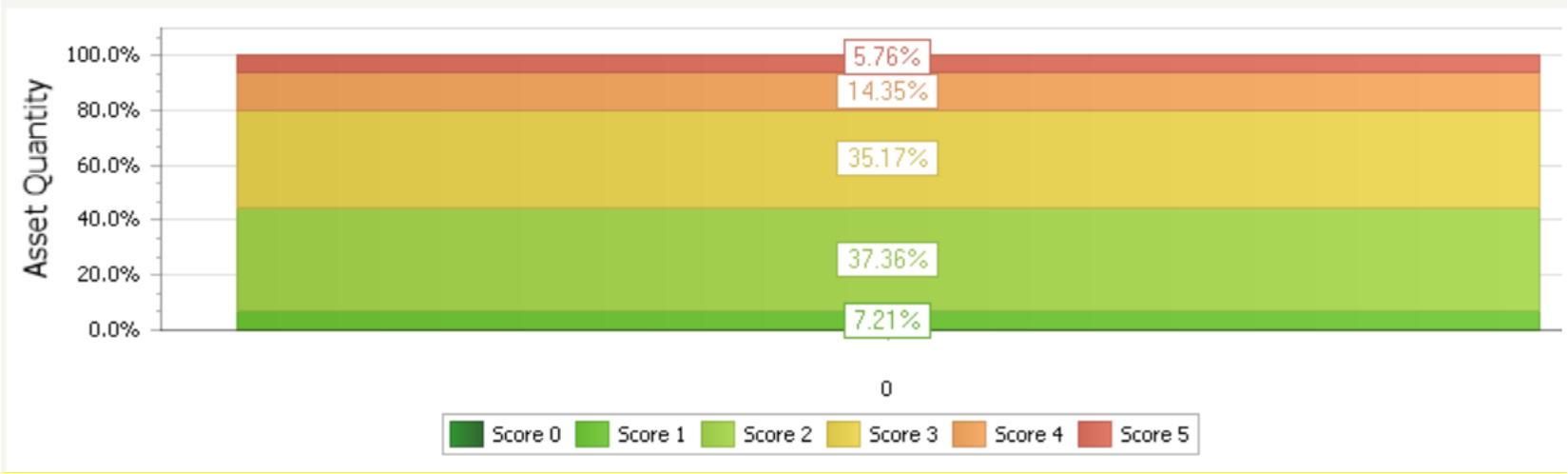
The condition profile of our assets is shown in Figure 5.1.3.

[16] IPWEA, 2020, IIMM, Sec 2.4.5.1

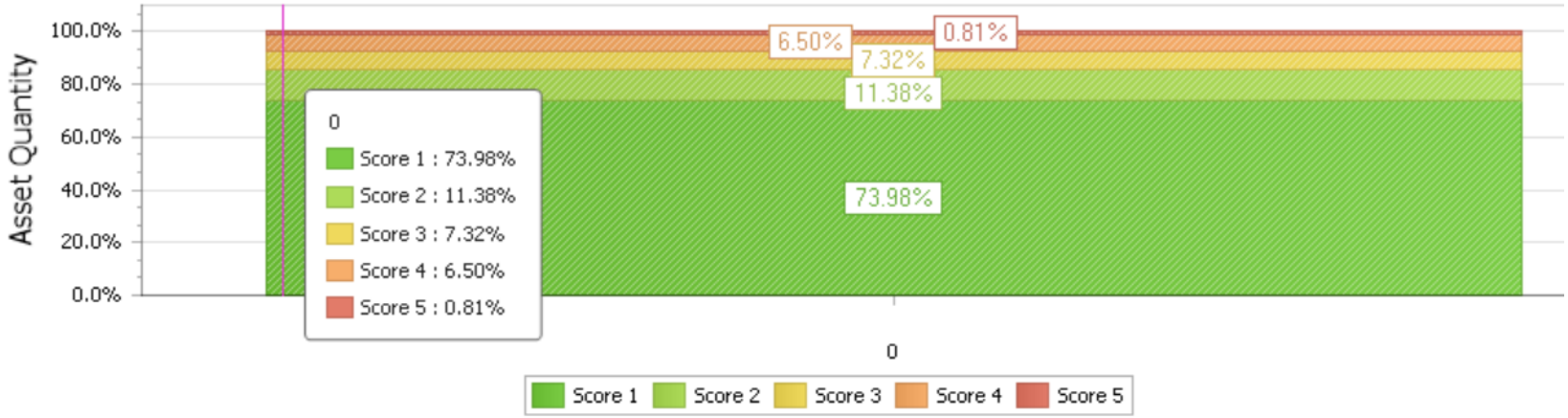
Figure 5.1.3: Asset Condition Profile



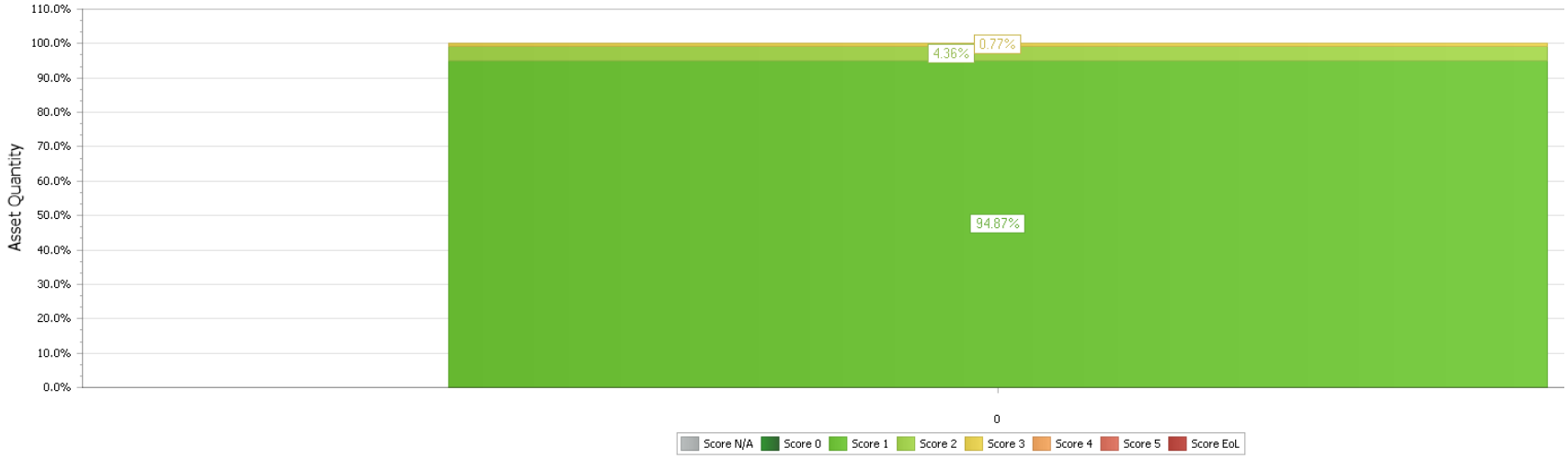
Unsealed Roads Surface



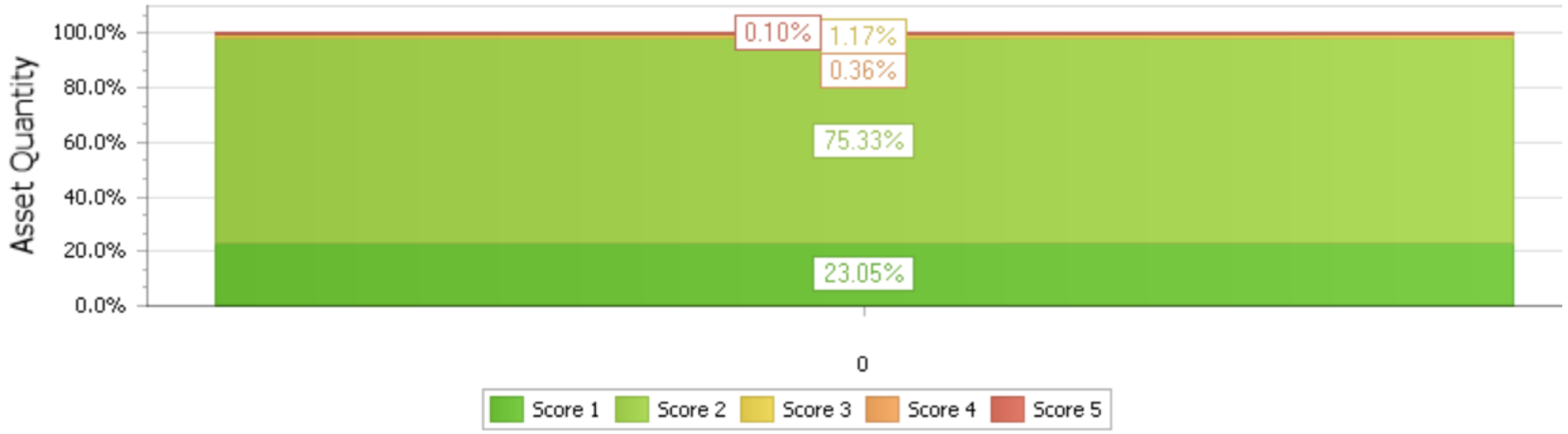
Sealed Roads Surface



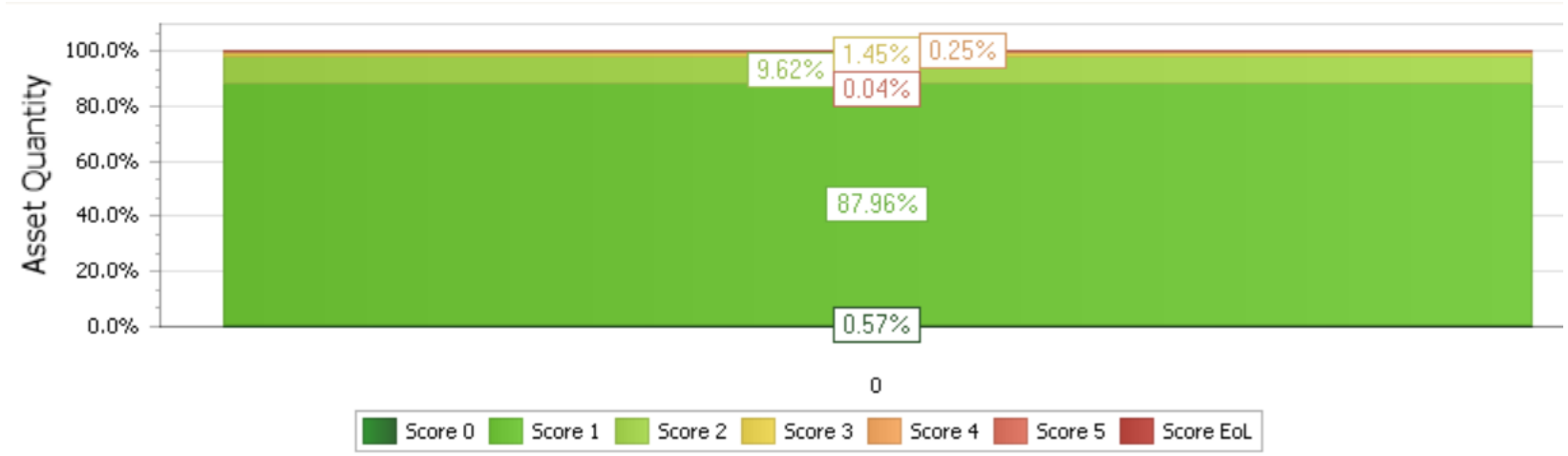
Carpark Surface



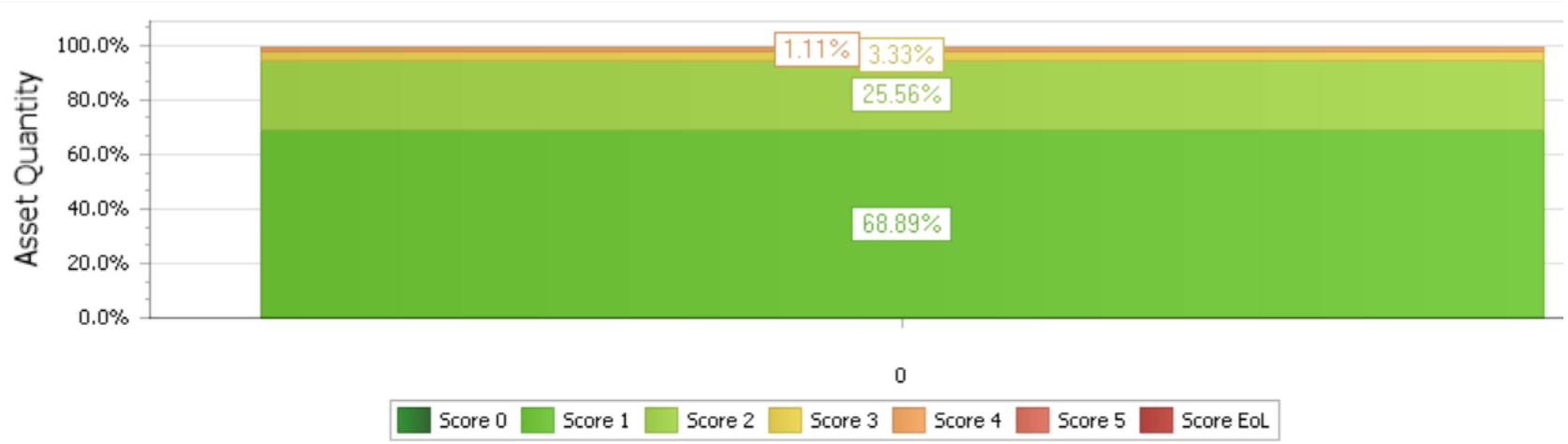
Traffic Facilities



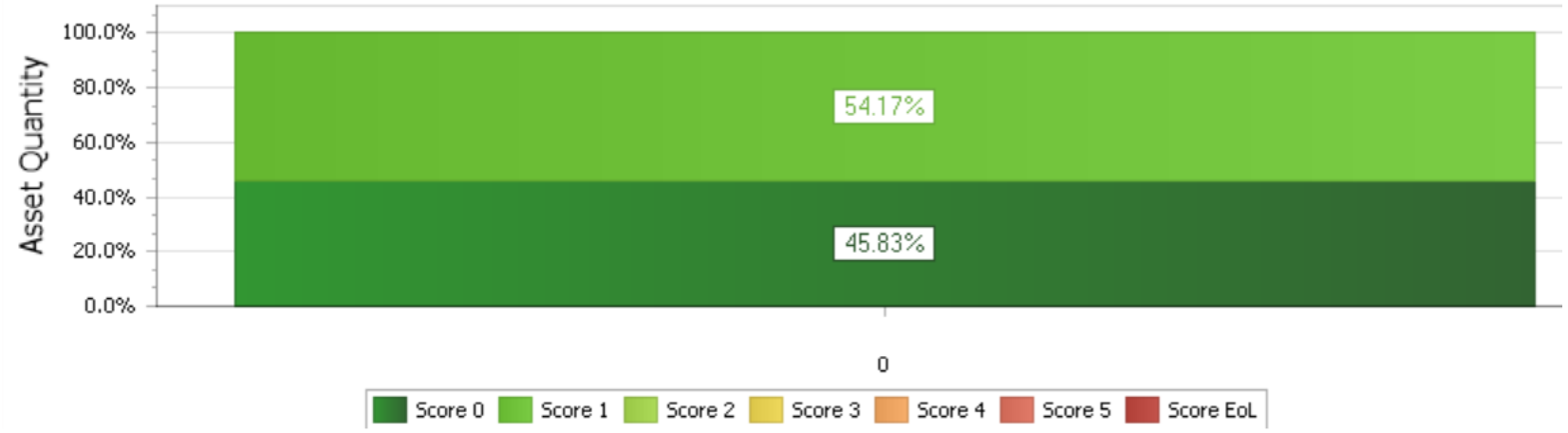
Footpaths



Kerb and Gutter



Bus Shelters



Runways and Taxiways

5.2 Operations and Maintenance Plan

Operations include regular activities to provide services. Examples of typical operational activities include cleaning, street sweeping, asset inspection, and utility costs.

Maintenance includes all actions necessary for retaining an asset as near as practicable to an appropriate service condition including regular ongoing day-to-day work necessary to keep assets operating. Examples of typical maintenance activities include pipe repairs, asphalt patching, and equipment repairs.

The trend in maintenance budgets are shown in Table 5.2.1.

Table 5.2.1: Maintenance Budget Trends

Year	Maintenance Budget $
2021/2022	$9,022,000
2023/2024	$12,134,021
2024/2025	$10,521,000

Maintenance budget levels are considered to be adequate to meet projected service levels, which may be less than or equal to current service levels. Where maintenance budget allocations are such that they will result in a lesser level of service, the service consequences and service risks have been identified and are highlighted in this AM Plan and service risks considered in the Infrastructure Risk Management Plan.

Assessment and priority of reactive maintenance is undertaken by staff using experience and judgement. CCC maintenance response levels of service are detailed in Appendix G, however this document needs to be reviewed.

Asset hierarchy

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

The service hierarchy is shown is Table 5.2.2.

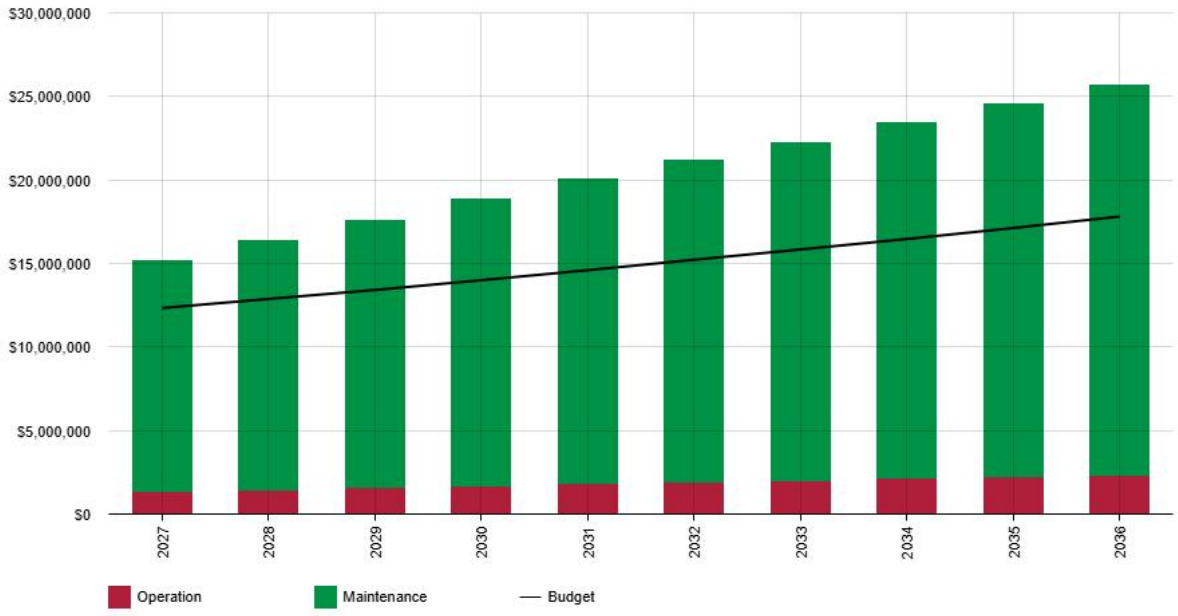
Table 5.2.2: Asset Service Hierarchy

Service Hierarchy	Definition
Urban / Rural Sub Arterial (Regional Roads)	Regional Roads perform an intermediate function between the main arterial network of TFNSW controlled State Roads and the network of local roads controlled by Council.
Urban / Rural Collector	Connects regional roads to the local road system.
Urban / Rural Local	Local access roads providing through traffic access to residential properties and some commercial premises.
Laneways	Roads that provide rear access to various land uses.

Summary of forecast operations and maintenance costs

Forecast operations and maintenance costs are expected to vary in relation to the total value of the asset stock. If additional assets are acquired, the future operations and maintenance costs are forecast to increase. If assets are disposed of the forecast operation and maintenance costs are expected to decrease. Figure 5.2 shows the forecast operations and maintenance costs relative to the proposed operations and maintenance Planned Budget.

Figure 5.2: Operations and Maintenance Summary



The budgeted maintenance and operational programs do not have capacity to accommodate the ever-increasing dedication of assets from development.

5.3 Renewal Plan

Renewal is major capital work which does not significantly alter the original service provided by the asset, but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered to be an acquisition/upgrade resulting in additional future operations and maintenance costs.

Assets requiring renewal are identified from one of two approaches in the Lifecycle Model.

- The first method uses Asset Register data to project the renewal costs (current replacement cost) and renewal timing (acquisition year plus updated useful life to determine the renewal year), or
- The second method uses an alternative approach to estimate the timing and cost of forecast renewal work (i.e. condition modelling system, staff judgement, average network renewals, or other).

The typical useful lives of assets used to develop projected asset renewal forecasts are shown in Table 5.3. Asset useful lives were last reviewed on 30th June 2020.

Table 5.3: Useful Lives of Assets

Asset (Sub)Category	Useful life
Roads, Carpark, Runways and Taxiways	
Road Surface – Concrete (CC)	100
Road Surface – Asphalt Concrete (AC)	25
Road Surface – Spray Seal (SS)	20
Road Surface – Gravel (US)	10
Base	65
Sub Base	200
Formation	Indefinite*
Bus Shelter	30
Pedestrian Refuge (Concrete)	100
Round-A-Bout	50
Footpath	
Concrete (CC)	100
Asphalt Concrete (AC)	25
Brick Pavers (BP)	34
Gravel (US)	10
Kerb & Gutter	100

* It is considered that the original excavation, import of initial depth of gravel, and prepared to receive road subgrade, will not be undertaken more than once over the life of the road construction

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

5.3.1 Renewal ranking criteria

Asset renewal is typically undertaken to either:

- Ensure the reliability of the existing infrastructure to deliver the service it was constructed to facilitate (e.g. Road base treatments for roads indicated to have higher volume and weighted vehicles, or
- To ensure the infrastructure is of sufficient quality to meet the service requirements (e.g. condition of a roads surface).[17]

It is possible to prioritise renewals by identifying assets or asset groups that:

- Have a high consequence of failure,
- Have high use and subsequent impact on users would be significant,
- Have higher than expected operational or maintenance costs, and
- Have potential to reduce life cycle costs by replacement with a modern equivalent asset that would provide the equivalent service.[18]

[17] IPWEA, 2020, IIMM, Sec 3.4.2
[18] IPWEA, 2020, IIMM, Sec 3.5.3

The ranking criteria used to determine priority for Cessnock City Councils' identified renewal proposals is detailed in the following Tables.

Table 5.3.1a: Sealed Roads Priority Ranking Criteria – All Programs

Criteria	Weighting
Road type/hierarchy	20%
Overall Condition Index	20%
Customer Request/Demand/growth	20%
Alternate Funding Source	10%
Available Traffic Data	15%
Site Inspection Data	15%
Total	**100%**

Table 5.3.1b: Unsealed Roads Priority Ranking Criteria – Resheeting

Criteria	Weighting
Road type/hierarchy	50%
Resheet frequency/CRM's	30%
Overall Condition Index	10%
Traffic Data (where available)	10%
Total	100%

Table 5.3.1c: Runway and Taxiway Priority Ranking Criteria

Criteria	Weighting
CASA Compliance	60%
Airport hierarchy	20%
Overall Condition Index	20%
Total	100%

Table 5.3.1d: Renewal Priority Ranking Criteria – Pathways[19]

Criteria	Weighting
Proximity to Commercial Development	11%
Proximity to Aged Citizens	11%
Proximity to Schools	11%
Pedestrian Hourly Volume	10%
Link to Public Transport	6%
Provides Missing Link Between Existing Footpaths	6%

[19] The Pedestrian Access and Mobility Plan (PAMP) has utilised the above ranking criteria to set a prioritised list of works to be undertaken, which is the current program.

Criteria	Weighting
Provides Tourism &/or Recreational Culture Benefit	6%
Residential Development Density	6%
Identified Access for Disabled	11%
Council Resolution	11%
Identified as Part of a Link to a Development Project	11%
Total	**100%**

Table 5.3.1e: Priority Ranking Criteria – Bus Shelters – all programs

Criteria	Weighting
Request from Bus Service Provider	20%
Road Hierarchy	10%
Proximity to School Bus Route Pick-Up Stops	20%
Amenability for DDA compliance	15%
Community Requests	5%
Provides at Least one Shelter in Each LGA Locality	10%
Council Resolution	10%
Condition of Development Consent	10%
Total	**100%**

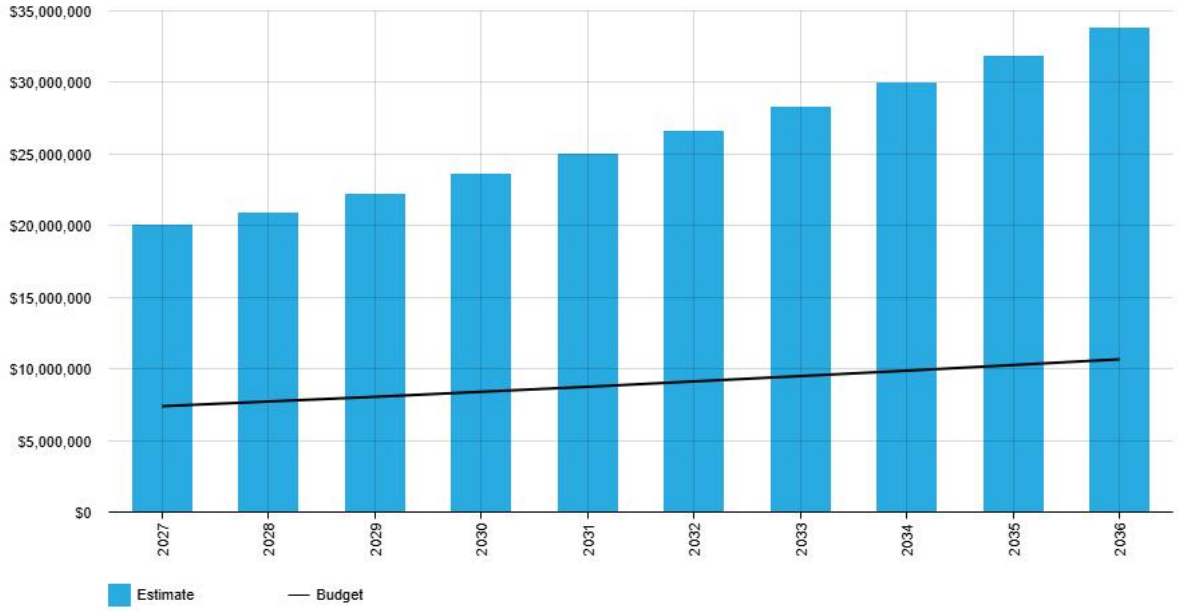
Table 5.3.1f: Renewal Priority Ranking Criteria – Traffic Facilities

Criteria	Weighting
Hierarchy / Trip Generators	30%
Customer Requests	15%
Overall Condition Index	20%
Traffic Data (where available)	25%
Council Resolution	10%
Total	**100%**

5.4 Summary of future renewal costs

Forecast renewal costs are projected to increase over time if the asset stock increases. The forecast costs associated with renewals are shown relative to the proposed renewal budget in Figure 5.4.1. A detailed summary of the forecast renewal costs is shown in Appendix D.

Figure 5.4.1: Forecast Renewal Costs



The budgeted amount for renewal does not meet what is forecasted to meet community expectations.

5.5 Acquisition Plan

Acquisition reflects new assets that did not previously exist or works which will upgrade or improve an existing asset beyond its existing capacity. They may result from growth, demand, social or environmental needs. Assets may also be donated to the Cessnock City Council.

5.5.1 Selection criteria

Proposed acquisition of new assets, and upgrade of existing assets, are identified from various sources such as community requests, proposals identified by strategic plans or partnerships with others. Potential upgrade and new works should be reviewed to verify that they are essential to the Councils' needs. Proposed upgrade and new work analysis should also include the development of a preliminary renewal estimate to ensure that the services are sustainable over the longer term. Verified proposals can then be ranked by priority and available funds and scheduled in future works programmes. The priority ranking criteria's are detailed in the following tables: it must be noted that a large proportion of upgrade works can only be undertaken should external funding become available.

Table 5.5.1a: Sealed Roads Priority Ranking Criteria – All Programs

Criteria	Weighting
Road type/hierarchy	20%
Overall Condition Index	20%
Customer Request/Demand/growth	20%
Alternate Funding Source	10%
Available Traffic Data	15%
Site Inspection Data	15%
Total	**100%**

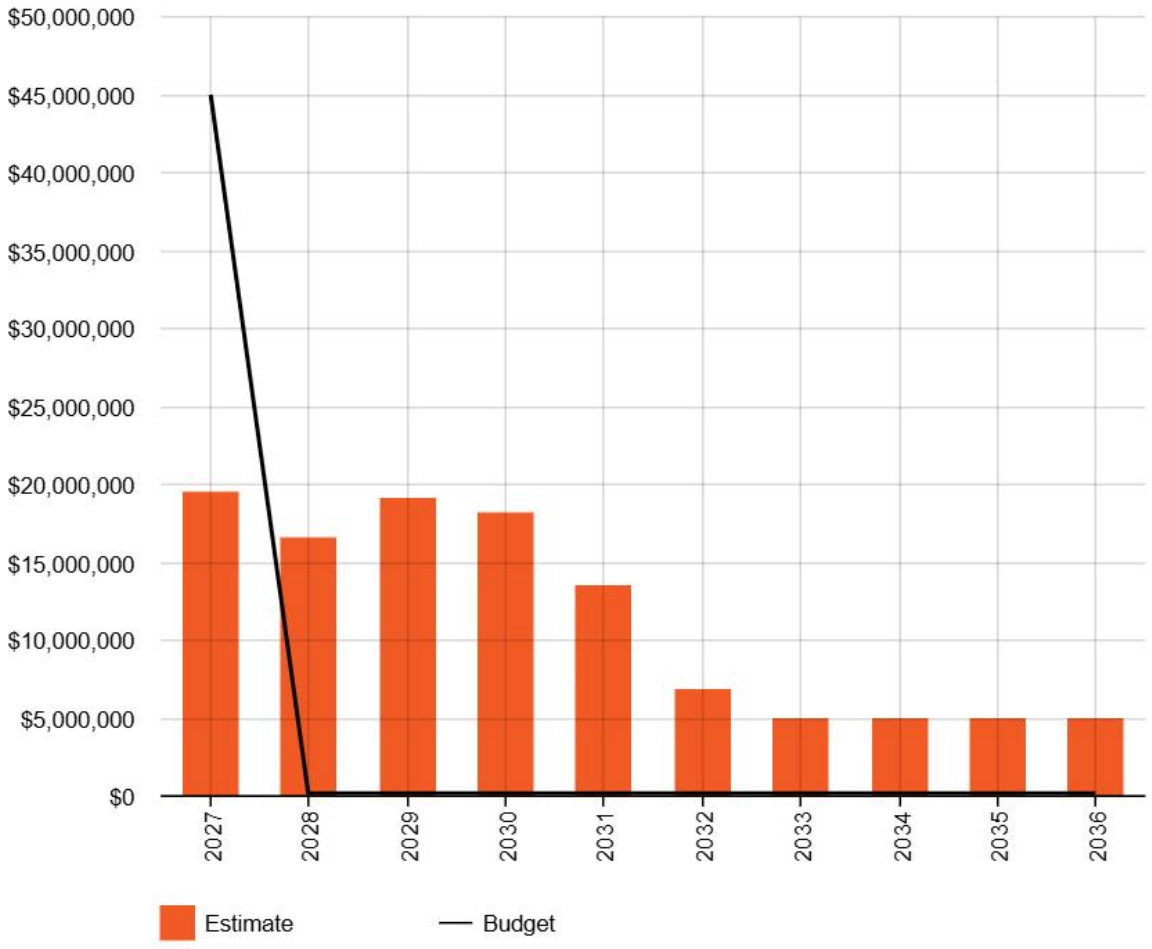
Table 5.5.1c: Acquired Assets Priority Ranking Criteria – Pathways, Kerb, Traffic Facilities

Criteria	Weighting
Alternate Funding Source	90%
As indicated in a masterplan, strategic plan, plan of management	10%
Total	**100%**

Summary of future asset acquisition costs

Forecast acquisition asset costs are summarised / summarized in Figure 5.5.1 and shown relative to the proposed acquisition budget. The forecast acquisition capital works program is shown in Appendix A.

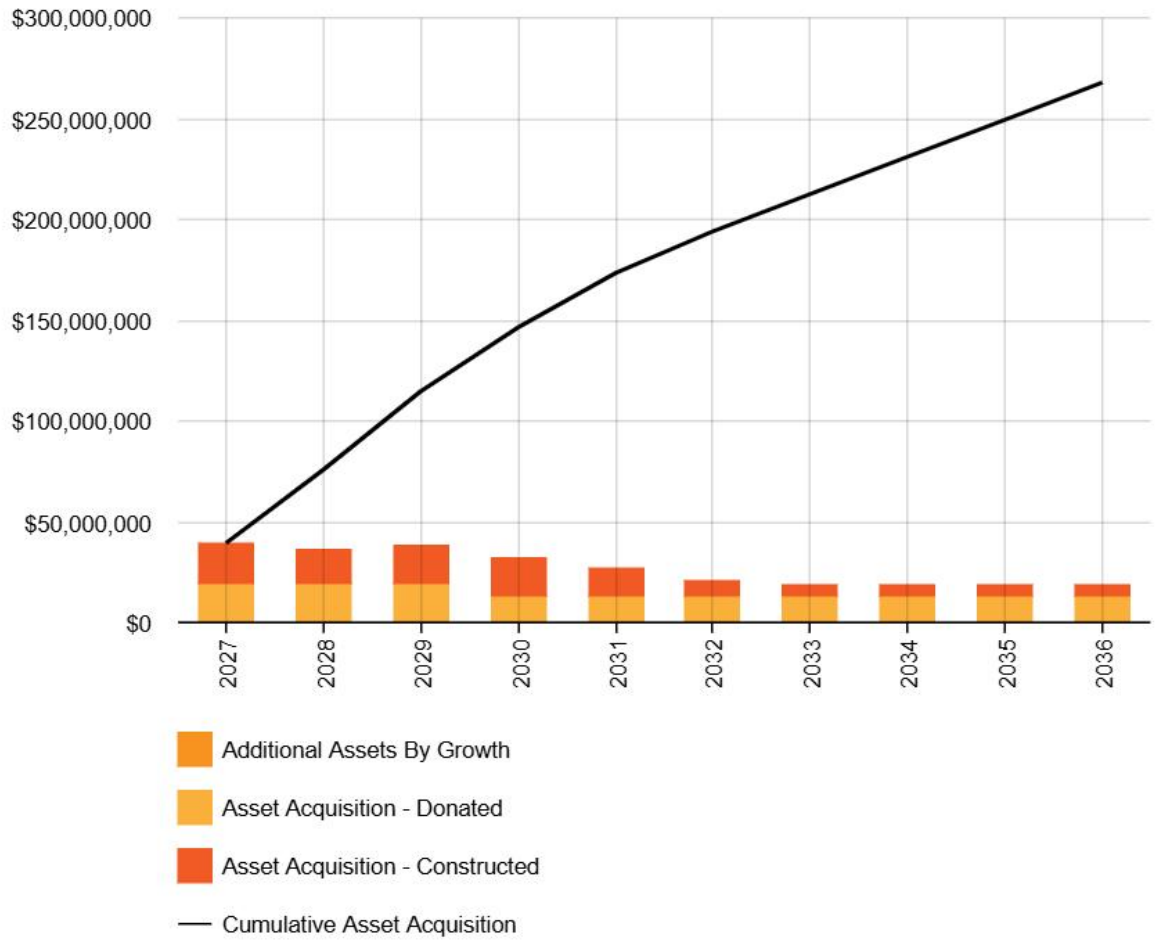
Figure 5.5.1: Acquisition (Constructed) Summary



* Wollombi Road project skew year 1 as predominately grant funds

When an Entity commits to new assets, they must be prepared to fund future operations, maintenance and renewal costs. They must also account for future depreciation when reviewing long term sustainability. When reviewing the long-term impacts of asset acquisition, it is useful to consider the cumulative value of the acquired assets being taken on by the Entity. The cumulative value of all acquisition work, including assets that are constructed and contributed shown in Figure 5.5.2.

Figure 5.5.2: Acquisition Summary



Expenditure on new assets and services in the capital works program will be accommodated in the long-term financial plan, but only to the extent that there is available funding.

It is evident through the condition of the current asset stock, and rate in which Cessnock City Council are acquiring new assets through development contribution, that the proposed budget compared to acquisition forecasts is inadequate. It is important that Council recognise the impact of new assets e.g. acquiring these new assets will commit the funding of ongoing operations, maintenance and renewal costs for the period that the service is provided from the assets.

5.6 Disposal Plan

Disposal includes any activity associated with the disposal of a decommissioned asset including sale, demolition or relocation. Currently, there are no road or road infrastructure

assets considered for disposal. Assets within this class, by nature, are somewhat difficult to decommission or provide an alternate service solution for.

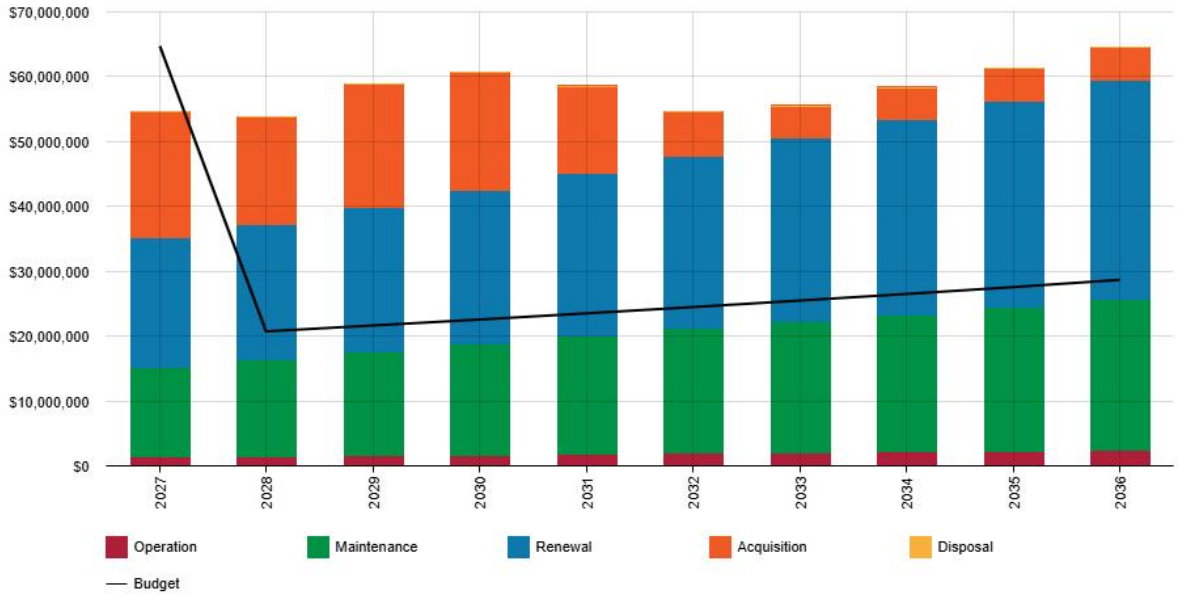
Should future assets be identified within the disposal plan within this AMP, they are to be reported on to the Asset Management Steering Group. Where deadlines for commitments cannot be met; it is to be reported on and updated to the group accordingly.

5.7 Summary of asset forecast costs

The financial projections from this asset plan are shown in Figure 5.7.1. These projections include forecast costs for acquisition, operation, maintenance, renewal, and disposal. These forecast costs are shown relative to the proposed budget.

The bars in the graphs represent the forecast costs needed to minimise the life cycle costs associated with the service provision. The proposed budget line indicates the estimate of available funding. The gap between the forecast work and the proposed budget is the basis of the discussion on achieving balance between costs, levels of service and risk to achieve the best value outcome.

Figure 5.7.1: Lifecycle Summary



It is evident from the lifecycle summary that current budgets do not keep up with community service requirements. It is also clear that assets contributed through development will place ongoing pressure on all lifecycle costs Council incurs, that is, that current budgets do not meet forecasted requirements.

6.0 RISK MANAGEMENT PLANNING

The purpose of infrastructure risk management is to document the findings and recommendations resulting from the periodic identification, assessment and treatment of risks associated with providing services from infrastructure, using the fundamentals of International Standard ISO 31000:2018 Risk management – Principles and guidelines.

Risk Management is defined in ISO 31000:2018 as: 'coordinated activities to direct and control with regard to risk'[20].

An assessment of risks[21] associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, and the consequences should the event occur. The risk assessment should also include the development of a risk rating, evaluation of the risks and development of a risk treatment plan for those risks that are deemed to be non-acceptable.

6.1 Critical Assets

Critical assets are defined as those which have a high consequence of failure causing significant loss or reduction of service. Critical assets have been identified and along with their typical failure mode, and the impact on service delivery, are summarised in Table 6.1. Failure modes may include physical failure, collapse or essential service interruption.

Table 6.1 Critical Assets

Critical Asset(s)	Failure Mode	Impact	Operations & Maintenance Activities
Sealed Roads	Deformation due to increase in heavy vehicles and traffic volumes. Structural failure due to pavement deformation.	Low risk to vehicles or injury. High political/reputation risk.	Regular inspections and repair and/or replacement programs.
Unsealed Roads	Potholing, Rutting, corrugations & scouring.	Low risk to vehicles or injury. High political/reputation risk.	Regular inspections and on-going rural road maintenance programs.
Road Infrastructure	Damage through climate events	Traffic disruption or confusion. Low-medium political/reputation risk.	Regular inspections and repair and/or replacement programs.
Kerb & Gutter	Deformation and uplift due to tree roots and/or vehicle damage	Low risk injury. Low-medium political/reputation risk.	Regular inspections and repair and/or replacement programs.

[20] ISO 31000:2018
[21] DOC2015/012452 Asset Management _ CCC NAMS PLUS Advanced Infrastructure Risk Management Plan _ 20-3-2015 _ Michelle Watson

By identifying critical assets and failure modes an organisation can ensure that investigative activities, condition inspection programs, maintenance and capital expenditure plans are targeted at critical assets.

6.2 Risk Assessment

The risk management process used is shown in Figure 6.2 below.

It is an analysis and problem-solving technique designed to provide a logical process for the selection of treatment plans and management actions to protect the community against unacceptable risks.

The process is based on the fundamentals of International Standard ISO 31000:2018.

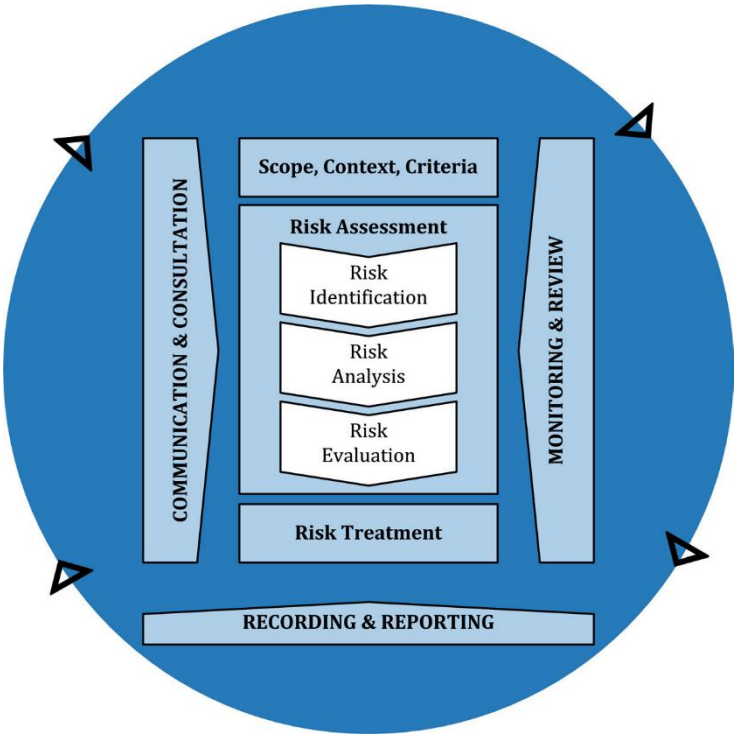


Fig 6.2 Risk Management Process – Abridged
Source: ISO 31000:2018, Figure 1, p9

The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, development of a risk rating, evaluation of the risk and development of a risk treatment plan for non-acceptable risks.

An assessment of risks associated with service delivery will identify risks that will result in loss or reduction in service, personal injury, environmental impacts, a 'financial shock', reputational impacts, or other consequences.

Critical risks are those assessed with 'Very High' (requiring immediate corrective action) and 'High' (requiring corrective action) risk ratings identified in the Infrastructure Risk Management Plan. The residual risk and treatment costs of implementing the selected treatment plan is shown in Table 6.2. It is essential that these critical risks and costs are reported to management and Cessnock City Council.

Table 6.2: Risks and Treatment Plans

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
All road and road infrastructure assets	Inadequate resources/funding to maintain infrastructure to an appropriate standard, resulting in asset failure, injury, reputational damage, legal action.	VH	Regular inspections, asset management plan, & undertake community consultation to establish affordable service levels.	M	TBC
Roads and Carparks	Failure of the surface of the road.	VH	Regular inspections, Community Feedback, Customer Service Requests, Maintenance and renewal programs.	M-L	TBC
Roads	Accidents due to road failure, polished surface or edge break, resulting in injury, reputational damage, or legal action.	VH	Maintain annual works program, and inspect complaints from public regarding dangerous conditions on road. Routine maintenance and Asset Inspections.	M	TBC
Roads	Shortened designed life expectancy, premature road failure due to historic pavement design practices.	M	Geotechnical investigation and/or formal pavement design for all projects. Maintenance and renewal programs.	M-L	TBC

Service or Asset at Risk	What can Happen	Risk Rating (VH, H)	Risk Treatment Plan	Residual Risk *	Treatment Costs
Roads Pavement	Failure of road pavement or pavement overloads due to more heavy vehicles usage, resulting in water penetration, geotechnical issues, reduced carrying capacity.	H	Regular inspections, maintenance and renewal programs. Work with strategic planners to identify critical heavy vehicle freight routes and future demand in these areas. Impose load limits where necessary.	M	TBC
Roads	Road works not undertaken in accordance with correct Design Standards, Regulations and Legislation.	M	Community feedback on unauthorised works, correct planning, adherence to guidelines and procedures.	L	TBC
Round-a-bouts, Pedestrian Refuges,	Structural failure or damage to asset due to age, vandalism, inadequate design.	M	Planned inspections, maintenance and renewal programs.	L	TBC
Bus Shelters	Structural failure or damage to asset due to age, vandalism, inadequate design.	L	Planned inspections, maintenance and renewal programs.	L	TBC

Footpaths	Structural failure, deterioration leading to safety risks.	H	Planned inspections, maintenance and renewal programs. Correct footpath design procedures.	M	TBC
Kerb & Gutter	Structural failure, deterioration due to age, drain blockage from inadequate maintenance.	M	Planned inspections, maintenance and renewal programs, community feedback.	M	TBC

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

6.3 Infrastructure Resilience Approach

The resilience of our critical infrastructure is vital to the ongoing provision of services to customers. To adapt to changing conditions we need to understand our capacity to 'withstand a given level of stress or demand', and to respond to possible disruptions to ensure continuity of service.

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

Our current measure of resilience is shown in Table 6.3 which includes the type of threats and hazards and the current measures that the organisation takes to ensure service delivery resilience.

Table 6.3: Resilience Assessment

Threat / Hazard	Assessment Method	Current Resilience Approach
Floods	Roadside drainage review	Low
Fire	Clearing of debris	Low
Drought	Review use of grey water reuse for dust suppression, street cleaning	Low

6.4 Service and Risk Trade-Offs

The decisions made in adopting this AM Plan are based on the objective to achieve the optimum benefits from the available resources.

6.4.1 What we cannot do

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

- The optimised annual road rehabilitation and renewal forecast program

6.4.2 Service trade-off

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

- Reduction in rural road maintenance cycles.
- Decrease in LoS for road surface.

6.4.3 Risk trade-off

The operations and maintenance activities and capital projects that cannot be undertaken may sustain or create risk consequences. These risk consequences include:

- Road pavement failure leading to more expensive rehabilitation costs
- Increased risk of motor vehicle accidents due to road failure
- Negative public perception as a result of major pavement failure

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

7.0 FINANCIAL SUMMARY

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

7.1 Financial Sustainability and Projections

7.1.1 Sustainability of service delivery

There are two key indicators of sustainable service delivery that are considered in the AM Plan for this service area. The two indicators are the:

- asset renewal funding ratio (proposed renewal budget for the next 10 years / forecast renewal costs for next 10 years), and
- medium term forecast costs/proposed budget (over 10 years of the planning period).

Asset Renewal Funding Ratio

Asset Renewal Funding Ratio[22] 34.22%

The Asset Renewal Funding Ratio is an important indicator and illustrates that over the next 10 years we expect to have 34.22% of the funds required for the optimal renewal of assets.

The forecast renewal work along with the proposed renewal budget, and the cumulative shortfall, is illustrated in Appendix D.

Medium term – 10-year financial planning period

This AM Plan identifies the forecast operations, maintenance and renewal costs required to provide an agreed level of service to the community over a 10 year period. This provides input into 10 year financial and funding plans aimed at providing the required services in a sustainable manner.

This forecast work can be compared to the proposed budget over the first 10 years of the planning period to identify any funding shortfall.

The forecast operations, maintenance and renewal costs over the 10 year planning period is $46,722,824 on average per year.

The proposed (budget) operations, maintenance and renewal funding is $23,939,074 on average per year giving a 10-year funding shortfall of $22,783,752 per year. This indicates that 51.24% of the forecast costs needed to provide the services documented in this AM Plan are accommodated in the proposed budget. Note, these calculations exclude acquired assets. Providing sustainable services from infrastructure requires the management of service levels, risks, forecast outlays and financing to achieve a financial indicator of approximately 51.24% for the first years of the AM Plan.

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

Table 7.1.3 shows the forecast costs (outlays) required for consideration in the 10 year long-term financial plan.

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

[22] AIFMM, 2020, Sec 2.4.2

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

We will manage the 'gap' by developing this AM Plan to provide guidance on future service levels and resources required to provide these services in consultation with the community.

Forecast costs are shown in current dollars.

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

Year	Acquisition	Operation	Maintenance	Renewal	Disposal
2027	19,425,000	1,361,987	13,833,310	20,000,000	$0
2028	16,490,400	1,479,690	14,920,952	20,900,000	$0
2029	19,055,600	1,595,509	15,997,490	22,195,800	$0
2030	18,187,760	1,717,803	17,132,772	23,571,940	$0
2031	13,500,000	1,831,785	18,203,780	25,033,400	$0
2032	6,800,000	1,939,980	19,245,212	26,585,472	$0
2033	5,000,000	2,039,289	20,233,164	28,233,770	$0
2034	5,000,000	2,136,973	21,230,184	29,984,264	$0
2035	5,000,000	2,237,455	22,260,134	31,843,288	$0
2036	5,000,000	2,340,845	23,324,428	33,817,572	$0

7.2 Funding Strategy

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

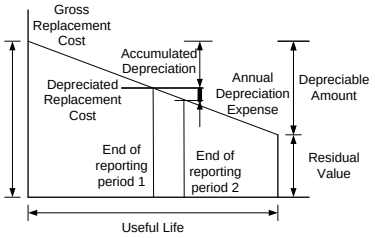
The financial strategy of the entity determines how funding will be provided, whereas the AM Plan communicates how and when this will be spent, along with the service and risk consequences of various service alternatives.

7.3 Valuation Forecasts

7.3.1 Asset valuations

The best available estimate of the value of assets included in this AM Plan are shown below. The assets are valued at fair value at cost to replace service capacity as at the 30th June 2022.

Replacement Cost (Current/Gross)	$1,128,490,282
Depreciable Amount	$890,486,410
Depreciated Replacement Cost[23]	$860,524,606
Depreciation	$15,927,962



7.3.2 Valuation forecast

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

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

Additional assets will generally add to the operations and maintenance needs in the longer term. Additional assets will also require additional costs due to future renewals. Any additional assets will also add to future depreciation forecasts.

7.4 Key Assumptions Made in Financial Forecasts

In compiling this AM Plan, it was necessary to make some assumptions. This section details the key assumptions made in the development of this AM plan and should provide readers with an understanding of the level of confidence in the data behind the financial forecasts.

Key assumptions made in this AM Plan are:

Key Assumptions	Risks of Change to Assumptions
Use of existing inventory and condition data as at 30 June 2024.	Condition data was last compiled during the revaluation exercise undertaken in 2023/24.
Use of 2023/24 2024/2025 Asset Revaluation Manual.	This Asset Management Plan is based on asset revaluation undertaken in 2024/25.
Maintenance and Ops forecast budget utilising historic shortfalls for “required” amount.	Very low risk of any dramatic change in overruns in budgets. Change to annual review of plans will mitigate any dramatic increases or decreases.
Contribution/acquisition budgets and percentages have been based on current budgets as a percentage of the replacement cost of the asset class, and also considering previous years contribution values as a percentage of the current total replacement value of the asset class.	There is medium risk that value of contributions will change in the short – medium term. The implementation of annual review of the plan will mitigate the implication this has on utilising forecast budgets for forward planning.

7.5 Forecast Reliability and Confidence

The forecast costs, proposed budgets, and valuation projections in this AM Plan are based on the best available data. For effective asset and financial management, it is critical that the information is current and accurate. Data confidence is classified on a A - E level scale[24] in accordance with Table 7.5.1.

[24] IPWEA, 2020, Sec 4.2.7

Table 7.5.1: Data Confidence Grading System

Confidence Grade	Description
A. Very High	Data based on sound records, procedures, investigations and analysis, documented properly and agreed as the best method of assessment. Dataset is complete and estimated to be accurate ± 2%
B. High	Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some of the data is old, some documentation is missing and/or reliance is placed on unconfirmed reports or some extrapolation. Dataset is complete and estimated to be accurate ± 10%
C. Medium	Data based on sound records, procedures, investigations and analysis which is incomplete or unsupported, or extrapolated from a limited sample for which grade A or B data are available. Dataset is substantially complete but up to 50% is extrapolated data and accuracy estimated ± 25%
D. Low	Data is based on unconfirmed verbal reports and/or cursory inspections and analysis. Dataset may not be fully complete, and most data is estimated or extrapolated. Accuracy ± 40%
E. Very Low	None or very little data held.

The estimated confidence level for and reliability of data used in this AM Plan is shown in Table 7.5.2.

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

Data	Confidence Assessment	Comment
Demand drivers	B	Based on demographic analysis undertaken in 2023 and State Government projections.
Growth projections	B	Based on demographic analysis undertaken in 2023 and State Government projections.
Acquisition forecast	B	Based on known capital allocations from State Government Grand funding and historic trend of dedications.
Operation forecast	B	Council financial records.
Maintenance forecast	B	Council financial records.
Renewal forecast - Asset values	A	Assets revalued in 2023/24
- Asset useful lives	A	Useful lives based on industry standards, reviewed 23/24
- Condition modelling	A	Condition assessment based on 2023/24 revaluation exercise.
Disposal forecast	A	Nil assets identified for disposal.

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

8.0 PLAN IMPROVEMENT AND MONITORING

8.1 Status of Asset Management Practices[25]

8.1.1 Accounting and financial data sources

This AM Plan utilises accounting and financial data. The source of the data is from Council's Corporate Accounting System, Civica Authority. Data also sourced from the adopted 4-year program and LTFP.

8.1.2 Asset management data sources

This AM Plan also utilises asset management data. The source of the data is from Council's Corporate Asset Register Brightly (formerly Assetic) MyData.

8.2 Improvement Plan

It is important that an entity recognise areas of their AM Plan and planning process that require future improvements to ensure effective asset management and informed decision making. The improvement plan generated from this AM Plan is shown in Table 8.2.

Table 8.2: Improvement Plan

Task	Task	Responsibility	Resources Required	Timeline
1	Undertake further community consultation to allow a full review of service levels.	Asset Planning	In-house, external	When resourcing permits
2	Finalise desired levels of service by establishing current performance and setting performance targets. Have these Levels of Service adopted by Council	Works & Infrastructure/Assets /Finance & Admin Services Manager / Service Delivery Managers	In-house	When resourcing permits
3	Review of customer importance and current trend of not sealing unsealed roads.	Works & Infrastructure/Assets / Finance / Works and Operations Managers	In-house	When resourcing permits
4	Improve response to climate change impacts	Assets/Works and Operations	In-house	Next Adoption
5	Undertake stakeholder review of identified critical assets	Works & Infrastructure/Assets	In-house	Next Adoption
6	Undertake stakeholder review of identified resilience strategies	Works & Infrastructure/Assets	In-house	Next Adoption

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

8.3 Monitoring and Review Procedures

This AM Plan will be reviewed during the annual budget planning process and revised to show any material changes in service levels, risks, forecast costs and proposed budgets as a result of budget decisions.

The AM Plan will be reviewed and updated annually at desktop level to ensure it represents the current service level, asset values, forecast operations, maintenance, renewals, acquisition and asset disposal costs and planned budgets. These forecast costs and proposed budget are incorporated into the Long-Term Financial Plan or will be incorporated into the Long-Term Financial Plan once completed.

The AM Plan has a maximum adoption life of 4 years and is due for complete revision and update 12 months from a Council Election and/or as part of a new Operational Plan cycle.

8.4 Performance Measures

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

- The degree to which the required forecast costs identified in this AM Plan are incorporated into the long-term financial plan,
- The degree to which the 1-5 year detailed works programs, budgets, business plans and corporate structures consider the ‘global’ works program trends provided by the AM Plan,
- The degree to which the existing and projected service levels and service consequences, risks and residual risks are incorporated into the Strategic Planning documents and associated plans,
- The Asset Renewal Funding Ratio achieving the Organisational target (this target is often 90 – 100%).

9.0 REFERENCES

- IPWEA, 2020, 'International Infrastructure Management Manual', Institute of Public Works Engineering Australasia, Sydney, www.ipwea.org/IIMM
- IPWEA, 2020 'International Infrastructure Financial Management Manual', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2018, Practice Note 12.1, 'Climate Change Impacts on the Useful Life of Assets', Institute of Public Works Engineering Australasia, Sydney
- IPWEA, 2012, Practice Note 6 Long-Term Financial Planning, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn6
- IPWEA, 2014, Practice Note 8 – Levels of Service & Community Engagement, Institute of Public Works Engineering Australasia, Sydney, https://www.ipwea.org/publications/ipweabookshop/practicenotes/pn8
- ISO 55000, Overview, principles and terminology
- ISO 31000, Risk management – Guidelines
- Cessnock 2036 – Cessnock Community Strategic Plan
- Cessnock City Council Delivery and Operational Plan
- Cessnock City Council Annual Reports
- 2023-2024 & 2024-2025 Infrastructure Asset Revaluation Manual
- NSW OLG Integrated Planning Guidelines and manual
- Cessnock City Council 2023 Resident Satisfaction Survey Results
- Cessnock City Council 2021 Resident Satisfaction Survey Results
- Cessnock City Council 2016 Resident Satisfaction Survey Results
- Cessnock City Council 2015 Asset Management Research Satisfaction Survey Results

10.0 APPENDICES

Appendix A - Acquisition Forecast

A.1 – Acquisition Forecast Summary

Donated assets are assumed based on historic rate of dedications and proposed upcoming subdivisions.

Table A3 - Acquisition Forecast Summary

Year	Constructed	Donated	Growth
2027	19425000	20000000	$0
2028	16490400	20000000	$0
2029	19055600	20000000	$0
2030	18187760	13500000	$0
2031	13500000	13500000	$0
2032	6800000	13500000	$0
2033	5000000	13500000	$0
2034	5000000	13500000	$0
2035	5000000	13500000	$0
2036	5000000	13500000	$0

Appendix B - Operation Forecast

B.1 – Operation Forecast Summary

The operational budget will not meet the service level requirements by year 10 of the planning period. Predominately due to acquired assets.

Table B2 - Operation Forecast Summary

Year	Operation Forecast	Additional Operation Forecast	Total Operation Forecast
2027	1361987	59138	1361987
2028	1420552	54736	1479690
2029	1481636	58583	1595509
2030	1545347	47532	1717803
2031	1611796	40500	1831785
2032	1679492	30450	1939980
2033	1748351	27750	2039289
2034	1818285	27750	2136973
2035	1891017	27750	2237455
2036	1966657	27750	2340845

Appendix C - Maintenance Forecast

C.1 – Maintenance Forecast Summary

The maintenance budget will not meet the service level requirements by year 10 of the planning period. Predominately due to acquired assets.

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Table C2 - Maintenance Forecast Summary

Year	Maintenance Forecast	Additional Maintenance Forecast	Total Maintenance Forecast
2027	10973403	492813	13833310
2028	11445259	456130	14920952
2029	11937405	488195	15997490
2030	12450714	396097	17132772
2031	12986095	337500	18203780
2032	13531511	253750	19245212
2033	14086303	231250	20233164
2034	14649755	231250	21230184
2035	15235745	231250	22260134
2036	15845175	231250	23324428

Appendix D - Renewal Forecast Summary

D.3 – Renewal Forecast Summary

The current renewal budget is not meeting the requirements of community desired service levels.

Table D3 - Renewal Forecast Summary

Year	Renewal Forecast	Renewal Budget
2027	20,000,000	7395000
2028	20,900,000	7712985
2029	22,195,800	8044644
2030	23,571,940	8390563
2031	25,033,400	8751357
2032	26,585,472	9118914
2033	28,233,770	9492790
2034	29,984,264	9872501
2035	31,843,288	10267401
2036	33,817,572	10678097

Appendix E - Budget Summary by Lifecycle Activity

Table F1 – Budget Summary by Lifecycle Activity

Year	Acquisition	Operation	Maintenance	Renewal	Disposal	Total
2027	45000000	1361987	10973403	7395000	0	64730392
2028	170000	1420552	11445259	7712985	0	20748796
2029	170000	1481636	11937405	8044644	0	21633684
2030	170000	1545347	12450714	8390563	0	22556624
2031	170000	1611796	12986095	8751357	0	23519248
2032	170000	1679492	13531511	9118914	0	24499916
2033	170000	1748351	14086303	9492790	0	25497444
2034	170000	1818285	14649755	9872501	0	26510540
2035	170000	1891017	15235745	10267401	0	27564162
2036	170000	1966657	15845175	10678097	0	28659930

Appendix F Service Standards

CRM Category Service Standards

Major Cat	Minor Cat	Level 3 Cat	CRM Description	Default Workflow	Resp Officer	Days
COMMUNSERV	MAINTENANC		Works & Infrast Enquiry	CSEQ	Mr J P Latter	90
PLANT	WORKSHOP		Plant Fleet Workshop Enquiry	PLNT	Mr J P Latter	10
AIRPORT	AIRENQUIRY		Airport Enquiries	AIRP	Mr J P Latter	10
MAINTENANC	MAINBRIDGE		Maintenance - Bridges	MBRI	Mr J P Latter	90
MAINTENANC	MAINCOFOOT		Maintenance - Footpaths	MCON	Mr J P Latter	45
MAINTENANC	MAINKERBGT		Maintenance - Kerb & Gutter	MKER	Mr J P Latter	90
MAINTENANC	MAINMOWING		Maintenance - Mowing	MMOW	Mr J P Latter	45
MAINTENANC	MAINSIGNS		Maintenance - Signs	MSIG	Mr J P Latter	45
MAINTENANC	MAINSTORM		Maintenance - Stormwater Dr	MSTO	Mr J P Latter	90
MAINTENANC	MAINTREES		Maintenance - Trees	MTRE	Mr J P Latter	45
MAINTENANC	REMOVEDEAD		Removal of Dead Animal	MVDA	Mr J P Latter	5

CESSNOCK
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